II

(Acts whose publication is not obligatory)

COMMISSION

COMMISSION DECISION

of 26 July 2000

declaring a concentration compatible with the common market and the EEA Agreement

(Case COMP/M.1806 — AstraZeneca/Novartis)

Council Regulation (EEC) No 4064/89

(notified under document number C(2000) 2309)

(Only the English text is authentic)

(Text with EEA relevance)

(2004/310/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to the Agreement on the European Economic Area, and in particular Article 57 thereof,

Having regard to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings [1], as amended by Regulation (EC) No 1310/97 [2], and in particular Article 8(2) thereof,

Having regard to the Commission decision of 21 March 2000 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations [3],

Whereas:

(1) On 18 February 2000, the Commission received notification of a proposed concentration by which the undertakings Novartis AG (Novartis) and AstraZeneca plc (AstraZeneca) would spin off and merge their activities in the area of crop protection into a newly incorporated company, Syngenta AG (Syngenta). Novartis would also transfer its seeds business to Syngenta.

(2) After examination of the notification, the Commission concluded that the notified operation falls within the scope of the Merger Regulation and raises serious doubts as to its compatibility with the common market. Therefore, on 21 March 2000, the Commission decided to initiate proceedings pursuant to Article 6(1)(c) of the Merger Regulation.

THE PARTIES

(3) Novartis was created by the merger between Ciba-Geigy and Sandoz in December 1996 [4]. Novartis is a multinational group of companies operating worldwide

[1] OJ L 395, 30.12.1989, p. 1; corrected version OJ L 257, 21.9.1990, p. 13.
[2] OJ L 180, 9.7.1997, p. 1.
[3] OJ C 92, 16.4.2004.
[4] Commission Decision 97/469/EC (Case IV/M.737, Ciba-Geigy/Sandoz) (OJ L 201, 29.7.1997, p. 1).

in the field of life sciences. Its focus is on health care (pharmaceuticals, generics), agribusiness (crop protection, seeds, animal health) and consumer health (nutrition, self-medication).

(4) AstraZeneca was created by the merger between Astra AB and Zeneca Group plc in spring 1999 ([5]). The business activities of AstraZeneca are the research, development, production and marketing of pharmaceuticals and agrochemicals.

CONCENTRATION

(5) Novartis will undertake an internal reorganisation so that its non-American agrochemicals business as well as its non-American seeds business are held by a newly created company, Novartis Agribusiness AG, and its American agrochemicals business as well as its US seeds business are held by a US corporation, Novartis US Co. Novartis' animal health business will not be included in the transaction. Novartis will then demerge Novartis Agribusiness AG in favour of its shareholders, by way of a rights offering and Novartis US Co. will be demerged by a distribution of its shares to Novartis shareholders (or to a trustee acting for all Novartis shareholders). Novartis Agribusiness AG will merge into Syngenta under a Swiss statutory merger process and Novartis US Co. will merge into Syngenta by a United States triangular merger. Therefore, Novartis' shareholders will, on completion of the transaction, hold shares in Syngenta as well as in Novartis.

(6) AstraZeneca will undertake an internal reorganisation in order to divide its agrochemicals business from its retained business so that its agrochemicals business can be transferred to Syngenta. AstraZeneca will declare a dividend to its shareholders which will be satisfied by the transfer of shares in Syngenta. Therefore, AstraZeneca's shareholders will, on completion of the transaction, hold shares in Syngenta as well as in AstraZeneca.

(7) Therefore, the notified operation constitutes a concentration within the meaning of Article 3(1)(a) of the Merger Regulation.

([5]) Commission decision of 26 February 1999, in Case IV/M.1403 — Astra/Zeneca.

COMMUNITY DIMENSION

(8) The combined aggregate worldwide turnover in 1998 of the concerned businesses exceeds EUR 5 000 million (Novartis, […] (*), AstraZeneca […]*. The EC-wide turnover of the relevant businesses of both Novartis and AstraZeneca exceeds EUR 250 million (Novartis, […]*, AstraZeneca […]*. Neither Novartis nor AstraZeneca achieves more than twothirds of its aggregate EC-wide turnover within one and the same Member State. Therefore, the concentration falls within the scope of the Merger Regulation.

(9) The operation qualifies for cooperation with the EFTA Surveillance Authority pursuant to Article 2(1)(c) of Protocol 24 of the EEA Agreement as the concentration is liable to create or strengthen a dominant position as a result of which competition would be significantly impeded in the territories of the EFTA States or a substantial part thereof.

COMPETITIVE ASSESSMENT

(10) The merger concerns the economic sectors of crop protection chemicals (crop protection) and seeds. Novartis will transfer its activities in the areas of crop protection and seeds to Syngenta, while AstraZeneca will only transfer its activities in the area of crop protection.

(11) Crop protection products protect crops against all forms of damage which might be caused by weeds, insects or fungi. Crop protection products are normally subdivided according to what they are designed to control. The parties suggest that the main product groups are the following:

— fungicides (for disease control),

— herbicides (for weed control),

— non-selective herbicides (for weed control),

— insecticides (for insect control),

— nutrients (trace elements) to overcome deficiency symptoms, e.g. iron deficiency,

(*) Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk.

— seed treatment for the protection of seeds and subsequent plants against disease and insects,

— plant growth regulators,

— industrial weed control products,

— non-agricultural insecticides,

— active substances.

In addition to crop protection products, Syngenta will also be active on the seeds markets.

(12) The concentration does not raise competition concerns in the markets for nutrients, industrial weed control products, non-agricultural insecticides and active substances. In the decision under Article 6(1)(c), the Commission had also expressed serious doubts concerning the rodenticides markets. These doubts were based on the fact that although Novartis' business is not transferred to Syngenta, Novartis managers will be represented on the Syngenta corporate governance structures. Furthermore, according to a competitor, the combined market share of the two entities would be considerable. However, the total sales of Novartis for rodenticides is small (EUR […]*) and […]*. Therefore, the serious doubts that the merger might lead to the creation of a duopolistically dominant position on some of the rodenticides markets, expressed in the Article 6(1)(c) decision, are unfounded.

(13) For the reasons indicated below, the concentration would have given rise to the creation or strengthening of a dominant position in the following markets:

fungicide markets:

— cereal fungicides in France, Germany, the United Kingdom, Denmark, Sweden and Finland,

— sugar beet fungicides in France, Italy, Spain and Belgium,

— potato fungicides in Sweden,

— fungicides to treat powdery mildew in grapes in Austria and fungicides to treat botrytis in grapes in Austria and France;

herbicide markets:

— maize herbicides in France, Germany, the Netherlands and Belgium,

— potato herbicides in Belgium and France,

— post-emergence graminicides in potatoes in Denmark,

— post-emergence graminicides in sugar beets in the United Kingdom, Belgium and Denmark,

— post-emergence graminicides in oilseed crops in Germany, the United Kingdom and Denmark,

— herbicides for fruits and nuts in France;

foliar insecticide markets:

— cereals in Belgium, Denmark, France and Germany,

— forage crops in France,

— potatoes in France,

— vegetables in France;

seed treatment markets:

— cereals in Spain;

plant growth regulators:

— ornamentals in Belgium, the Netherlands and France.

SEEDS

(14) Novartis' seeds business is transferred to Syngenta. AstraZeneca operates its seeds business via a joint venture with Cosun. This joint venture is named Advanta. This business will not be transferred to Syngenta and the shareholding thus remains with AstraZeneca. However, there are some continuing relations between the AstraZeneca business that will be transferred to Syngenta and the Advanta joint venture. [AstraZeneca business secret — contractual relations]*.

(15) [AstraZeneca business secret — contractual relations]* This obligation is not applicable to the seeds business of Novartis that will be transferred to Syngenta. [AstraZeneca business secret — contractual relations]*.

(16) [AstraZeneca business secret — contractual relations]*.

(17) The existing contractual relationship between the Zeneca Group and Advanta creates a link between Syngenta and Avanta, two seed companies producing sugar beet seeds. […]* There are only two other important competitors for sugar beet seeds, KWS and Danisco.

(18) AstraZeneca will ensure that [AstraZeneca business secret — contractual relations]* This means that [AstraZeneca business secret — contractual relations]*.

(19) The Commission considers that in view of the above [AstraZeneca business secret — contractual relations]* the consequences of the merger on the seeds markets does not need to be further investigated as [AstraZeneca business secret — contractual relations]* eliminates the advantage that Syngenta would have received from [AstraZeneca business secret — contractual relations]*.

A. **RELEVANT PRODUCT MARKETS**

FUNGICIDES

FUNGICIDES AND THEIR USE

(20) Fungicides are agents used to control plant diseases caused in particular by fungi. The diseases attacking a crop, such as a wheat crop, will vary according to the variety planted in that year, the weather conditions and the husbandry of the crop. The crop variety will determine the susceptibility of the crop to attack by a range of diseases such as powdery mildew, rust, *Septoria* or eyespot. The weather conditions will influence the type and the intensity of the attack, for example, a wet season will encourage diseases such as *Septoria* and a dryer season brown rust. Husbandry of a crop can diminish the risk that certain diseases will develop. For instance, proper crop rotation or ploughing of the field reduces the risks of certain diseases.

(21) As a consequence of these complexities it is usual for a farmer to use a programme of sprays which will be adjusted in its intensity and in the types of active ingredient used depending on local weather conditions and disease susceptibility of the crop. This choice may be influenced by distributors, technical experts and Member State officials who have a detailed knowledge of diseases and their epidemiology and of the best fungicides to control these diseases depending on predicted outbreaks (protective control) or the presence of disease in the crop (curative control).

(22) If there is a range of diseases present and this range is not controlled by a single active ingredient, a farmer will either tank-mix a number of single active products, or use a pre-formulated product containing a mixture of a number of active substances. Such a pre-formulated mixture is, in general, some 5 to 15 % cheaper than a tank-mixture of the active substances. As the disease spectrum alters throughout the season in response to changing weather conditions, the products will be altered to suit the prevailing disease conditions.

(23) The farmer, based on advice from local experts and recommendations from bodies such as the Fungicide Resistance Action Committee (FRAC), will also be trying to prevent the onset of resistance to particular active ingredients by alternating between and/or combining active substances of different chemical classes throughout the season if the same disease is present for a long period and multiple applications are required. In some cases, resistance to some active classes will already be present in the local disease population and the farmer will need to use active substances which are still effective against that particular disease population.

(24) The farmer, when deciding how much to spend on fungicides, will compare the total cost of his fungicide programme with the expected yield increase and the resulting increase in revenue, which depends on the price he will receive for his crop. In view of the inherent uncertainty as to disease pressure, the expected yield increase and the price for the crop, the additional benefit to be expected of a (more expensive) fungicide programme has to be considerably higher than the fungicide price (premium).

OVERVIEW OF MARKET DEFINITIONS

(25) The parties refer to previous decisions ([6]) where the Commission has considered that a breakdown of fungicides by type of plant is appropriate, since the various plants display differing (albeit partly overlapping) disease patterns. On this basis, the parties have identified separate affected product markets for fungicides for each of cereals, sugar beets, oil seed crops, forage crops, potatoes, tobacco, fruit and nuts, vegetables and ornamentals. The market investigation has generally confirmed that an assessment of the fungicide sector by crop is an appropriate starting point.

(26) However, it also results from the market investigation that the markets as proposed above could be divided by a further split of the crop (for instance, cereals split into wheat, barley, oats, rye and triticale ([7])) and/or by reference to a particular disease (for instance, the main diseases for wheat are powdery mildew, rusts, eyespot and septoria; the main diseases for barley are powdery mildew, rusts, eyespot, Rhynchosporum and Pyrenopora).

(27) It appears that the only crop where such a further 'split' of the crops, as defined by the parties, is appropriate relates to 'fruits and nuts' where, for the reasons indicated in recitals 44 to 46, fungicides for each of the major grape diseases should be considered as separate product markets.

(28) The parties claim that there is an overall cereal fungicide market. Third parties have claimed and provided information indicating that the market could be narrower, namely a market for strobilurin-based cereal fungicides. On such a market, the parties would achieve a dominant position on several national strobilurin-based cereal fungicide markets. However, since the Commission has come to the conclusion that on the overall cereal fungicide markets the parties would be dominant, the Commission has adopted, for the purposes of this Decision, the overall cereal fungicide markets as relevant product market.

(29) Finally, although it is technically speaking feasible to switch production between one fungicide and another, there is hardly any supply-side substitutability between these products. This is due to the existence of patents and the official registration process for crop protection products (to be discussed in more detail in recitals 84 to 88). This remark also holds for the other crop protection products discussed in this Decision.

STROBILURIN-BASED CEREAL FUNGICIDES

(30) In this section dealing with formulated products, 'strobilurins' refer to formulated products containing an active substance of the strobilurin chemical class. The formulated product is either a 'straight' strobilurin, i.e. it contains only one active substance, namely one of the strobilurin class (e.g. AstraZeneca's Amistar product, whose only active substance is azoxystrobin) or a mixed product, i.e. containing an active substance of the strobilurin class and one or more active substances from other classes (e.g. BASF Juwel Top product, containing a mixture of kresoxim methyl (strobilurin) and epoxiconazole (of the 'triazole' chemical class ([8])) and fenpropimorph (of the 'morpholin' chemical class ([9])). It can be noted that in the industry's perception and in the parties' internal market strategy all these formulated products are referred to as 'strobilurins'.

(31) Strobilurin active substances are the most recent class of fungicide active substances. They are broad spectrum (active against several diseases) foliar fungicides (fungicides sprayed on leaves) and can be used on a wide range of crops worldwide, particularly wheat, barley, rice, grapevines, banana, top fruit, turf and a range of vegetables. Strobilurin active substances are active at low use rates and control fungi by disrupting the energy production. Although strobilurin active substances can be systemic ([10]) and/or

([6]) Decision of 9.8.1999 in Case IV/M.1378 — Hoechst/Rhône-Poulenc (OJ C 254, 7.9.1999, p. 5); decision of 17.7.1996 in Case IV/M.737 — Ciba-Geigy/Sandoz (OJ L 201, 29.7.1997, p. 1).

([7]) A cross between two plants with different numbers of genes, giving a high yield and with a rich protein content.

([8]) Triazoles are broad spectrum fungicides with utility as foliar sprays or seed dressings on a wide range of crops worldwide, particularly wheat, barley, grapevines, banana, top fruit, turf and a range of vegetables. Triazoles are systemic within the plant and generally curative. They are active at low use rates and control fungi by inhibiting the synthesis of ergosterol (a key component of cell membranes) via inhibition of the 14-demethalyse enzyme. This enzyme is different from the enzymes inhibited by morpholines.

([9]) Morpholines (including piperidines) are relatively narrow spectrum fungicides used primarily as foliar fungicides on wheat and barley in Europe. They are active at moderate use rates and control fungi by inhibiting the synthesis of ergosterol. Morpholines are systemic within the plant and curative. They are also vapour active.

([10]) Systemic means movement of a chemical within the plant so that protection is given to (new) plant parts that were not directly sprayed.

vapour active ([11]), they have limited curative activity. So far, strobilurins based products have been introduced within Europe in the cereal (mainly wheat and barley) crops and for grapes.

(32) In addition to their broad spectrum disease control activity, strobilurin-based fungicides (i.e. the formulated products) are reported to be the only products that have, when used on cereals, important yield increasing activities even in the absence of disease. The products based only on the other fungicide classes, mainly (tri)azoles and morpholines, do not have this yield enhancing activity. It has thus been argued that these other classes do not easily replace strobilurins. In other terms, according to third parties, although strobilurins were (and continue to be) able to replace triazoles and morpholines in the main cereal markets, the converse is unlikely to happen. For this reason, third parties have argued that there is a separate product market for strobilurin-based fungicides in cereals.

(33) With regard to cereals, there is ample data on the increased yield resulting from strobilurin usage and, together with the broad disease spectrum, these benefits figure widely in the promotion literature for strobilurin products. Farmers recognise these benefits as they are prepared to pay a considerable price premium of between 50 and 150 % for strobilurin products compared to non-strobilurin products.

(34) According to a Novartis document of March 2000 ([12]), strobilurins have, as a rule of thumb, resulted, on average over the last three years, in an increased yield of 1 t/ha compared to triazoles in the United Kingdom. 'Even when grain filling was shortened in 1999, strobilurins still added an extra 0,7 t/ha over triazoles. With wheat prices predicted to be around GBP 65/t in the autumn, then 0,7 t is worth GBP 45. With fungicide programmes based on strobilurin fungicides costing around GBP 20/ha more than a triazole based programme, this results in a healthy return on investment.' For barley, the other main cereal, the profit coming from strobilurins is smaller: an extra GBP 32/ha income for GBP 22/ha extra fungicide spend for winter barley and an additional spend of GBP 20/ha for spring barley. These United Kingdom data seem to be valid also for France ([13]) and Germany ([14]). These are the three main cereal fungicide countries accounting for almost 90 % of total EEA consumption and considerably over 90 % of strobilurin consumption.

(35) There are strong indications that, on the basis of the above data, a hypothetical monopolist of strobilurin-based cereal fungicides could profitably raise prices by 5 to 10 % in a non-transitory way for these products. A 5 % price increase of a strobilurin programme would add some GBP 2,5/ha to the cost price. The margin for the farmer would remain some GBP 22,5/ha for wheat and GBP 7,5/ha and GBP 9,5/ha for winter and spring barley respectively. With a 10 % price increase, the margin for the farmer would remain GBP 5/ha for winter barley. The 5 to 10 % price increase would thus still allow a higher margin for the farmer compared to the use of a non-strobilurin fungicide programme and could thus, for the hypothetical monopolist of strobilurins, be a profitable course of action.

(36) In addition, a competitor has calculated, on the basis of the parties' information on yield increases, that in a typical three spray programme (see recitals 111 to 113), the farmer would receive the same net margin from the use of a strobilurin programme compared to a pure non-strobilurin programme even if a monopolist-producer would have increased the prices of strobilurins with 77 %.

Observations from the parties

(37) In their reply to the statement of objections (hereinafter the reply), the parties indicate that strobilurins cannot constitute a separate market as they need to be mixed with other products to give satisfactory disease control in all situations and against all pathogens. Whilst being factually correct, this argument related to the end-use of strobilurins is not relevant for product market definition as it does not address the question whether a hypothetical monopolist can profitably increase its price.

(38) The parties indicate in the reply that substitution from strobilurins to triazoles and/or morpholines has taken place in Germany in the 1999 season where the total acreage treated with strobilurins has decreased compared to 1998 (see also 'the German

([11]) Vapour active means the ability of a chemical to control disease by means of its volatile component only. The chemical does not fix itself on the plant, nor does it enter.

([12]) 'A compilation of strobilurin related questions and answers', a document distributed in the United Kingdom.

([13]) See data in 'Perspectives agricoles, février 2000, pp. 61 to 65' on gross and net profits resulting from strobilurin treatment compared to non-strobilurin treatments.

([14]) See data in 'Welche Fungizidstrategien im Weizen 2000?', published in Top Agrar 1/2000, pp. 52 to 57.

strobilurin-based cereal fungicide market'-section, part of the assessment). As indicated further below, this is an exceptional feature due to the development of resistance to BASF's strobilurin product whilst AstraZeneca, the producer of the only other strobilurin in 1999, still faced capacity constraints. Furthermore, it appears from the documents submitted by the parties, that strobilurin-based fungicides are still expected to increase their share of the total cereal fungicide products, to the detriment of the other chemical classes.

(39) In the reply, the parties dispute that strobilurins are able to significantly increase yield in the absence of diseases and point out that the yield increase is the result of a better disease control. However, the parties' promotional literature refers to the so-called 'greening effect' resulting from strobilurin usage. This greening effect, totally unrelated to disease control, will give the cereal a longer period to increase the weight of the grain and thus the total yield. Although it is argued that this greening effect as such does not justify alone the use of strobilurin-based fungicides (as the additional yield that can be attributed to the greening effect alone does not offset the strobilurin price), it is an important and unique element of these fungicides compared to the other chemical classes.

(40) Finally, the parties dispute that a hypothetical monopolist would be in a position to raise prices by 10 % in a non-transitory manner. The parties argue that if strobilurins cost, as indicated above, between 50 to 150 % more than non-strobilurin treatments, the overall cereal market should have increased by 7 to 15 % p.a. in view of the strobilurin penetration rate. However, the overall market value has declined. The Commission does not consider that on the basis of relative price differences and penetration rates, a mathematical conclusion as to the overall market size can be correctly made in the absence of information on other variables such as a diminution of the cereal acreage, changing weather and other conditions leading to a decreased need for fungicide treatment, decrease in price of the non-strobilurin formulations and so on.

(41) Furthermore, the parties argue that the example for barley described above (on the basis of Novartis' promotional literature) is weaker than the case for wheat. This is acknowledged by the Commission. The parties state in the reply that the benefit to the farmer would become marginal, but that the same risks as for wheat would still remain, and that such an increase would lead to the producer sacrificing his barley market share. However, this is not substantiated. The remaining margin would still be one based on the rather exceptional 1999 circumstances. Therefore, the risk that the farmer takes, gives him a minimal margin of GBD 5/ha (10 % price increase). In better weather circumstances, this would be more. Therefore, a price increase of between 5 to 10 % could be a profitable course of action for a hypothetical monopolist as, in view of the minimum margin that the spring barley farmer would have, the spring barley farmer would not switch away from strobilurins to such an extent that the price increase would be unprofitable.

(42) Finally, the parties indicate that, with respect to the example supplied by a competitor that the farmer would achieve the same net margin if the strobilurin prices were increased with 77 %, no farmer would make an investment equivalent to the income forecast without taking account of the risks involved. This is acknowledged by the Commission. However, the example shows that, if the total additional margin is only flattened-out when the price of strobilurin fungicides is increased with 77 %, a 5 to 10 % price increase is profitable.

Conclusion

(43) The parties claim that there is an overall cereal fungicide market. Third parties have claimed and provided information indicating that the market could be narrower, namely a market for strobilurin-based cereal fungicides. There are, for the reasons indicated above, strong indications that there is a separate market for strobilurin-based fungicides. If these were to exist, the parties would achieve a dominant position on several such national markets. However, since the Commission has come to the conclusion that on the overall cereal fungicide markets, the parties would be dominant, the Commission has adopted, for the purposes of this Decision, the overall cereal fungicide market as relevant product market.

FUNGICIDES FOR POWDERY MILDEW, DOWNY MILDEW AND BOTRYTIS IN GRAPES

(44) The parties consider that grape fungicides are part of the 'fruits and nuts' market as all these perennial crops (grapes, pome and stone fruits, citrus, olives and nuts and berries) have the following common elements: long-term horizons (high cost to plant, time lag before first harvest, barriers to exit leading to the crops being considered as an asset); high value crop (the liability cost for crop protection producers where their product

has some unexpected negative consequences can being quite high); most farmers sell their production themselves and have direct contacts with end customers and/or food distribution channels; subsidies level being quite low; and many agrochemical products being used are the same.

(45) The Commission considers that grape fungicides have to be assessed separately as the formulated products used as well as the active substances included differ to a very large extent between grapes and the other crops. For instance, of the six AstraZeneca active substances used in grapes, only one is also used for pome and stone fruit and one other for olives. Of the six Novartis active substances, one is used in both pome and stone fruits, another in stone fruit and one other for citrus. On the other hand, there are also active substances used on the other crops that are not used on grapes. Therefore, the competitive conditions differ substantially between grapes and the other perennial crops.

(46) Grapes are threatened by a large number of diseases. The three most important diseases are downy mildew, powdery mildew and grey mould or botryits. The parties have stated that fungicides used to treat each of the diseases are different and specific, with the exception of three active substances (dichlofluanid, thiphanate methyl and azoxystrobin) that have an effect on at least two diseases. However, products containing these active substances as well as all pre-formulated mixtures that are registered for more than one disease account only for about 5 % of all grape fungicides. The parties' statements have been confirmed by the market investigation. It can, therefore, be concluded that fungicides for each disease threatening grapes, and in particular for downy mildew, powdery mildew and botrytis, constitute different product markets.

CONCLUSION ON PRODUCT MARKETS FOR FUNGICIDES

(47) The relevant product market definitions proposed by the parties, namely a different market by type of plant, is appropriate. This is the case for the following markets further dealt with in the assessment: sugar beet fungicides, vegetable fungicides, and potato fungicides. The Commission considers that there are strong indications that there is a separate market for strobilurin-based cereal fungicides. However, if this were not the case, and if the market were, as the parties have argued, a market for all cereal fungicides, then the concentration is equally likely to create a dominant position on this market. Lastly, there are separate markets for fungicides treating each disease affecting grapes: powdery mildew, downy mildew and botrytis.

HERBICIDES

(48) Herbicides are agents that control weeds. Usually a first distinction is made between selective herbicides and non-selective herbicides. The latter, non-selective herbicides, are effective against many types of plant, including cultivated crops, which they kill if applied to them. Non-selective herbicides are generally applied to fields in order to clear them of weeds after the harvest of one crop and prior to the sowing of the next. Only AstraZeneca, not Novartis, manufactures non-selective herbicides. Therefore, with one exception to be discussed below (herbicides for vineyards and orchards), there are no overlaps in this area.

(49) Selective herbicides, on the other hand, are designed to kill only the weeds, and to leave intact the crop to which they are applied. Clearly, from the viewpoint of the farmer, the type of crop on which a selective herbicide is used, is the most important factor in determining product substitutability.

(50) Farmers also consider the particular weed types against which the crop needs protection at any given time. With a few exceptions, the active substances contained in the herbicide product formulations are mainly effective against weeds within one of the two principal categories of weeds: broadleaf weeds and grass (gramineous) weeds ([15]).

(51) As specific types of plant are mostly affected by mixed 'weed populations' comprising both grasses and broadleaf weeds, there is a need for treatments that kill both types of weeds. Two options are then available to the farmer. Either he purchases a number of herbicides with specific selectivities and mixes these in accordance with the types of weeds that appear, or he buys a ready-made product that contains the desired mixture of active substances for grass control and broadleaf weed control. In the remainder of this Decision, a herbicide product that is mainly active against grass weeds will be called a grass weed herbicide or graminicide. A product

([15]) Broadleaf weeds, as the name suggests, are weeds with leafs; grass weeds are grasses. Within these weed types it is possible to make an additional distinction between annual weeds and perennial weeds. Annual weeds are those weeds that complete their life cycle (from seed germination to seed production) in one season. Perennial weeds stay alive for more than one season.

that is mainly active against broadleaf weeds will be referred to as a broadleaf herbicide. A product that is active against both types of weeds (without being mainly active against grass weeds or against broadleaf weeds) will be referred to as a broad spectrum herbicide ([16]) genannt.

(52) Another important selection criterion for the farmers is the time of application of the product, relative to the emergence of the crop: it is common to distinguish between pre-sowing, pre-emergence and post-emergence herbicides. Pre-sowing herbicides are applied to the soil immediately before the seed is sown. In pre-emergence treatment, the herbicides are applied immediately before germination of the seed, i.e. about eight days after sowing. Post-emergence herbicides are applied to the soil or the plants after germination of the crop.

(53) In addition, herbicidal products differ to the extent that they are based on different classes of chemical active substances. This is particularly important in the domain of resistance management. Weeds that are treated frequently with the same types of herbicide tend to develop resistance against these herbicides over time, by a process of self-selection. It is therefore important to counter this tendency of resistance by carefully choosing the (combinations of) herbicides to use during the season and from one season to another. For this reason, herbicides are marketed by the manufacturer and the distributor on the basis of both the protective and the resistance characteristics of the chemicals contained. In addition, the procedures for treatment, including the number of applications and the feasibility of mixing with other products to achieve a broader range of protection, are of importance.

(54) The Commission has concluded in previous decisions that non-selective herbicides and selective herbicides are not in competition with each other, with the exception of a few cases (to be discussed below). Furthermore, selective herbicides which protect distinct types of crop form part of distinct relevant product markets (see IV/M.1378 Hoechst/Rhône Poulenc (Aventis), recitals 29 et seq., IV/M.737 Ciba Geigy/Sandoz (Novartis), recitals 109 et seq.; IV/M.392 Hoechst/Schering ([17]), recitals 16 et seq., and IV/M.354 American Cyanamid/Shell ([18]), recitals 11 et seq.).

([16]) A herbicide can be broad spectrum either because the active substance contained in it has itself broad spectrum activity, or because the product contains both active substances against grasses and active substances against broadleaf weeds.

([17]) Decision of 22.12.1993 (OJ C 9, 13.1.1994).

([18]) Decision of 1.10.1993 (OJ C 273, 9.10.1993).

(55) The Commission has in those decisions discussed whether further subdivisions should be made for the purpose of product market definition (for example, on the basis of the spectrum of control or the timing of the application). In Case IV/M.737 Ciba Geigy/Sandoz (Novartis), the Commission did not make such further subdivisions. First, it considered that, in view of the fluid dividing lines between graminicides, broad spectrum herbicides and broadleaf herbicides, it was impossible to draw up a hard-and-fast product market classification. Furthermore, it considered that a breakdown based on the time of application should also be disregarded since, before sowing at least, pre-sowing, pre-emergence and post-emergence herbicides are substitutable as far as the farmer is concerned.

(56) For maize herbicides, the approach adopted in IV/M.737 Ciba Geigy/Sandoz (Novartis), i.e. to define the relevant product markets by type of crop, appears to be appropriate in the current merger case as well. However, in order to allow for a proper understanding of the competitive relationships between the different types of selective herbicides, the following qualifying remarks on this product market definition are in order.

(57) First, it should be realised that a broadleaf weed herbicide is no substitute for a graminicide, or vice versa. When a farmer is faced with harmful grass weeds in his crop fields, he needs to use herbicides which are capable of controlling these weeds, i.e. he needs either graminicides or broad spectrum herbicides; broadleaf weed herbicides are not active (or, at least, not active enough) against grass weeds. For that reason, from a demand perspective, graminicides and broad spectrum herbicides may be substitutable, but graminicides and broadleaf herbicides are not ([19]). The same arguments apply, *mutatis mutandis*, for the control of broadleaf weeds. In fact, to the extent that grass weeds and broadleaf weeds occur together (which is usually the case), graminicides and broadleaf weed herbicides are complementary products. As a consequence, the two types of product are not in competition with each other.

(58) It is only through the presence of broad spectrum herbicides, allowing for both grass weed control and broadleaf weed control, that the two complementary market segments are linked. To see this, it is useful to

([19]) As was confirmed by a competitor, adequate efficacy on only one or two commercially important annual grasses is not sufficient to create a commercial product. Furthermore, grass weed herbicides and broadleaf weed herbicides are not substitutable from a supply side perspective either. This is due to the existence of patents and the official registration process for crop protection products (to be discussed in detail in the section on the geographic market definition).

recall the purpose of using product market definitions. The objective of defining a market (in both its product and geographic dimension) is to identify those actual competitors of the undertakings involved that are capable of constraining their behaviour and of preventing them from behaving independently of an effective competitive pressure ([20]).

(59) One way to think of a relevant product market is that it is the smallest set of products for which a company, should it be the only firm to offer these products, would find it profitable to impose a small but significant (5 to 10 %) and permanent price increase. If this hypothetical company were not to find it profitable to do this, then the conclusion should be that there is somehow enough competitive pressure from other products and that the relevant product market is therefore wider than presumed.

(60) In this case, a natural question to ask would be whether a hypothetical sole supplier of all herbicides capable of controlling grasses (i.e. graminicides and, to a lesser extent, broad spectrum herbicides) would find it profitable to increase prices for these products in the way described above. This is not necessarily the case. After all, given that broad spectrum herbicides are competing with broadleaf weed herbicides, an increase in the price of the first would not only lead to a drop in sales stemming from farmers no longer using the broadspectrum product for grass control, but also stemming from farmers that used to buy the product for broadleaf weed control switching to 'pure' broadleaf herbicides. To the extent that many buyers of broadspectrum herbicides buy the product to control both types of weeds and the value of broadspectrum products is substantial in comparison with grass weed herbicides, broadleaf weed herbicides do exercise a competitive pressure on the prices of broad spectrum herbicides and, hence, on the prices of graminicides. This is the chain of substitution effect ([21]).

(61) The market investigation in the present case has indicated that broad spectrum herbicides for maize effectively derive substantial part of their sales values both from their capacity to control grass weeds and from their capacity to control broadleaf weeds. A product market definition based on the type of crop (maize) is therefore warranted, but as far as the assessment of the impact of the present merger is concerned, it should be kept in mind that the competitive relationships between the products in question are different from those prevailing in circumstances where all products are truly substitutable.

(62) Second, as for the possible distinction between pre-sowing, pre-emergence and post-emergence herbicides, the following qualifying remarks can be made. As the three types of herbicides are all used to treat the same types of weeds and display the same degree of effectiveness, the farmer has, before sowing at least, a certain degree of flexibility in choosing the time of application. A product market definition that comprises all three types of herbicides is for this reason warranted. Furthermore, as time goes by and weed problems occur in the crop fields, pre-sowing herbicides or even pre-emergence herbicides are no longer substitutes for post-emergence herbicides. Furthermore, it is also worth noting that the 'wait and see what emerges' approach underlying the use of post-emergence herbicides in weed control may not always be the best strategy with regard to resistance management.

(63) The degree of substitution between pre-emergence applications and post-emergence applications of maize herbicides is not always very strong ([22]). In general, according to the information provided to the Commission, both the weed pressure and the weed diversity in maize are increasing, necessitating more complex weed control strategies requiring the use of both pre- and post-emergence products. In the southern regions, when pre-emergence treatment is not sufficient, post-emergence treatments are necessary as well. In the northern regions, even when early post-emergence treatments are a possibility, the use of pre-emergence treatments is advised to weaken the weeds and make them more vulnerable to post-emergence treatments (especially in areas suffering from grasses). Also in the decision on the timing of the application, therefore, it appears that the relationship between the two main available products, pre-emergence and post-emergence herbicides, is not always just one of substitutability, but also one of complementarity. Nonetheless, the degree of substitutability appears to be sufficient to warrant a broad market definition.

(64) Also for cereal herbicides, broad spectrum products appear to derive substantial part of their sales values

([20]) See also: Commission Notice on the definition of the relevant market for the purposes of Community competition law, para 2 (OJ C 372, 9.12.1997, p. 5).

([21]) Commission Notice on the definition of the relevant market for the purposes of Community competition law, point 57.

([22]) There is little pre-sowing herbicide use in maize other than the use of non-selective herbicides such as glyphosate (e.g. Roundup, Monsanto) or paraquat (Gramoxone, Zeneca) that are used to prepare fields for planting.

both from their capacity to control grass weeds and from their capacity to control broadleaf weeds. Equally, there appear to be sufficient substitution possibilities between pre-sowing, pre-emergence and post-emergence applications. A product market definition based on the type of crop (cereals) is therefore warranted. None the less, as far as the assessment of the impact of the present merger is concerned, it should again be kept in mind that the competitive relationships between the products in question are different from those prevailing in circumstances where all products are truly substitutable. Similarly, rice herbicides constitute a relevant product market.

(65) In the markets for herbicides for potatoes, vegetables, sugar beets, oil seeds and soy beans, the market investigation has shown that a refinement of the market definition is appropriate, as market participants do not consider that for post-emergence control of grasses broad spectrum herbicides are good substitutes for graminicides ([23]). The parties have indicated that, generally speaking, the five mentioned crops are treated first in pre-emergence to control all types of weeds ([24]). The pre-emergence treatment provides weed control until the time of crop emergence when the crop canopy closes over the inter-rows (particularly the case for potatoes and sugar beet). Later sprays are, however, often required, notably if there is a failure of the pre-emergence treatment (dry soil conditions, heavy weed pressure, wrong dose rates or choice of herbicide) to control a grass weed problem. In this latter case, a post-emergence graminicide treatment has to be applied, because broad spectrum herbicides do not provide enough control. That the graminicide products have specific properties which distinguish them from broad spectrum herbicides follows from the fact that, according to the parties, they are the only herbicides which can control the grass weeds *Agrostis stolonifera, Arrhenatherum elatius, Bromus sterilis* and *Phalaris spp*. These facts show that the competitive pressure on the products within the group of post-emergence graminicides come from other products in the group. The conclusion is that within the herbicides markets for potatoes, vegetables, sugar beets, oil seeds and soybeans, separate markets exist for post-emergence graminicides.

([23]) However, farmers, before sowing at least, do consider the post-emergence herbicides to be substitutes for the pre-emergence herbicides. The prices of the latter are therefore constrained by the prices of the former. Furthermore, in pre-emergence, there are broadspectrum products that constitute a substantial link between the broadleaf segment and the grass segment. The consequences of the concentration for herbicides other than post-emergence graminicides are therefore assessed on the basis of herbicides by type of crop.

([24]) There is, however, some variation both between the four crops and between countries.

(66) Only AstraZeneca, not Novartis, manufactures non-selective herbicides. Therefore, where selective and non-selective herbicides cannot both be used on crops, there are no overlaps in this area. The parties claim that there is one domain in which selective herbicides and non-selective herbicides are competing with each other and that is in herbicides for use in vineyards and orchards ([25]). The parties have argued that non-selective herbicides have to be included in this market as they can be used between the rows of vines without killing them. Whereas this view has been generally confirmed, it has been remarked that just around the vines, selective herbicides have to be used. A competitor has pointed at the fact that, rather than selective and non-selective herbicides being substitutable, they are in fact complementary as they are always used in combination. According to this competitor, the non-selective herbicide (e.g. paraquat, glyphosate, sulphosate) serves to kill all weeds existing at the time of application and the selective herbicide (e.g. a residual herbicide, such as atrazine), serves to kill weeds germinating after application. The Commission has addressed these opposing views and has concluded that, for the purpose of the present case, herbicides for use in vineyards and orchards (or 'herbicides for fruits and nuts', the term used by the parties) constitute a relevant product market.

(67) A final word ought be devoted to the developments taking place in the domain of genetic modification of crops. The most remarkable technological innovation in the crop protection business in recent years has been the development of herbicide-tolerant crops. These are crops, e.g. in maize, that have been genetically modified to be resistant to non-selective herbicides (previously so considered). This means that non-selective herbicides, which are by themselves very powerful herbicides, can be safely applied to them. In principle, therefore, they could be a clear challenge to conventional selective herbicides. However, because of continuing opposition to these innovations in many European societies, the parties do not believe that these types of crops can be introduced before 2005. For the time frame relevant to

([25]) In the context of herbicides for vineyards and orchards, the parties have defined herbicides which have residual or residual + foliar activity as 'selective' and those with only foliar activity as 'non-selective'. A herbicide has residual activity if it remains active for, normally, a period of one month or longer. A herbicide that acts via the foliage usually only has activity for two to three days. Novartis actually sells in France some foliar herbicides for use in fruits and nuts; however, these are not sold as non-selective herbicides in the traditional sense.

the assessment of the current merger case, the advent of genetically modified crops has no bearing on the prevailing product market definitions for herbicides.

Conclusion on product market definitions for herbicides

(68) In view of the role of broad spectrum products in maize herbicides and the sufficient degree of substitutability between pre and post-emergence applications, it is appropriate, for the purpose of the present case, to consider the market for (selective) maize herbicides as a relevant product market. The same holds for the markets for cereal and rice herbicides. However, in addition to separate relevant markets for herbicides in potatoes, vegetables, sugar beets, soy bean and oil seeds, there also exist separate relevant markets for post-emergence graminicides in these crops.

INSECTICIDES

(69) Insecticides are products used to control insects that damage cultivated plants. The Commission has found in previous decisions (see IV/M.737 Ciba Geigy/Sandoz (Novartis), recitals 116 et seq.) that a breakdown of insecticides by type of plant rather than by insects is appropriate in general. The main reason is that there is only one plant-specific insect that affects a major crop, namely the cornborer affecting maize. For all other main crops a variety of insects infests the plant. Therefore, most insecticides combat a range of insects.

(70) However, in Hoechst/Rhône-Poulenc (recital 36), the Commission indicated that a further breakdown seems to be appropriate with regard to crops such as potatoes and sugar beets. Some of the potato or beet insecticides solely treat nematodes and soil insects within the soil and are applied by bringing them on or into the soil. These products are called nematicides. Other products are designed to protect potato or beet plants against lice and other foliar insects and are applied to the leaves by spraying. These products are called foliar insecticides. The two different kinds of products are based on different active substances, are applied in different ways and are not substitutable for each other.

(71) Another differentiation could be envisaged between sucking and chewing insects. Chewing pests such as caterpillars damage crops by eating them up, whereas sucking pests such as aphids transmit viral diseases and thereby reduce crop quality. However, this describes rather the way of feeding than the mode of action of insecticides. In any event, the question of whether such a breakdown is appropriate can be left open in this case, since it would not materially change the competitive assessment.

(72) It is also conceivable to further separate the market for insecticides along the lines of chemical classes. The following table shows the most important chemical classes used as insecticides in Europe:

(%)

Chemical class	Market Share
Organo-Phosphates	28
Pyrethroids	20
Carbamates	18
Nitromethylenes	< 10
Nicotinoids	5
Organochlorines	3
Benzylureas	3
Others	15

(73) As can be seen from the above table, organophosphates (OPs), pyrethroids and carbamates are the three main chemical classes of insecticides. It has been argued by third parties that pyrethroids constitute a separate submarket within the insecticides because of their very broad spectrum of activity, high speed of action and advantages for environmental stewardship, since the compound is a synthesised natural product. Pyrethrum is a toxic hydrocarbon of the kerosene type which is derived by extraction of chrysanthemum flowers. However, for a given crop category, the farmer selects insecticides on the basis of the spectrum of pests which need to be combatted. For some crops like cereals or forage crops pyrethroids are the main class used to combat insects. Therefore, the breakdown of markets by type of plant already contains a breakdown of insecticides by spectrum.

(74) Therefore, for the purpose of this Decision, the relevant market for insecticides is defined by type of crop and subdivided into foliar and soil insecticides.

SEED TREATMENT

(75) Seed treatment means the treatment (dressing) of seeds with plant protection products in order to protect them mainly against seed/soil borne diseases and soil insects.

(76) In Ciba-Geigy/Sandoz (recitals 118-121), the Commission has concluded that there are no separate markets for seed treatment, since treated seed is, from the farmer's point of view, ultimately substitutable for fungicides and insecticides applied to the soil or sprayed. Seed treatment is considered to be a particular type of application of insecticides and fungicides.

(77) However, this conclusion has not been confirmed by the current market investigation for seed treatment products for cereals in Spain, the only activity that AstraZeneca has with regard to seed treatment. The diseases and the insects that are targeted with seed treatment products differ from those dealt with by spraying programmes. In Spain, these diseases and insects are treated with different active substances. Furthermore, products used for seed treatment must be registered separately and be coloured with a dye. There is, therefore, no supply-side substitution between products registered as an insecticide or fungicide (as defined above) and those registered for seed treatment. Also the customers for seed treatment products differ from those for insecticides and fungicides. Insecticides and fungicides are finally purchased by the farmer. A clear majority of seed treatment products is sold to seed producers and propagators. These customers own dressing plants where they dress the seeds with seed treatment products. Therefore, seed treatment products for cereals in Spain are a distinct product market.

PLANT GROWTH REGULATORS

(78) Plant growth regulators are agrochemicals that inhibit, stimulate or modify plant growth and development. They have different modes of action, depending on their chemical class. One of their most important effects is the inhibition of vegetative growth of crops. As indicated in Ciba-Geigy/Sandoz (recital 123) and confirmed by the market investigation, growth regulators for individual crop types form separate relevant markets

B. **RELEVANT GEOGRAPHIC MARKETS**

(79) The parties submit that the markets for formulated products and growth regulators are at least EEA-wide since they maintain that conditions of competition are not appreciably different across the EEA. As support for their position the parties argue that numerous large, international manufacturers are present throughout the world; that the distribution channel is characterised by large distributors that have little brand loyalty; that farmers are price conscious; that processors and retailers are setting broad European standards in crop management; and that major food retailers are increasing their international purchasing power. Furthermore, the parties argue that national patents and trademarks do not constitute a barrier to EEA-wide distribution and that Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market ([26]), as last amended by Commission Directive 99/80/EC ([27]) has harmonised national regulations laying down requirements for the registration of crop protection products and that the corresponding national registration procedures have largely been harmonised. The parties also maintain that the marketing of crop protection products has been largely harmonised and that it is therefore easy to resort to parallel imports. According to the parties, transport costs are low, corresponding to 1 % of total costs. Finally, the parties claim that there has been a noticeable trend towards convergence of prices between Member States, and that this convergence is facilitated by the price transparency and the stability of cross-exchange rates created by the launch of the euro.

(80) The Commission has in its previous decisions in this sector (Ciba-Geigy/Sandoz, point 128; Hoechst/Rhône-Poulenc, recital 48) left open the precise definition of the geographic markets for formulated products and growth regulators in the agrochemical sector.

(81) Several competitors agree with the parties that the geographic markets for formulated products and growth regulators are wider than national. Some competitors argue for European-wide markets while others argue that markets may usually be defined by certain climatic regions rather than by national borders. Competitors arguing for European-wide markets refer to the effects of Directive 91/414/EEC. However, others emphasise that formulated products still have to be registered in Member States before they can be marketed. The fact that products are, in most cases, covered by EEA-wide patent protection was mentioned as an element arguing in favour of a finding that markets are EEA-wide. Some competitors do not see that transportation costs constitute a hurdle to trade although others say that they may be relevant. Furthermore, some competitors argue that cross border sales are growing and that prices are converging. While acknowledging that cross-border shipments do occur, another competitor points to registration requirements, different languages, etc., rendering the cross-national marketing of products difficult.

([26]) OJ L 230, 19.8.1991, p. 1.
([27]) OJ L 210, 10.8.1999, p. 13.

(82) However, a large number of customers, farmers' associations and crop consultants have brought forward arguments that point to the conclusion that markets are still national. Crop protection products must still be registered in a Member State before they may be marketed. Distribution is organised on a national basis, with suppliers having in most cases national sales organisations or distributing via the sales organisation of another manufacturer operating in the relevant Member State. Parallel-imported products are seen as difficult to commercialise, among other reasons because brand names and formulations may vary between Member States, because registration fees may be high, and because it may take a long time to register the products.

(83) The market investigation has shown that the markets for formulated products and growth regulators must be analysed at a national level. The various arguments for this conclusion are given below.

REGISTRATION OF PRODUCTS

(84) The Commission notes that Directive 91/414/EEC harmonises national regulations. The Directive, and later amendments and implementing directives, establishes a positive Community list of active substances whose use can be deemed in advance to be acceptable for human or animal health or the environment (the Annex I list). It furthermore establishes a system for the authorisation by the Member States of different formulations containing the active substances in the positive list, in accordance with the requirements laid down in the Directive and according to uniform principles; the mutual recognition of acceptance by the Member States, provided that the plant health, agricultural and environmental conditions are comparable in the regions concerned; harmonised rules concerning the requirements on information, protection of information and confidentiality; harmonised rules concerning labelling and packaging; harmonised rules concerning the development of plant protection products; and provisions on the exchange of information between Member States and the Commission.

(85) However, the full effects of the Directive are still not being felt. For the moment, less than 10 active ingredients have been registered at European level (Annex I). The approximately 800 other active substances on the market are not yet covered by the Community-wide system. Over time, companies will, however, have to re-register all the active ingredients that they want to continue selling. The continuing process of screening the existing active substances for inclusion in Annex I requires that large amounts of information have to be produced by the companies. The full information packages for the majority of the existing active ingredients will have to be produced by May 2003.

(86) The harmonisation of national registration procedures referred to by the parties concerns active ingredients included in Annex I. Since the number of active ingredients already in Annex I is very limited, clearly the national registration systems are still the important step for companies.

(87) It should also be noted that a product has to be registered by the national authorities before farmers in that Member State can use the product. Furthermore, even if the exact same product is available in another Member State, farmers are typically not allowed to buy a product in another Member State and use it in their home country without asking permission by their national authorities.

(88) Finally, it is the producers that decide which products to register in which countries. Often, products which are available in one Member State cannot be bought in the next, or similar products based on the same active ingredients may be introduced in different formulations in different Member States. Hence, even when all active ingredients are entered in Annex I and the harmonisation of registration procedures envisaged by Directive 91/414/EEC is complete, crop protection companies will still have the opportunity to segment the European market. A concrete investigation of the way in which competition works will therefore still be necessary at that point.

PARALLEL IMPORTS

(89) The rules for parallel imports vary from country to country. Some countries have only recently introduced legislation (France) while others still have no legislation in place (Finland and Greece). In some countries a separate permit is requested for each batch (Belgium) while for others a parallel import registration lasts as long as the original product is registered (Denmark). In

most countries the product has to be exactly the same as the original registered products, while in others small differences are allowed. According to the parties, the average time from request to decision varies from two weeks (Belgium) to three to five months (Italy) while the costs vary from zero (Denmark) to 2 000 EUR (Austria).

(90) Generally, the market investigation has shown that there are still many practical difficulties for parallel importers, both in getting import permits and in finding reliable and stable sources of supply. In particular producers can and do establish systems so that they can trace Europe-wide the final destination of their product. The overall level of parallel imports is therefore quite low, and the wide price differences for identical products between the various Member States (see recital 98) show clearly that parallel imports do not effectively restrain producers from segmenting the European market for pricing purposes.

DISTRIBUTION

(91) Crop protection distribution systems vary widely between Member States. In Denmark, cooperatives and smaller dealers have formed buying groups. The three largest distributors, which operate in all of Denmark, represented, according to AstraZeneca, [90 to 100]* % (respectively [30 to 40]* %, [30 to 40]* % and [20 to 30]* %) of total sales in 1999. Furthermore, one of these three distributors in 1999 created a joint purchasing company with a major Swedish distributor. Italy is at the other end of the spectrum with [more than 5 000]* distributors (according to AstraZeneca), no distributor operating on a national level, the largest distributor having [0 to 5]* % of total sales and the top 10 distributors together around [10 to 20]* %. France, Greece, Spain and Portugal also have quite fragmented distribution systems, Austria, Finland, Norway and Sweden have quite concentrated systems while Belgium, Germany, Ireland, the Netherlands and the United Kingdom are somewhere in between. The distribution systems also vary with respect to that part of crop protection sales that goes through cooperatives, from [0 to 5]* % in the United Kingdom and [5 to 10]* % in Belgium to [60 to 70]* % in France and [60 to 70]* % in Norway.

VARIATIONS IN USE

(92) Climatic conditions have an influence both on which crops are grown and on the levels of crop protection which are needed in the various Member States. A good example of this is cereal fungicides. A farmer will decide on the optimal number of treatments, the diseases o target, the resulting products and the dosage with which the products would be used. His decision will depend on the seed variety, the soil, the climatic conditions, previous disease occurrence and other relevant factors. The outcome of these decisions is closely linked to the intensity of cereal farming, with yields ranging from 6 t/ha or less up to 10 t/ha or more.

(93) The importance of disease varies between areas. Powdery mildew, *septoria* leaf and glume blotch, and *fusarium* head blight occur frequently in all EEA countries. Eyespot occurs frequently in the United Kingdom, Ireland, northern Germany and northern France, yellow rust in the same countries and Belgium, while *septoria* leaf spot or blotch occurs frequently in the United Kingdom, Ireland, Germany, France, Belgium, the Netherlands, Scandinavia and Austria. On the other hand, brown rust occurs frequently in France, southern Germany, Italy, Spain, the southern United Kingdom, and Belgium.

(94) Another way to approach this is to look at the most important diseases in different Member States. In Denmark, Germany, the Netherlands, Norway, Sweden and the United Kingdom the two most important diseases are *septoria* and powdery mildew. In France they are *septoria* and rust, in Italy rust and *fusarium* and in Spain rust and powdery mildew. Products which are particularly strong against the most important diseases that occur in a Member State will obviously have a strong competitive position in that country.

(95) The number of spray programmes also varies between Member States. In particular, the number of fungicide treatments is related to the intensity of cereal farming, ranging from zero in the whole of Greece up to three (or four) sprays for wheat and two for barley in the most productive areas such as northern France, the southern United Kingdom, Germany and Belgium.

(96) A further reason for the existence of national variations in use is the significant impact of technical product evaluations by independent research institutes, as indicated by the parties as an argument for national markets for sugarbeet seeds. These institutes publish recommendations for the use of crop protection products, which are widely consulted by both farmers and crop consultants. These independent research institutes are typically national and a recommendation by a given institute will therefore primarily influence use in one Member State only.

DIFFERENCES IN MARKET SHARES

(97) Another indication that the geographic markets are not EEA-wide is the large variation in market shares between the different Member States that not only the parties but also their competitors have in many product markets. The parties admit in the notification that there are differences in the undertakings' market shares between Member States but do not regard this as evidence supporting a national market definition. According to the parties, these differences can partly be attributed to the different product requirements created by climatic conditions, etc., across Europe. The Commission finds that this is an argument in favour of narrower geographic market definitions than the (at least) EEA-wide definition advocated by the parties. Furthermore, it should be noted that often the identity of the participants in the various national markets is not the same. As was explained above, the companies decide in which countries to try to register their products. Sometimes the companies decide not to register the product in all countries, and typically companies will not introduce their products simultaneously in all the countries where they plan to register their products. There may be a lag of several years between the first and the last registration of a product.

PRICE DIFFERENCES

(98) The market investigation has shown that prices can vary substantially between Member States. The parties' internal documents refer on some occasions to the need to have price convergence; however, it also appears from their internal documents that there are still important price differences ([28]). In the notification AstraZeneca gave examples of the variations in price per kg active ingredient in the EU and Norway for several of its most important active ingredients. In 1999 the ratio of the highest price to the lowest price was [>1]* for Azoxystrobin, [>1]* for chlorothalonil, [>1]* for fluazinam, [>1]* for flutriafol, [>1]* for hexaconazole [>1]* for diquat, and [>1]* for fluazifop-p-butyl. The parties argue that some of these differences are due to different pack sizes, smaller pack sizes having a higher price per kg active ingredient. However, AstraZeneca has also provided pricing on a brand-specific basis. For azoxystrobin, the two brand names for which prices are given, are Amistar and Quadris. For Amistar the ratio highest/lowest price differential in 1999 was [>1]*, for Quadris [>1]*. For the active ingredient hexaconazole, the ratio was [>1]* for the brand name Anvil, and [>1]* for the brand name Planete (where, however, figures are given for two countries only). Some examples of the same ratio for Novartis are [>1]* for the product Topik EC240, [>1]* for the product Moddus 250ME and [>1]* for the product Mavrik 240.

CONCLUSION

(99) For the purpose of the assessment of this case the markets for formulated products and growth regulators must be considered national in scope.

C. **ASSESSMENT**

C.1 *FUNGICIDES*

CEREAL FUNGICIDES

Disease control in cereals

(100) The cereals market consists of crops such as wheat, barley, oats, rye, triticale and a number of other crops such as mixed grain, sorghum, buckwheat, millet and others. Wheat and barley are the two most important crops and they account for some 87 % of the total cereals cultivated area in the EU and for some 95 % of cereal fungicide consumption. The other crops are grown mostly in Nordic countries and Portugal, where they are used for direct farm consumption as cattle feed. The use of fungicides in these other crops is lower because the crops are grown on a fairly extensive basis and on less productive soils. Only in Sweden, Germany and Finland are these crops estimated to account for more than 10 % of fungicide consumption. These crops will not be dealt with further below, as wheat and barley are considered to be representative for all cereals, even for Sweden, Germany and Finland, since the diseases and the fungicides are the same for these crops as for wheat and barley. In addition, the availability of market data for these other crops is limited.

(101) The main diseases in wheat are eyespot (*Pseudocercosporella herpotrichoides*), powdery mildew (*Erisiphe graminis*), brown rust (*Puccinia recondita, Puccinia hordei*), yellow rust (*Puccinia striiformis*), *Septoria* leaf spot or blotch (*Septoria tritici*), Septoria leaf and glume blotch

([28]) [Novartis business secret — price differentials]*.

(*Septoria nodorum*) and *Fusuarium* head blight (*Fusarium culmorum*, F *graminearum*, F *avenaceum*, *Microdochium nivale*). The main diseases in barley are eyespot, powdery mildew, brown rust (also wheat diseases), net blotch (*Drechslera teres*) and leaf blotch or scald (*Rhynchosporium secalis*).

(102) These diseases occur under different circumstances relating to climatic optimum and sensitivity to the seed variety. Their presence and importance differs to some extent in the different Member States. What they have in common is that they all can lead to important yield decreases when they occur in the crop. A rough subdivision can be made between diseases attacking the stem base, the leaves and the ear of the plant. The relevance of this distinction is that this influences the optimal date for treating the crop, and hence in which spray (if multiple sprays are made) a fungicide targeted at the specific disease is best used (see section 'spray programmes' below).

(103) Eyespot is a disease attacking the stem base of the plant. Its climatic optimum for development is cold and wet weather. It therefore does not occur in southern Europe, but occurs frequently in the United Kingdom, Ireland, northern Germany and northern France. It also occurs in the rest of Germany and France, as well as in Austria and Scandinavia. The disease has an impact on the ear filling (i.e. weight of grain on the plant), causes shrivelled grain and can lead to the crop falling down before harvesting (lodging). Yield decreases can be in the range of 5 to 20 %.

(104) The group of fusarium pathogens can cause stem or ear diseases. They are difficult to predict, but wetness is a guide to potential infection (more important on the ear in wet years and on stem bases in warm, dry soils). The disease has become more prevalent in recent years and can cause lodging of the crop (stem base related) or can reduce the quality of the grain and cause toxin production. It occurs in all countries.

(105) The leaf diseases on wheat and barley are powdery mildew and brown rust. Powdery mildew is a leaf and ear disease occurring with warm weather (12 to 20 °C) and high relative humidity. It is inhibited by temperatures above 25 °C and by heavy rain. It frequently occurs in all EEA countries. The influence of the seed variety on the disease occurrence is high. It strikes at the green leaf area and the grain filling with yield decreases of some 10 to 15 %, and sometimes up to 40 %.

(106) Brown rust develops in warm weather (15 to 22 °C). Dry and windy conditions favour the spread of the disease. It occurs more predictably in the warmer climates of southern Europe, and more rarely in cooler northern Europe. It is less important in barley than in wheat. It reduces the number and size of the grain and can give yield decreases of some 10 to 15 % with sometimes up to 50 %.

(107) The leaf diseases that only occur on wheat are the septorias and yellow rust. Net blotch and scald are barley leaf diseases, but they can also infect the ear.

(108) *Septoria tritici* is currently the most important wheat disease in Europe. The further north, the more common it becomes. Its development is favoured by 15 to 20 °C and rainfall to spread infection. Its cultural optimum is linked to early sowing and high nitrogen fertilisation. *Septoria nodorum* is favoured by warmer conditions than tritici (18 to 25 °C) and also infects the ear. It is now less common and less predictable than *septoria* leaf spot.

(109) Yellow rust occurs primarily on the leaf, but may also infect the ear. It is favoured by 10 to 15 °C with dry, windy days for spore dispersal. It occurs more in the United Kingdom and Ireland and the influence of the seed variety seed on the prevalence of the disease is very high.

(110) The barley diseases net blotch and scald are both favoured by cool and wet conditions. For both, the influence of the seed variety is high. Especially net blotch can cause important yield decreases (10 to 40 %). Both diseases frequently occur in the United Kingdom, Ireland, northern Germany, northern France, Belgium and Scandinavia. Net blotch also occurs frequently in Austria and scald frequently in the Netherlands.

Spray programmes

(111) The farmer, advised by his distributor, independent crop consultant or technical institute, decides on the optimal number of treatments and the diseases to target. This decision is based on the seed variety, the soil, the

climatic conditions, previous disease occurrence and other relevant factors. After this decision is made, the products to include in his spray programme are determined as well as the dosage with which the products should be used.

(112) The outcome of these decisions differs substantially among the different Member States and is closely linked to the intensity of cereal farming with yields from six tons/ha or less up to 10 t/ha or more. Related to the intensity is the number of fungicide treatments, ranging from none, as in the whole of Greece, up to three (or four) sprays for wheat and two for barley in the most productive areas. Expressed as expenditure on cereal fungicides per hectare, this goes from EUR 0/ha in Greece up to EUR 68/ha in the Benelux countries and Ireland.

(113) In a triple-treatment programme for wheat, the stem base treatment (T1) would target eyespot and *fusarium*, the leaf treatment (T2) powdery mildew, *septoria* and yellow and brown rust, whereas the ear treatment (T3) would be aimed at *fusarium* and *septoria*. In some circumstances, a very early spray (T0) is done to target eyespot. In a typical double-treatment programme for barley, the T1 stem and leaf treatment would target eyespot, *rhynchosporium* and powdery mildew, the T2 leaf/ear treatment net blotch, scald and rust.

Technical strength of the active substances used for cereal crops

(114) Each active substance has a typical activity vis-à-vis a particular disease in a cereal crop, and this will influence the farmer's choice. The activity of a substance relates to the efficacy with which it can prevent and/or cure the disease and the duration of the protection (for curative substances this relates to the maximum period during which the disease is already present in the crop but can still be cured by the fungicide; for protective substances this relates to the maximum period of remaining protection). Other factors that are taken into account are the potential of the product to be mixed by the farmer with other products containing other active substances in his spraying tank.

(115) The active substances currently used as cereal fungicides belong mainly to three different chemical classes. The morpholines are the oldest of these classes, introduced in 1969, and mainly active against powdery mildew and, for this reason, still part of modern mixture products. They have some curative effect. In 1976 active substances of the triazole chemical class were introduced. There are around 15 active substances of this class currently on the market, with some being introduced only in recent years. Their main strength is with *septoria*, rusts and *fusarium*. The most recent chemical class, the strobilurins, introduced in 1996 combine a broad spectrum (powdery mildew, rusts, *septoria*) with yield increase. In addition to these three classes, there are some other active substances, the most important being cyprodinil, the 'gold standard' to treat eyespot, and quinoxyfen, the most effective substance against powdery mildew. The following table classifies most active substances according to their efficacy using the following classification (source: ITCF/parties):

XXXX	Excellent efficacy — the best active substance for this disease
XXX	Good efficacy-important active substance for controlling this disease
XX	Some efficacy
X	Side effect only
0	No useful efficacy on this disease.

Active Ingredient (subdivided by chemical class)	Powdery mildew	Rusts	Septoria	Eyespot	Fus. Nivale	Fus.Roseum	Rhynchos-porium	Pyrenophora
Azoxystrobin	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Picoxystrobin	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Trifloxystrobin	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Kresoxim-methyl Basf	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
BAS500 BASF	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Famoxadone Dupont	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Fenpropidin	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Fenpropimorph	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Tridemorph Basf	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Spiroxamine Bayer	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Cyproconazole	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Difenoconazole	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Flutriafol	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Hexaconazole	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Propiconazole	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Epoxiconazole Basf	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Bromuconazole Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Fluquinconazole Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Prochloraz Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Tebuconazole Bayer	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Triadimefon Bayer	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Triadimenol Bayer	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Flusilazole Dupont	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Metconazole Cyanamid	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Tetraconazole Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Carbendazim Dupont	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Benomyl Dupont	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Cyprodinil	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Chlorothalonil	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***	**[…]***
Anilazine Bayer	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Pyrazophos Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Iprodione Aventis	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
Quinoxyfen Dow	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*

(116) The active substances shown in bold in the above table are the parties' substances. The first group are the strobilurins together with famoxadone, which is technically not a strobilurin (and also lacks the greening effect found with strobilurins), but which because it has the same mode of action as strobilurins, is governed by the same resistance-management rules. The second group is the morpholines and the third group is the triazoles.

Strobilurin-based cereal fungicides

(117) The strobilurin-based products that are on the market today contain one of three strobilurin active substances. These are BASF's kresoxim methyl (hereafter KM), AstraZeneca's azoxystrobin and Novartis' trifloxystrobin. The first two were introduced in 1996 and 1997. Trifloxystrobin has received registration in the relatively small Norwegian and Belgian markets in 1999 and in March 2000 it obtained registration in the United Kingdom, a major cereal market. It is expected to be registered in France and Germany in 2000.

(118) BASF has introduced KM only in co-formulations with one or two of its active ingredients belonging to other chemical classes. It has three different formulations: one consisting of KM and its triazole epoxiconazole; one with the morpholin fenpropimorph; and one consisting of the three active substances.

(119) AstraZeneca sells azoxystrobin mainly as a straight product under the brand name Amistar. It also has a mixture product with its triazole flutriafol (Amistar Pro) and is introducing in France a mixture with its other triazole hexaconzole (Amistar Ter). Until 1999, AstraZeneca had capacity constraints on its strobilurin products, so that the sales potential of the products could not be fully exploited.

(120) Novartis will launch trifloxystrobin as a straight product (Twist/Flint), but also in mixtures with its strongest triazoles, cyproconazole (Sphere/Dexter) and propiconazole (Rombus/Stratego).

(121) The introduction of strobilurin-based cereal fungicides has had an enormous impact on the cereal fungicide markets. Their spectacular growth and the relative weight of the existing active ingredients can be illustrated by the following table, containing the market share of strobilurin-based products in cereals in France, Germany, United Kingdom, Denmark, Belgium and the Netherlands:

(%)

YEAR	1997	1998	1999
All Strobilurins % market share of total cereals	[10 to 20]*	[30 to 40]*	[40 to 50]*

(%)

% market share in strobilurins	1997	1998	1999
BASF	[60 to 70]*	[50 to 60]*	[50 to 60]*
AstraZeneca	[20 to 30]*	[40 to 50]*	[40 to 50]*

(122) The abovementioned countries account for over 90 % of total cereal fungicide consumption in the EEA. It is evident from these figures that BASF's overall share has decreased from [60 to 70]* % in 1997 to [50 to 60]* % in 1999. AstraZeneca has increased its share from [20 to 30]* % to [40 to 50]* %.

(123) As France, Germany and the United Kingdom account for considerably over 90 % of strobilurin-based cereal fungicide use, these will be discussed in more detail below. An overview will also be given for the Nordic markets.

Strobilurin-based cereal fungicides in France

(124) France is by far the largest cereal fungicide market with total strobilurin sales accounting for almost EUR 200 million in 1999, some [40 to 50]* % of total cereal fungicide sales in France. The strobilurin sales were evenly shared between BASF and AstraZeneca. Compared to 1998, AstraZeneca increased its sales with […]* whereas BASF's sales [BASF business secret]*.

(125) The introduction of the strobilurin-based products in 1997 had an important impact on the French market. After two campaigns (1997 to 1998 and 1998 to 1999), some three-quarters of farmers already use these products. In addition, the influential independent technical institute ITCF recommends strobilurins for all the different regional programmes as it is economically viable for the farmer to include the maximum number of strobilurins in his spraying programme ([29]) (in a one spray programme, a strobilurin should be included; in a

([29]) ITCF recommendations in 'Perspective agricoles, février 2000', p. 61 onwards.

two sprays programme, it should be included twice and in a three-spray programme, it should be included twice ([30]) as well). As there are currently, on average, 2,25 sprays in France and strobilurins are only used in 0,98 sprays, it can be concluded that there is considerable scope for a further increase in the importance of strobilurins in France.

(126) BASF has, in line with its general European policy, introduced its strobilurin (kresoxim-methyl or KM) only in co-formulations with other active ingredients. In 1997, it has introduced a mixture of KM with its triazole epoxiconazole (generally recognised as the best triazole on the market), sold under the brand names Ogam and Ludion. In 1998, BASF has introduced a mixture of KM with fenpropimorph, a morpholin with good curative activity against powdery mildew to complement KM in the face of resistance issues (brand names Senso and Larso). In 2000, BASF has introduced its three-way mixture of KM, epoxiconazole and fenpropimorph. However, it is not expected that it will lead to a major increase in sales as the tests undertaken by the ITCF give similar results to those of Ogam (KM + EPOXI). It might be used instead of Ogam in the event of severe powdery mildew occurrence. Ogam accounts for almost all sales of KM in France in 1999 and overall, BASF's sales remained stable from 1998 to 1999. Ogam is used in all treatments and to a very large extent without any other tank mixing.

(127) AstraZeneca introduced in 1997 both its straight azoxystrobin product (Amistar) and a mixture with fenpropimorph (Amistar Pro). It introduces in 2000 a third product, Amister Ter, a mixture of azoxystrobin and its triazole hexaconazole. This mixture will only be introduced in France, because hexaconazole is not registered outside Belgium and France. It is expected by the ITCF that this mixture will further increase the penetration of azoxystrobin in view of the curative activity of the triazole, and the test results show superior results to straight azoxystrobin on *septoria* and the rusts. Total azoxystrobin sales increased by more than [20 to 30]* % in 1999 compared to 1998, and some [60 to 70]* % of AstraZeneca's strobilurin sales are the straight Amistar. Azoxystrobin is mostly used in wheat as a T3 treatment and it sets the 'gold standard' for barley. Overall, Amistar is mostly used in tank mixes with other products.

(128) Novartis will introduce its trifloxystrobin products in 2001. It expects sales in this first year to reach […]*, increasing to […]* in 2004.

([30]) In view of resistance management, a maximum of two strobilurin sprays is recommended.

Strobilurin-based cereal fungicides in Germany

(129) In Germany, too, the introduction of the strobilurin in 1996 had a major impact on cereal fungicide competition, with strobilurin-based products accounting in 1999 for about half of the around EUR 240 million total expenditure on cereal fungicides. BASF's strobilurin sales were until 1999 considerably greater than AstraZeneca's sales. However, the rapid development of powdery mildew resistance with the first resistant strains being found in 1998 in northern Germany, and what the market considers to be an inappropriate strategic reaction by BASF, seems to have tarnished BASF's product positioning to the benefit of AstraZeneca. In 1998, BASF sold Juwel (a mixture of KM and epoxiconazole) and recommended its use in T1 and T2. As a reaction to the growth of powdery mildew resistance, in 1999 it withdrew its Juwel product (and withdrew its stocks, a very exceptional course of action in the crop protection business) and replaced it by Juwel Top (three-way mixture of KM + epoxiconazole + fenpropimorph). The product is positioned as a T1-only treatment; for T2 BASF recommends the use of Opus Top (epoxiconazole + fenpropimorph). Juwel Top is considered by leading advisors to be an inappropriate anti-powdery mildew resistance product, as the content of fenpropimorph in the mixture is too low. BASF also promotes a tank mixture of its Juwel Top with Dow's Fortress (quinoxyfen). For the 1999 to 2000 campaign, BASF and Dow have launched a twin pack of Juwel Top and Fortress, called Juwel Forte, that is recommended in T1, while Juwel Top is recommended for T2. This package is considered by an independent expert ([31]) to reach almost the powdery mildew efficacy of the original Juwel product, but with less residual activity against septoria and rusts. BASF has thus changed its product portfolio and positioning with every annual cycle.

(130) AstraZeneca has had a very consistent approach with Amistar, positioned for all sprays. A particular element for Germany is that tank-mixing recommendations with other products is more prescriptive of dose and that these doses have to be agreed by the two companies. Amistar's recommended partners for T1 wheat is Bayer's tebuconazole (Pronto) prior to 1999 and Pronto Plus (tebuconazole + spiroxamine) for 1999. For T1 barley, the recommended partner is Dupont's Harvesan (flusilazole + carbendazim). In 2000, Amistar is recommended in wheat with Agent (Novartis' propiconazole and fenpropidin mixture) for T1 and with Gladio (Novartis' propiconazole, fenpropidin and tebuconazole mixture) for T2. These mixtures are recommended at lower dosages of fenpropidin than

([31]) Dr. Manfred Bartels in Top Agrar 1/2000, p. 53.

competitors offering fenpropimorph and quinoxyfen products are allowed. The AstraZeneca-Novartis mixtures are thus cheaper than the mixtures that Novartis' competitors (offering fenpropimorph, quinoxyfen) are allowed to recommend for tank-mixing with Amistar. In their Reply, the parties have indicated that the tank-mix recommendation with Pronto Plus is cheaper than that with Gladio. It can be noted that Pronto Plus does not contain fenpropimorph, fenpropidin or quinoxyfen. Moreover, the tank-mix with Agent is cheaper than that with Pronto Plus. For T3, Amistar is recommended on its own.

(131) The total acreage treated with strobilurins has, as a consequence of the resistance issues, decreased in 1999 compared to 1998, an exceptional feature within the European countries. The increase, by around onethird, of the surface area treated with Amistar (from […]* to […]* hectares) has not compensated the decline of BASF products from […]* (including […]* treated by Jewel in 1998) to […]* (including […]* with the new Juwel Top). However, for the first time Amistar accounts for more than […]*, compared to around […]* in previous years. Amistar could have been more successful if it had not faced capacity constraints. In total sales, BASF's products are still somewhat more important (as BASF's products are mixture products, they are priced higher than Amistar).

(132) It can be noted that the independently recommended treatments consist typically of one of the Juwel mixtures as T1 and Amistar as T2. The mixing partner changes according to circumstances. This 'natural division' will be challenged by Novartis (see recitals 134 to 137).

(133) According to Novartis' marketing plan, its trifloxystrobin products will be introduced in 2001. Sales in that year are estimated to account for […]*, thus accounting for [10 to 20]* % of the German strobilurin-based cereal fungicide sales.

Strobilurin-based cereal fungicides in the United Kingdom

(134) In the United Kingdom, too, strobilurins, introduced in 1997, had the significant impact on the market that they had in the other major cereal-producing countries (accounting for almost [40 to 50]* % of value in 1999). As powdery mildew resistance is less of a problem in the United Kingdom than in Germany (the anti-resistance strategy of a maximum of two strobilurin treatments remains), the progress of strobilurin usage continues.

(135) There appears to be a 'natural division' between the two producers' products, with BASF's products forming part of the first spray and AstraZeneca's Amistar in the later spray. In 1999, BASF had somewhat higher sales than AstraZeneca. [Competitor business secret]*.

(136) A specific feature of the United Kingdom market is that it is the first major market where Novartis' strobilurin, trifloxystrobin, under the brand name Flint is being introduced following registration in March 2000. It is thus the first market where the 'natural division' is being challenged by a new market entrant. According to provisional sales estimates, Flint achieved sales of some […]*. Despite the late introduction, these sales account for an estimated [10 to 20]* % of strobilurin sales. The merged entity can thus be expected to account, in 2000, for over [50 to 60]* % of strobilurin sales.

(137) Based upon its technical profile as a very broad spectrum fungicide with excellent activity on septoria (just as azoxystrobin) combined with mildew activity (contrary to azoxystrobin, but slightly inferior to KM), Novartis endeavours to position […]*. Overall, Novartis claims that its product […]*. Another big benefit compared to Amistar, with which it has to rival to provide the best tank-mixing solution (as opposed to KM that is only sold in pre-formulated mixtures), is said to be its increased dose flexibility […]*. On barley, where Amistar's lead was unrivalled by KM, trifloxystrobin has […]*. An additional advantage of Novartis' trifloxystrobin is that it will also be offered in pre-formulated mixtures with Novartis' strongest triazoles, cyproconazole and propiconazole.

Strobilurin-based cereal fungicides in the Nordic countries

(138) In Denmark, Sweden and Finland, AstraZeneca accounted in 1999 for over [70 to 80]* % of sales in each of these markets [Competitor business secret]*. As BASF's strobilurin products are not registered in Finland, AstraZeneca has [90 to 100]* % of strobilurin sales in Finland. Novartis expects to register its trifloxystrobin in Sweden and Finland in 2001.

New strobilurin-based products

(139) Following the first patents, the industry quickly recognised the broad spectrum disease coverage of

strobilurins in many different crops, so that all R & D based crop protection companies have been or are active in strobilurin research. Whilst the market investigation has enabled the Commission to have a good overview of the current position of each of the major companies in this respect, this information is confidential and can, therefore, not be disclosed as such in the following description. However, it can be concluded that from now until at least 2004 strobilurin products will come only from the merged entity and BASF.

(140) Novartis is gradually introducing its new strobilurin, trifloxystrobin, on the EEA markets.

(141) AstraZeneca, too, has a new strobilurin under development, the first second generation strobilurin. The product's name is picoxystrobin. The product is expected to be launched in […]*. It is indicated in the investment proposal for picoxystrobin manufacture presented to the AstraZeneca board on 30 September 1999, that […]*.

(142) Both parties' internal documents indicate that they expect that BASF will […]* launch in […]* its second-generation strobilurin, BAS500F. As stated in the previous recital, the technical merits of this compound are less than that of picoxystrobin, with the exception of eyespot. It can be expected, in view of the narrower spectrum of KM and the problems caused by the powdery mildew resistance management, that BASF will position this product to replace its KM product portfolio and, if possible, expand further. [BASF business secret]*.

(143) […]*

(144) [Competitors' business secrets]* Bayer has a strobilurin in development and expects [Bayer business secret]* first market launches in the year [Bayer business secret]*, thereby confirming the parties' estimate. However, this time horizon is considered too distant for the Commission to take into account for the purpose of assessing the consequences of this operation, in view of the uncertainties related to the outcome of the additional registration data that Bayer will have to collect between now and the year [Bayer business secret]*. The uncertainty is probably best illustrated by reference to the experiences of […]*. Not much is known about the technical performance of the Bayer substance, but an AstraZeneca estimate shows that the substance will not be better than picoxystrobin. [Bayer business secret]*.

(145) Bayer has entered into a […]* supply agreement for […]* azoxystrobin with AstraZeneca to develop a mixture with its spiroxamine active substance. The territories would be limited to […]* and Bayer will be the […]* distributor of the product. The product has been registered in Sweden since February 2000. [Bayer business secret]*.

(146) The parties have also referred to the launch of products that, whilst technically not strobilurins, have the same mode of action as strobilurins. It relates to the substances famoxadone from Dupont and fenamidone from Aventis. However, it appears from the public documents submitted by the parties that fenamidone is not active on cereals (its uses being downy mildew on grapes and vegetables and late blight on tomatoes). Furthermore, AstraZeneca internal testing results and the ITCF classification indicate that famoxadone has at most weak to average results in cereal diseases. This is also explicitly confirmed by internal AstraZeneca documents ([32]) and finds confirmation in the low sales results of the product in the markets where it has been launched.

Strobilurin sales forecasts

(147) Novartis' marketing plan foresees steadily increasing sales of its strobilurins. With sales in 2000 in Belgium and the United Kingdom of […]* up to sales in 2003 for a total of […]*. These EEA sales projections for 2003 are estimated to account for [10 to 20]* % of total cereal fungicide sales.

(148) Probably the highest-level overview of the parties' expected future market share in Europe in cereals comes from the document of September 1999 by which AstraZeneca's board was requested to agree to a picoxystrobin investment. Translating the data in this document into strobilurin-based cereal fungicides gives the following table:

([32]) […]*

[table based on internal AZ document]*

Strobilurins	Pico	Ami	Zeneca	BASF	Novartis	Others	Total sales
Early wheat	[…]*		[…]*	[…]*	[…]*		[…]*
Late wheat		[…]*	[…]*	[…]*	[…]*		[…]*
Barley	[…]*		[…]*	[…]*	[…]*		[…]*
Sales (USD million)	[…]*	[…]*	[…]*	[…]*	[…]*		[…]*
Total share in strobilurins	[…]*	[…]*	[…]*	[…]*	[…]*		[…]*

(149) The above overview gives the merged entity a combined share of above [>50]* % of strobilurin-based products. It may be noted that a competitor foresees similar market shares for the merged entity for 2003. Furthermore, most competitors expect that, instead of a penetration rate of […]* strobilurin-based products will account for some 60 to 70 % of total sales.

(150) The following table provides the forecast of future market shares of the merged entity ([33]) and BASF, the only companies offering these products up to 2004 (at least), for the EEA and for each of France, Germany and the United Kingdom for the years 2000 to 2004. The forecast is based on the companies' projected sales.

	EEA		FR		DE		UK	
	Syngenta	BASF	Syngenta	BASF	Syngenta	BASF	Syngenta	BASF
2000	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
2001	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
2002	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
2003	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*
2004	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*	[…]*

(151) On the basis of the sales forecasts of each of AstraZeneca, Novartis and BASF as summarised in the above table, it is plain that the merged entity would be the clear market leader in the EEA as a whole, France, the United Kingdom and Germany ([34]) with sales accounting for more than [>50]* % in the years to come in the EEA, France and the United Kingdom.

(152) A substantial number of the respondents in the market investigation have expressed concerns as to the future market position of the new entity in the domain of strobilurin-based cereal fungicides. All comments point to the fact that the already strong position of the parties in strobilurins in terms of market shares will be cemented by Syngentas opportunitities for mixing and bundling its strong strobilurins with its strong non-strobilurin-based fungicides. To further develop this argument, it is necessary to consider first the overall market context of the cereal fungicides markets.

([33]) […]*
([34]) […]*

Overall cereal fungicides markets

EEA Market Shares

(153) In 1998, the global fungicide markets were worth about EUR 5 billion, and [40 to 50]* % of this market was in Europe (EUR 2 134 million). Fungicide applications in cereals represent [40 to 50]* % of the total European fungicide market with a value of EUR 934 million (875 million according to the parties) and some [10 to 20]* % of total crop protection expenditure in Europe. Cereal fungicides and cereal herbicides (EUR 943 million) are by far the most important crop protection markets.

(154) For cereal fungicides in the EEA, the parties estimate that, in 1998, they commanded a combined market share of [30 to 40]* % (N [10 to 20]* % + AZ [10 to 20]* %) with sales of EUR […]*. BASF had [30 to 40]* % (sales of EUR […]*). Bayer, with sales of EUR […]*, would be the third player with [5 to 10]* %. Other competitors were Aventis with EEA sales of EUR […]* giving it a [5 to 10]* % market share and DuPont with EEA sales of EUR […]* giving it a [0 to 5]* % market share. The Commission's market investigation broadly confirms this estimate. The main difference is that Syngenta and BASF realised similar sales [Competitors' business secrets]*.

(155) For 1999, the EEA sales remained stable. From the information available to the Commission, it seems that all companies except AstraZeneca and Bayer have lost sales. BASF has lost some sales. Novartis has lost some [10 to 20]* % of its sales. However, the increase in sales by AstraZeneca (more than [20 to 30]* %) means that the merged entity market's lead is further increased. The merged entity has a [30 to 40]* % market share (N [10 to 20]* % + AZ [20 to 30]* %). BASF has [30 to 40]* %. Bayer has [5 to 10]* %, followed by Aventis [5 to 10]* % and the others each less than [0 to 5]* %.

(156) The three most important national cereal fungicide markets are France, Germany and the United Kingdom. They account for almost 90 % of total cereal fungicide sales in the EEA. These markets are the best documented and will be described in recitals 157 to 173. In addition to these three national markets, a short description will also be given of the Nordic markets, where the concentration is considered to lead to the creation of a dominant position.

The French cereal fungicide market

Market share figures

(157) As indicated above, France is by far the largest cereal fungicide market. This is shown by the large cereal acreage of around 7,5 million hectare, of which 5,2 are wheat and 1,6 barley, and one of the most intensive uses of fungicides, with around EUR 49/ha. Only in the smaller Benelux and Irish market is there a more intensive use of cereal fungicides (around 68 EUR/ha). This overall figure for France hides some considerable regional differences. In the South of France, only one to two sprays are used, whereas in the north three sprays are the norm with sometimes even an additional early 'eyespot' treatment.

(158) The parties estimate that in 1998 total sales were some EUR […]*. According to their estimate, they have a combined market share of [30 to 40]* % (N [20 to 30]* % + AZ [10 to 20]* %), BASF has [30 to 40]* %, Aventis [5 to 10]* %, Bayer [5 to 10]* % and DuPont [0 to 5]* %. The Commission's market investigation, based on the replies of the above companies as well as Dow and American Cyanamid, indicates that estimated sales of the responding companies are slightly above the parties' estimate for the total market. On the basis of the market investigation, the market shares of Syngenta and BASF would be somewhat higher, but the percentage difference remains broadly the same. It also appears that the respective sales of N and AZ are more even than suggested by the parties' estimate. The market shares of the other companies are broadly confirmed. — Syngenta would appear to have [40 to 50]* % (N [20 to 30]* % + AZ [20 to 30]* %), followed by BASF with [30 to 40]* %. Bayer has [5 to 10]* %, Aventis [5 to 10]* %, Cyanamid and Dupont [0 to 5]* % and Dow [0 to 5]* %.

(159) The 1999 French market grew by [0 to 5]* % compared to 1999. Novartis has suffered a loss of sales accounting for some [0 to 5]* % market share. However, this loss has been almost totally offset by the increase in sales of AstraZeneca. BASF's sales have remained stable compared to 1999. Of the other companies, DuPont's sales have decreased substantially. Syngenta would have [30 to 40]* % (N[10 to 20]* % + AZ [20 to 30]* %). BASF has [30 to 40]* %. Bayer has [10 to 20]* %, Aventis [5 to 10]* %, Cyanamid [0 to 5]* %, Dupont [0 to 5]* % and Dow [0 to 5]* % .

Products and companies

(160) With regard to the continuously growing importance of the strobilurins, reference is made to the recitals 124 to 128 dealing with strobilurin-based cereal fungicides in France.

(161) There are over 100 cereal fungicide products offered in France. In addition to the strobilurins, the most important products are BASF's epoxiconazole product range (straight and mixtures with respectively fenpropimorph and chlorothalonil) and Novartis' cypridonil product range (straight and mixtures with respectively fenpropidin and propiconazole). BASF's epoxiconazole products, and in particular the straight product (brand name Opus), are generally considered the best starting block for a non-strobilurin spray and, in view of the general recommendation to use a maximum of strobilurins, this leads to its being recommended as T1 of any three spray programme. It is also often tank-mixed in later sprays with Amistar. Novartis' cyprodinil is the most effective eyespot product and thus tank-mixed in the T0 or T1 spray. Other important Novartis products are based on its triazoles cyproconazole and propiconazole, its morpholines fenpropidin and fenpropimorph (the latter shared with BASF), and sulphur.

(162) Bayer's position is still strongly based on its triazole tebuconazole, either straight or in mixtures. The strength of these products is in wheat and barley rusts. In 1999, it introduced products based on spiroxamine, a morpholine-like product with a good effect on powdery mildew. Dupont's cereal fungicide portfolio is based around its triazole flusilazole, either straight or in mixtures. Dow entered the market in 1998 with its mildewicide quinoxyfen. Aventis' products are based on its four triazoles (bromuconazole, fluquinconazole, triticonazole and prochloraz). Its fluquinconazole product (brand name Flamenco) was introduced in 1999 and is particularly well suited to be tank-mixed with AstraZeneca's Amistar. Its best-selling product, with brand names Tango Duo and Capitole, is a mixture of its morpholin tridemorph with BASF's epoxiconazole.

Distribution

(163) In France, in keeping with the situation in the other important cereal-producing countries, cereal fungicides are very attractive products for distributors and they are estimated to account for about [10 to 20]* % of the distributor's total profitability on crop protection products. Distributors have, in general, a wide range of products available from all different producers. Exclusive or selective distribution for crop protection products is rare. The common way of operation in the sector is to have an agreement on the support actions (field tests, product demonstrations, mailings and so forth) that the distributor is going to take and the cooperation and/or compensation he receives for this from the producer. There is, however, a notable exception, namely the distribution of Amistar in France. AstraZeneca has succeeded in setting-up a selective distribution system with […]* distributors who are granted exclusivity in their territory. The distributors are committed to reaching an agreed minimum sales figure, not to sell any directly competing product, unless agreed by AstraZeneca, and to sell only to final consumers or other exclusive distributors. The respect of these latter clauses is controlled by means of a […]*. The contract has a […]* duration and has allowed AstraZeneca […]*, as well as combatting dosage reduction. In this way, AstraZeneca can further develop the relationship for the following years and benefits from the preferential treatment of Amistar vis-à-vis Ogam (BASF's KM + Epoxi strobilurin mixture).

The German cereal fungicide market

(164) Germany is still predominantly a one-spray country ([80 to 90]* % of total sales), with some two spray treatments and a three spray programme proving very rare. Expenditure on cereal fungicides accounts for an average of EUR 39/ha.

(165) The parties estimate that in 1998 total sales were some EUR […]*. According to their estimate, BASF is the market leader with [40 to 50]* %, followed by Syngenta with [30 to 40]* % (N [5 to 10]* % + AZ [10 to 20]* % + [0 to 5]* % of their products distributed by a third party), Aventis [5 to 10]* %, Bayer [5 to 10]* % and DuPont [0 to 5]* %. On the basis of the market investigation, total sales almost reach EUR 250 million. BASF's and Syngenta's respective market shares would be somewhat lower than the parties' estimate, but the percentage difference remains broadly the same. With the exception of DuPont (higher market share), the other companies' market shares are in line with the parties' estimate. BASF has [40 to 50]* %, Syngenta [30 to 40]* % (N [5 to 10]* % + AZ [20 to 30]* %), Aventis [5 to 10]* %, Dupont and Bayer [5 to 10]* %, Cyanamid [0 to 5]* % and Dow [0 to 5]* %.

(166) In 1999, BASF lost considerable market share to the benefit of almost all other competitors. As a result, BASF lost its market leadership to the merged entity. Syngenta has [30 to 40]* % (N [10 to 20]* % + AZ [20 to 30]* %), BASF [30 to 40]* %, Aventis and Bayer [5 to 10]* %, Dow and Cyanamid each less than [0 to 5]* %. BASF has thus lost [5 to 10]* % market share.

(167) The importance of the strobilurins is outlined above. Specific reference is made to the powdery mildew resistance problems of BASF and the resulting decline in market share.

(168) With regard to the non-strobilurin products, it can be noted that Novartis, contrary to its position in most other European countries, has substantially increased its total sales in 1999, especially with its propiconazole mixtures (Gladio and Tilt Top brands). The other competitors, too, and especially Bayer, have succeeded in increasing their sales. As noted above, Bayer's main product, Pronto Plus is marketed as the ideal tank-mixing partner to Amistar. It is also positioned as an effective fusarium treatment, a disease whose occurrence and the resulting toxin production is subject of debate in Germany. In addition, Cyanamid is positioning its product (metconazole — Caramba brand) in this segment as a direct competitor to Bayer's Folicur (straight tebuconazole). Dow has, as was indicated above, linked its Fortress (quinoxyfen) to BASF's Juwel Top and both are now selling the Juwel Forte pack. Dow has stopped selling Fortress as a straight product.

(169) The German market is very prescriptive with regard to the oppportunities open to a producer to state that its product can be tank-mixed with that of other producers. Contrary to the other Member States, this requires the agreement of both producers, even with respect to the respective dosage with which the tank-mix can be recommended. In this respect, reference is made to a recent agreement (for the 2000 campaign) between Zeneca and Novartis to recommend tank-mixing between azoxystrobin and fenpropidin based products. As the dosage at which this mixture is recommended is lower than the prescribed dosage for other mixtures, this gives the companies the chance to offer the most attractive mixture to the detriment of the other companies' mixture candidates based on fenpropimorph or quinoxyfen (powdery mildew segment).

The United Kingdom cereal fungicide market

(170) Average expenditure in the United Kingdom on cereal fungicides is EUR 44/ha. In the United Kingdom, T2 is the most important spray for wheat, followed by T1 and T3. T3 is popular only during a wet summer and increasingly Amistar at low dose is becoming popular. Of the total of two sprays, barley responds better to an application at T1. As to area treated, over onethird of the total area receives two sprays, with most of the remainder being more or less equally spread over one and three sprays. From a value point of view, almost [40 to 50]* % of the market is accounted for by the three spray programmes (with the T2 being the most valuable), [30 to 40]* % by two sprays (with the T2 being the most valuable) and little over [5 to 10]* % by the one spray area.

(171) The parties estimate that in 1998 total sales were some EUR […]*. According to their estimate, Syngenta has [30 to 40]* % (N [10 to 20]* % + AZ [10 to 20]* %), BASF [30 to 40]* %, Bayer and DuPont [5 to 10]* % each and Aventis less than [0 to 5]* %. On the basis of the market investigation, total sales are below EUR 150 million and BASF would be the market leader, closely followed by the merged entity. Together, the two companies would account for around [60 to 70]* %. Bayer would account for over [5 to 10]* % and the other companies would account for considerably below [5 to 10]* %. The total market is estimated at EUR […]* with BASF accounting for [30 to 40]* %, followed by Syngenta with [30 to 40]* % (N [20 to 30]* % + AZ [10 to 20]* %). Bayer has [10 to 20]* %, Dupont and Aventis each [0 to 5]* %. Dow has [0 to 5]* % and Cyanamid less than [0 to 5]* %.

(172) In 1999, the overall market has grown. However, this overall growth hides considerable shifts between the companies, with spectacular growth by AstraZeneca (sales doubled) and a further growth for BASF. The other companies, and in particular Novartis, lost considerable sales. Overall, BASF would remain market leader, closely followed by the merged entity. The overall market is EUR […]*. BASF has [30 to 40]* %, having increased its sales with almost EUR […]*. Syngenta has [30 to 40]* % (N [10 to 20]* % + AZ [20 to 30]* %). Novartis lost over EUR […]* of sales, but AstraZeneca increased its sales with EUR […]*. Bayer has [5 to 10]* %, Aventis [0 to 5]* %, Dupont and Dow [0 to 5]* %.

(173) It can be noted that estimated sales for 2000 of Novartis' trifloxystrobin product alone, launched in March 2000, would account for almost as many sales as Novartis' total sales in 1999 EUR […]* sales accounting for an estimated [10 to 20]* % market share. It is, therefore, beyond doubt that the merged entity would be the market leader in 2000.

The Nordic countries: Sweden, Finland and Denmark

(174) The parties estimate that the Swedish market in 1998 is worth EUR […]* and Syngenta would have a [90 to 100]* % market share (N [50 to 60]* % + AZ [30 to 40]* %). BASF would have a [0 to 5]* % market share. This is broadly confirmed by the market investigation. In the growing 1999 market, the parties maintained their market share, with the substantial gains of AstraZeneca compensating for the loss of Novartis. BASF is the other relevant market player.

(175) AstraZeneca was not present on the cereal fungicide market until the introduction of Amistar in 1997, two years before BASF introduced its Mentor (KM + fenpropimorph). In those two years, AstraZeneca captured around two-thirds of the total market, and the result could even have been better had the product been more widely available, since shortages put limits on sales support activities. BASF succeeded only in capturing less than [5 to 10]* % of the market and its sales are considerably below those of AstraZeneca in the Amistar launch year.

(176) Before the introduction of the strobilurins, Novartis was the uncontested market leader with its propiconazole and fenpropimorph based products (mostly mixtures). Also BASF has a straight fenpropimorph product on the market, but this only has very limited sales, even when compared to the sales of Novartis fenpropimorph+propiconazole mixture (Tilt Top). This Novartis mixture product had thus successfully blocked the development of BASF's straight product (see also Denmark, at recitals 179 et seq.). Novartis succeeded in registering its cyprodinil + propiconazole mixture in 1999 (Stereo), a competitor to Amistar in barley. The only other triazole on the market is Aventis' Sportak (prochloraz), distributed by BASF. It has lost a lot of its market share and, on account of its limited spectrum, it has a narrow application window.

(177) The parties estimate that the Finnish market in 1998 is worth EUR […]* and Novartis would have a [60 to 70]* % market share whilst AstraZeneca was not present. This is confirmed by the market investigation. However, AstraZeneca entered the market in 1999 and accounted for less than [5 to 10]* %. Furthermore, Novartis increased its sales. It can, therefore, be concluded that the merged entity's market share is some [80 to 90]* % in 1999.

(178) All crop protection products are imported on the Finnish market by either Berner or Kemira. These companies have agreements with one or more of the manufacturers for their whole portfolio. Amistar was only introduced in 1999, with Berner as the local registration holder. Contrary to the experience in the other Nordic countries, it captured only a small part of the overall market. Novartis portfolio (Tilt and Stereo), imported by Kemira, still accounts for much of the remainder of the market.

(179) The Danish market is the fourth most important cereal fungicide market. However, with total sales estimated, by the parties, to be […]*, it accounts for only a fraction of the 160 million sales in the third most important market, the United Kingdom. The parties estimate that Syngenta would have an [80 to 90]* % market share (N [40 to 50]* % + AZ [40 to 50]* %). BASF would have a [5 to 10]* % market share and Bayer [0 to 5]* %. In 1999, the overall market increased somewhat but Novartis lost considerable sales and market share. However, AstraZeneca more than compensated for those losses. Overall, Syngenta maintained its high market share. The market investigation indicates that the merged entity's market share was above [60 to 70]* % in 1998 and that this has further increased in 1999 to almost [70 to 80]* %.

(180) In Denmark, in line with the other Nordic countries, few crop protection products are registered. This is also true of cereal fungicides. Several of the new triazoles have been tested in the Nordic countries, but they have not been able to pass the registration tests. A typical feature for the Danish market is that the dosage usage rates are extremely low compared to the rest of Europe. Where Amistar is recommended at 1 l/ha and used straight in the range of 0,6 to 0,9 l/ha, the Danish farmer only uses 0,3 l/ha.

(181) Since the introduction of Novartis' Tilt in 1982, it has had around [80 to 90]* % market share in the years before the introduction of strobilurins. The other players were Bayer (Bayfidan), Aventis (Sportak) and BASF (Corbel). A competitor indicated that at the time there were only two major fungicide products registered, namely fenpropimorph (shared between Novartis and BASF) and propiconazole (Novartis only), Novartis succeeded in blocking sales of BASF's straight fenpropimorph by launching the fenpropimorph/propiconazole mixture. In 1997, Bayer's Folicur (tebuconazole) obtained registration, eight years after the application for registration was made. Folicur achieved a market share of around [5 to 10]* % in 1998, but sales dropped considerably in 1999.

(182) The introduction of Amistar in 1998 was extremely successful, capturing [40 to 50]* % of the market in two years. BASF introduced its KM + fenpropimorph mixture Mentor in 1999, but realised sales considerably below those of AstraZeneca the previous year. Furthermore, it is not expected that the KM + epoxiconazole mixture will be registered in any of the Nordic countries. On the other hand, AstraZeneca has not made use of its registration of Amistar Pro in 1998 and 1999.

(183) Novartis' leading product, Tilt Top (propiconazole + fenpropimorph), has lost considerable sales

volume which was only partly compensated by the introduction of the new cyprodinil + propiconazole mixture (Stereo) in 1999. However, Novartis remains the clear number two producer on the Danish market with its triazole + morpholin product portfolio. It may be noted that the possibility for a tank-mixture between Amistar and Tilt is considered as […]*. The merger thus auomatically eliminates this […]*.

The other cereal fungicide markets

(184) The parties also estimate that they are probably market leaders in Spain, but this is not confirmed by the market investigation. In Ireland, the parties lost their market leadership ([40 to 50]* % in 1998) to BASF in 1999. In all other countries, BASF is the market leader or the parties have at most around [20 to 30]* % market share. The highest market share is in Austria with [30 to 40]* %, where Bayer has [20 to 30]* %.

New products

(185) As was indicated in recital 139, the only new strobilurin-based products from now until the end of 2003 will come only from the merged entity and BASF. Novartis is currently introducing its new strobilurin, trifloxystrobin, on the EEA markets. AstraZeneca has the new strobilurin picoxystrobin under development, the first second generation strobilurin, to be launched in […]*. Both parties' internal documents indicate that they expect that BASF will launch in 2002 its second generation strobilurin, BAS500F.

(186) No new non-strobilurin active substance is expected to reach any of the EEA cereal fungicide markets before […]*. The only new products will be mixtures of existing active substances and some new launches of existing products in other countries.

Overview of current market shares

(187) The following table provides an overview of the market shares in 1998 and 1999 of the merged entity and BASF on the overall cereal fungicide markets. This overview is provided for the EEA and for the six national markets of concern: France, Germany, the United Kingdom, Denmark, Sweden and Finland.

(%)

	All cereal fungicides			
	1998		1999	
	Syngenta	BASF	Syngenta	BASF
EEA	[30-40]*	[30-40]*	[30-40]*	[30-40]*
FR	[40-50]*	[30-40]*	[30-40]*	[30-40]*
DE	[30-40]*	[40-50]*	[30-40]*	[30-40]*
UK	[30-40]*	[30-40]*	[30-40]*	[30-40]*
DK	± [60-70]*	±[10-20]*	± [70-80]*	±[10-20]*
SV	[90-100]*	[0-5]*	[80-90]*	± [5-10]*
FIN	[60-70]*		[80-90]*	

Expected future market shares

(188) As indicated above, it is beyond doubt, in view of the estimated sales of Novartis' strobilurin in the United Kingdom, that in 2000 the merged entity will be the market leader in the United Kingdom as well.

(189) For AstraZeneca's Amistar, the marketing year 1999 to 2000 will be the first for which there will be no supply shortage problems. In previous years, capacity for manufacturing Amistar was limited, which resulted in the allocated amounts for some of the countries being sold in an extremely short time. The sales of Amistar so far are, therefore, below the potential of the product. As to France, AstraZeneca expects for the 1999/2000 year to increase its overall market share by […]* to obtain a […]* market share, entailing an increase in sales of Amistar, Amistar Pro and Amistar Ter of around […]*. For the United Kingdom, it is clear from the 1999 marketing plan that the overall objective is to be […]*.

(190) Novartis' marketing plan foresees an overall […]* … share of the EEA cereal fungicide markets in 2003.

(191) Probably the highest-level overview of the parties' expected future market share in Europe in cereals comes from the document of September 1999, mentioned in the section on strobilurins, by which AstraZeneca's board was asked to agree to a picoxystrobin investment. The expected sales of BASF and Novartis are indicated in this same document in the following form:

EU Cereal Fungicide Market Shares — 2005

(%)

Strobilurins	Zeneca	BASF	Novartis	Others	Total sales
Early Wheat	[10-20]*	[10-20]*	[20-30]*		[…]*
Late Wheat	[40-50]*	[10-20]*	[0-5]*		[…]*
Barley	[20-30]*	[5-10]*	[10-20]*		[…]*
Sales (USD million)	[…]*	[…]*	[…]*		[…]*
Share of total cereal fungicides	[30-40]*	[10-20]*	[10-20]*		[50-60]*

(%)

Other fungicides	Zeneca	BASF	Novartis	Others	Total sales
Early Wheat	[0-5]*	[20-30]*	[10-20]*	[0-5]*	[…]*
Late Wheat		[5-10]*	[5-10]*	[20-30]*	[…]*
Barley		[10-20]*	[10-20]*	[10-20]*	[…]*
Sales (USD million)	[…]*	[…]*	[…]*	[…]*	[…]*
Share of total cereal fungicides	[0-5]*	[10-20]*	[10-20]*	[10-20]*	[40-50]*

(%)

Total fungicides	Zeneca	BASF	Novartis	Others	Total sales
Early Wheat	[20-30]*	[30-40]*	[30-40]*	[0-5]*	[…]*
Late Wheat	[40-50]*	[20-30]*	[10-20]*	[20-30]*	[…]*
Barley	[20-30]*	[20-30]*	[20-30]*	[10-20]*	[…]*
Sales (USD million)	[…]*	[…]*	[…]*	[…]*	[…]*
Total market share	[30-40]*	[20-30]*	[20-30]*	[10-20]*	

(192) The above overview gives the merged entity a combined market share of [50 to 60]* % for the overall cereal fungicide markets. It can be noted that another competitor foresees similar market shares for the merged entity for 2003. Furthermore, most competitors expect that strobilurin-based products will account for some 60 to 70 % of total sales. If, on the basis of this assumption, strobilurins were to account for [60 to 70]* % of total sales, the merged entity's market share of the overall cereal fungicide markets would rise by another [0 to 5]* %.

(193) The following table provides the forecast of future market shares of the merged entity and BASF on the overall cereal fungicide market for the EEA for the years 2000 to 2004. The table is based on the forecast sales that AstraZeneca, Novartis and BASF, respectively, have supplied to the Commission. The estimate for the total market size is that provided by BASF ([35]) […]*.

([35]) Only Novartis and BASF have provided estimates for the total EEA market, and BASF's estimate for 2000 comes closest to the total market value resulting from the market investigation for 1999. Only BASF has provided estimates for the national markets. Even for Germany and the United Kingdom the 2000 estimate is relatively close to the 1999 market value emerging from the Commission's market investigation. This is not the case for France, where BASF's estimate for 2000 is considerably below sales in 1999. However, for consistency reasons, the estimate is used.

(%)

EEA	Syngenta	BASF
2000	[40-50]*	[20-30]*
2001	[50-60]*	[20-30]*
2002	[50-60]*	[30-40]*
2003	[50-60]*	[30-40]*
2004	[50-60]*	[30-40]*

(194) It can be seen from the above table that for each of the years, the merged entity would have a lead of at least [10 to 20]* % from 2000 onwards, compared to a lead of [0 to 5]* % in 1999.

(195) According to the same methodology, the result for France, Germany and the United Kingdom is as follows ([36]):

(%)

	France		Germany		UK	
	Syngenta	BASF	Syngenta	BASF	Syngenta	BASF
2000	[50-60]*	[30-40]*	[40-50]*	[30-40]*	[50-60]*	[30-40]*
2001	[60-70]*	[30-40]*	[40-50]*	[30-40]*	[60-70]*	[20-30]*
2002	[60-70]*	[30-40]*	[50-60]*	[40-50]*	[60-70]*	[30-40]*
2003	[60-70]*	[30-40]*	[50-60]*	[40-50]*	[60-70]*	[40-50]*
2004	[60-70]*	[30-40]*	[50-60]*	[40-50]*	[70-80]*	[40-50]*

(196) It is apparent from the above table that on each of the national cereal fungicide markets, the merged entity will the clear market leader in 2000 with a lead of between 11 and 23 percentage points. This lead will only grow further in each of the three countries.

(197) As indicated above, the methodology used is based upon the estimate of the total market as provided by BASF and expresses the merged entity and BASF's sales projections in the form of a percentage of this estimate. Using this estimate, the total of each parties' projections can be above [90 to 100]* %. However, the advantage of this estimate is that the relative strength of each company is expressed as a function of one input-element. The Commission has also calculated future market shares on the basis of projections of all major R & D-based competitors. In this scenario, the total estimated market size is the sum of each company's own projections. Also on this basis the merged entity would have a market share of [40 to 50]* % in Germany, [40 to 50]* % in France and [50 to 60]* % in the United Kingdom. BASF would account for [30 to 40]* %, [20 to 30]* % and [30 to 40]* % respectively. The merged entity would thus have a market share lead of between some 10 and 25-plus percentage points.

(198) The above large market shares strongly suggest that the notified operation will lead to the creation of a dominant position in the cereal fungicide markets. This conclusion is corroborated by the fact that Syngenta's large portfolio of strong strobilurin and non-strobilurin-based fungicides will allow it to pursue product portfolio strategies that no competitor can match and that will, in fact, enable Syngenta to exploit its dominant position. These latter arguments will be developed in the following sections.

([36]) The data available to the Commission does not allow a similar projection for the Nordic countries to be made.

Product portfolio strategies

(199) The above overviews of the actual and future market shares and product introductions are based on assessments of the situation prior to the merger and, therefore, on assessments of competition between three companies offering strobilurin products and each having their own non-strobilurin products. They do, therefore, not take into account the benefits that the merged entity can derive from combining the products of Novartis and AstraZeneca.

Past examples

(200) As an illustration of the possibilities that portfolio management can offer a company on the European cereal fungicide markets, reference is made to the previously described situation on the Danish market several years ago. The two major products registered were propiconazole and fenpropimorph based. Novartis had products with both active substances, whilst BASF had fenpropimorph. By a mixture of the two substances, Novartis managed to capture a large market share to the detriment of BASF's previous position.

(201) Reference is also made to the position on the German market, described above, where the agreement between Zeneca and Novartis to recommend tank-mixing between azoxystrobin and fenpropidin-based products enables the companies to offer the most attractive mixture to the detriment of the other companies' mixture candidates based on fenpropimorph or quinoxyfen (powdery mildew segment).

Withdrawal of straight strobilurin products

(202) There is considerable scope for the merged entity to leverage its position further by the withdrawal of straight strobilurin or, at least, not launching any new straight strobilurins. This is possible if the in-house pre-formulated mixtures provide for full disease control and allow proper resistance management.

(203) It has been described above how, unlike BASF, AstraZeneca's overall portfolio did not offer a lot of scope for the development of such mixtures, so that it was in the overall interest of AstraZeneca to offer azoxystrobin straight. In view of the success of azoxystrobin, it was quite important for the other producers with some good mixing partners to be able to use this possibility. In this respect, reference may be made to Bayer's products Pronto and Pronto Plus (tebuconazole and spiroxamine) and Aventis' Flamenco (fluquinconazole). From the Table giving the overview of the active substances' respective strength (recital 115), it can be seen that the strength of a mixture between Amistar and Flamenco could be replaced by a pre-formulated mixture of azoxystrobin and Novartis' cyproconazole. The strength of Bayer's Pronto/Plus could also to a large extent be replaced by a combination of cyproconazole and one of the morpholins. Only with respect to Fusarium Roseum does the merged entity seem to be lacking a top product. In this segment, tank-mixing remains necessary. It can, however, be noted that the best strategy for avoiding a fusarium roseum-risk is to plough the field if the previous crop was maize and to sow less sensitive varieties. ([37]).

(204) In their reply, the parties have stated that the merged entity will be obliged to continue selling azoxystrobin straight because of its spectrum primarily as a straight product, competing as such directly with mixtures. Other reasons given by the parties relate to the farmers' preferences for tank-mixing, the cost penalty of mixtures, the resulting loss in market share and the fact that the development of a new pre-formulated mixture requires three to four years for development and registration.

(205) The Commission acknowledges the time-lapse that is required before new mixtures could be brought on the market. However, in a competitive environment where the only other strobilurin producer (BASF) does not offer its strobilurins straight and where the merged entity has a portfolio of possible mixing partners, this may be a viable course of action. It may be noted that the parties' arguments presuppose a straight strobilurin alternative for the farmer, which there would no longer be if the merged entity were to decide so.

Halting the collaboration with competitors over mixtures

(206) […]* It would be in the economic interests of Syngenta to stop this cooperation, as the product clashes with Syngenta's internal products. It may be noted that

([37]) See article of Dr. Manfred Bartels, o.c. and Perspectives agricoles, février 2000.

picoxystrobin would also bring the excellent powdery mildew control that is achieved with quinoxyfen. In addition, one of the morpholins could be added with a view to resistance management.

(207) It is also conceivable that it would not necessarily be in the long-term interests of the merged entity to prolong the supply agreement of azoxystrobin to Bayer for its Nordic mixture with spiroxamine. By the time the agreement ends, picoxystrobin can be expected to be on the market, a substance that controls powdery mildew even better.

Introduction of new combinations — Syngenta portfolio

(208) In the European cereal fungicide markets, generally open to new products, the Syngenta portfolio offers ample scope for introducing new, potentially very successful mixtures to enhance sales further, in addition to the mechanisms described above. The merged entity would have today 31 different formulations on the market. According to a competitor, 12 additional new combinations can be envisaged, of which 10 are only feasible following the merger. They are, mixtures between, on the one hand, azoxystrobin and picoxystrobin respectively (both AZ) and, on the other hand, respectively propiconazole, cyproconazole, fenpropidin, cyprodinil and acibenzolar-S-methyl. […]* ([38]).

(209) The parties have stated that a mixture of azoxystrobin and cyprodinil would require a full dose of cyprodinil to control eyespot and thus make it a very expensive solution for the farmer. It is argued that a farmer would use a more economic strobilurin + prochloraz solution. In addition, a triazole would have to be added to ensure a sound resistance strategy and obtain the benefit of curative activity, further adding to the costs. Additionally, there are indications of loss of efficacy when formulating mixtures of strobilurines with cyprodinil. These arguments can be doubted, as Novartis has recently launched a mixture of cyprodinil and its triazole cyproconazole where cyprodinil is not at 'full dose', and an addition of a strobilurin to this would be an appropriate 'all-in' T1 product. It is true that prochloraz is cheaper than cyprodinil and that the ITCF is studying the possibility of having one half cyprodinil plus one half prochloraz. On the other hand, the whole current marketing argumentation of Novartis is built around the idea that, compared to prochloraz, cyprodinil offers good value for money (it costs more, but this is more than compensated by the higher margin due to better disease control).

(210) As was observed above, it is only with respect to fusarium roseum that the parties appear to have a weakness in their portfolio. For all the other diseases, their products are already part of the 'best in class' mixture ([39]) and the position of other parties' products can be weakened by new in-house formulated products as well as by the introduction of the new strobilurins.

Distribution

(211) The merged entity would have two campaigns before BASF's new product is expected. This allows full advantage to be taken of the perceived weakness of BASF's current strobilurin portfolio. Furthermore, the merged entity would introduce at the same time as BASF an even stronger new product (picoxystrobin). In such a situation, the merged entity could implement AstraZeneca's distribution method for Amistar in France or similar mechanisms. This might, for the same reasons as in France, be attractive to the distribution chain (guaranteed margin, access to new products, distinguishing element from competition). And, with two leading strobilurins, the two leading distributors (in a country or region) could each receive an exclusive product. Even if no exclusivity were to be given for a strobilurin molecule portfolio, the numerous mixtures would allow the merged entity to give the leading distributors each a 'unique' product in their region or country.

(212) A similar mechanism could accord with the strategy devised by Novartis in the United Kingdom to reward the distributor in achieving an important minimum expenditure for each farmer it services on Novartis products. Such mechanisms, which are not necessarily limited to fungicides, all have the potential to succeed by virtue of the larger overall portfolio of the merged entity and its global weight on the market.

(213) Cereal fungicides are one of the most important markets for the profitability of the distributors in all Member States. A close cooperation with the merged entity will

([38]) […]*

([39]) See Journée UIPP, fongicides céréales, 12 octobre 1999, 'Traitements et interventions de printemps'.

allow them to maintain their margin. Therefore, rather than attempting to use any countervailing power that they might have, the distributors can be expected to pass-on a price increase to the farmer.

Consequences for other competitors

(214) The other non-strobulurin producing companies will not be in a position to challenge the parties' position. As was indicated above, the merger will allow the parties to reduce even further the market opportunities open to these companies, by withdrawing straight strobilurin products and developing in-house formulated products.

BASF's position

(215) In the abovementioned September 1999 Picoxystrobin board document, AstraZeneca indicates, discussing picoxystrobin's price, that: […]*

(216) BASF's future sales prospects confirm [BASF business secret]* There are, however, some doubts as to the magnitude of the future success of its new products. It is clear from AstraZeneca's own test results that its new strobilurin is superior to BASF's product. On the other hand, [BASF business secret]* its sales forecast might not have taken into account this element.

(217) On the basis of AstraZeneca's own assessment and the above considerations as to BASF's future sales, it may be concluded that it would not be in the interests of BASF to challenge the merged entity's position; rather BASF would follow the price leadership of the merged entity. Furthermore, the merged entity has, with multiple strobilurin options, the chance to position one of its strobilurin mixtures vis-à-vis BASF current KM-based products and can thus retaliate effectively if necessary. The reverse is not directly possible.

Conclusion

(218) Strobilurin-based fungicides are the key drivers of the European cereal fungicide markets. As was observed above, there are strong indications that they may even constitute separate markets. Strobilurins account for half of the sales of all cereal fungicides, and this is expected to increase further. Prior to 2000, there were only two strobilurin competitors: BASF and AstraZeneca. BASF is, EEA-wide, rapidly losing its market leadership. Where in 1997, BASF had [60 to 70]* % of the market, it has [50 to 60]* % in 1999. Novartis is now launching its new strobilurin.

(219) Without the merger, competition would have developed between the three companies on the basis of their innovative products. As a consequence of the merger, one of these innovators is removed from the market which may reduce the incentives to further innovate. In any event, the merger will bring together two out of only three strobilurin producers and will reduce the competition that would otherwise have developed with the existing and immediate pipeline products.

(220) The 1999 situation is not representative of future development. As early as 2000 the merged entity's combined sales will exceed those of BASF. First, the year 2000 is the first year in which there will be no more capacity constraints on AstraZeneca's strobilurins. Secondly, in view of the perceived weakness of BASF's products, a decline in sales for these products is expected. Thirdly, Novartis is launching its new strobilurins and expects considerable sales from this product.

(221) The merged entity will be able to increase its market leadership because of the introduction of a new strobilurin (AstraZeneca's picoxystrobin). Products based on this substance will be technically superior to BASF's new strobilurin products. No new products of competitors are expected to reach the market before 2004. On the basis of AstraZeneca's own market estimates, the merged entity would account for over [60 to 70]* % of Community strobilurin-based cereal fungicide sales by […]*. On the basis of the sales projections of each of the companies, this would be less. However, the biggest cause for the difference between these two figures relates to AstraZeneca's own figures.

(222) On the overall cereal fungicide markets, the merged entity was the EEA market leader even in 1999, with almost [30 to 40]* %. This is also the case on the French and German markets. In the United Kingdom, BASF maintained a very small lead in 1999, but, it is beyond doubt, in view of the estimated sales of Novartis' strobilurin in the United Kingdom, that the merged entity will be the market leader in 2000 in the United Kingdom as well. In Denmark, Sweden and Finland the merged entity is the clear market leader

with market shares above [70 to 80]* %. In view of the increasing importance of the strobilurin-based cereal fungicides on the whole cereal fungicide market and the parties' consequent position (see above), the merged entity will, according to AstraZeneca's estimate, reach a market share of [50 to 60]* % in the Community in […]*. On the basis of two other methodologies with regard to sales forecasts, it also follows that the merged entity will become the clear market leader. One methodology indicates a lead of between 11 and 23 percentage points in […]*, which will be further increased in later years. Another gives the merged entity market shares in […]* of [40 to 50]* % in Germany, [40 to 50]* % in France and [50 to 60]* % in the United Kingdom and a lead of between some [10 to 30]* % percentage points over BASF.

(223) The merged entity has the ability to leverage its position further by means of strategies that are feasible and make economic sense. Such strategies are, for example, the withdrawal of straight strobilurin products (containing only strobilurin active substance) and their replacement by formulated products with substances of other chemical classes within the merged entity's product portfolio. As a consequence, other competitors will lose the opportunities they currently have to sell their non-strobilurin products as a tank-mix partner with AstraZeneca's straight strobilurin. Another strategy is to expand AstraZeneca's French distribution strategy of selective distribution for its strobilurin product to other Member States, thereby ensuring the loyalty of the distributors. It also appears from the market investigation that BASF would not be in a position to challenge the merged entity; rather, would it follow the price leadership of the merged entity. The Commission considers, for the above reasons, that the notified operation would lead to the creation of a dominant position on the cereal fungicide markets in France, Germany, the United Kingdom, Denmark, Sweden and Finland.

SUGAR BEET FUNGICIDES

Technicalities

(224) The main diseases in sugar beets are powdery mildew (erisyphe), rust (both also common in cereals), cercospora (a disease unique to sugar beets) and ramularia (a disease also found in vegetables). The diseases start to develop during different periods in the growing season with powdery mildew followed by cercosporiose, followed by ramularia and rust. When powdery mildew develops, typically two treatments will be necessary. In its absence, one treatment might suffice. Most of the registered fungicides treat all diseases, but their efficacy may differ.

(225) The fungicide treatment is highly influenced by the technical advice given by independent institutes such as the ITB in France and the KBIVB-IRBAB in Belgium. In Greece, the farmers are contractually obliged to follow the recommendations of the Hellenic Sugar Industry, which purchases the products by international tender.

EEA description

(226) In 1997, the total sales of sugar beet fungicides in the EEA accounted, according to the parties, for EUR […]*, with Novartis having a [40 to 50]* % share and AstraZeneca [10 to 20]* %. DuPont has [10 to 20]* % and Aventis [5 to 10]* %. In 1998, the parties estimated total sales of EUR […]*. Novartis has [40 to 50]* %, AstraZeneca [10 to 20]* %, Dupont [10 to 20]* % and Aventis [0 to 5]* %. For 1999 ([40]), total sales are estimated at EUR […]*, with Novartis accounting for [40 to 50]* %, Dupont [10 to 20]* %, AstraZeneca [5 to 10]* %, Sipcam [0 to 5]* %, Aventis and BASF [0 to 5]* %. It may be noted that the parties' market estimates do not identify the companies responsible for sales accounting for around [10 to 20]* %.

(227) The most important national market is France, with sales of EUR […]* in 1998 and EUR […]* in 1999, followed by Italy (EUR […]*), Spain [(EUR […]* million in 1998, […]* million in 1999 and Germany (EUR […]*). There are no sugar beet fungicides used in Finland, Sweden, Norway and Iceland. In the other EEA states, sales are all below EUR […]* reaching a minimum of EUR […]* in Denmark in 1999).

The parties' products

(228) Novartis' current portfolio consists of nine branded products; of which five are straight products with the active substances cyproconazole (Alto), difenoconazole (Score/Bardos), propiconazole (Tilt), sulphur (Thiovit)

([40]) The 1999 data, provided in reply to a questionnaire, seem to be based on a different methodology than the information contained in the CO form. This applies to all the 1999 data given in this sugar beet fungicide part.

and thiabendazole (Tecto). There are four mixtures, namely cyproconazole + carbendazim (Alto Combi), cyproconazole + fentin acetate (Alto Bs), difenoconazole + fenpropidin (Spyrale) and difenoconazole + propiconazole (Armure). Novartis sells its products in all the 'sugar beet countries'. Contrary to the information in the CO Form indicating that 'Novartis has no pipeline products for this market', the market investigation shows that Novartis intends to launch its new strobilurin, trifloxystrobin, in a mixture with cyproconazole. First sales are expected for […]* in France and Italy and for […]* in Belgium, Greece, the Netherlands and Spain. Novartis indicates that 'total yield and sugar yield (of the mixture) have been similar to current standard treatments'. Nevertheless, it is clear from the trifloxystrobin marketing plan that important sales are expected, accounting for some[…]* of the total EEA market value. Moreover, the plan reveals that Novartis considers its current leading EEA position […]* to be sustainable over the long term as it plans to have […]* ([41]).

(229) AstraZeneca has four products containing flutriafol (one straight and three mixtures of different combinations with carbendazim) of which at least one is sold in, respectively, Belgium, France, Greece, Italy and Spain. In Greece it has additional marginal sales of a chlorothalonil based product. AstraZeneca is due to launch azoxystrobin (Amistar) for sugar beets in […]* (according to the CO Form) or […]* (according to a reply to a questionnaire) in Austria, Italy, Germany and Greece. […]*.

(230) The merger creates an overlap of currently sold products in France, Italy, Spain, Greece and Belgium. For the reasons indicated below, the Commission considers that the merger will lead in all these countries with the exception of Greece, to the creation of a dominant position.

France

(231) According to the parties, the merged entity would have market shares of [70 to 80]* % in 1997 (N [50 to 60]* % + AZ [10 to 20]* %), [70 to 80]* % in 1998 (N [60 to 70]* % + AZ [5 to 10]* %) and [60 to 70]* % in 1999 (N [50 to 60]* % + AZ [10 to 20]* %). The next competitor is Dupont with estimated market of respectively [10 to 20]* %, [10 to 20]* % and [10 to 20]* %. Sipcam has a [0 to 5]* % market share in 1999. It may be noted that the parties' estimates of 1997 and 1998 do not identify the producer(s) accounting for some [0 to 5]* % of the total market. For 1999, the parties' figure of 'unidentified' sales is [10 to 20]* %.

(232) According to the ITB (Institut Technique Français de la Betterave Industrielle), the merged entity would have a 1998 market share of [60 to 70]* % (N [50 to 60]* % + AZ [10 to 20]* %) and [50 to 60]* % in 1999 (N [50 to 60]* % + AZ [5 to 10]* %). In 1998, Dupont would have a [20 to 30]* % market share (no information given for 1999). These estimates are based upon some 500 replies that the Institute receives out of 2000 questionnaires sent out to French sugar beet farmers.

(233) However, the parties' (higher) estimates for their own market shares have been confirmed by competitors, and it is noteworthy that according to AstraZeneca's own figures, its sales of the Anterès product (where the ITB estimates a 0 % market share) are higher than the sales of Impact to which the ITB attributes AstraZeneca's total market share.

(234) The parties' strength can also be seen from the recommendations given by the ITB. For the 1999 season, the ITB recommended five different products for a single-treatment programme (used in some [10 to 20]* % of cases). Three of these products were from Novartis, one from AstraZeneca and one from Dupont. For the double-treatment programme (used in some [70 to 80]* % of cases), the ITB recommended four products to choose from for each treatment and recommended to alternate the products. Out of the four T1 products, two were from Novartis, one from AstraZeneca and one from Dupont. Out of the four T2 products, three were from Novartis and one from Sipcam.

(235) For the recommendations for use in the year 2000, out of the five 'single treatment' products, two are from Novartis, two from Dupont and one from AstraZeneca. For a two spray programme, out of the five T1 products, two are from Dupont and one a piece from Novartis, AstraZeneca and BASF. Out of the four T2 products, three are from Novartis and one from Sipcam. However, two Novartis products are recommended 'with priority'. Other products that are on the market, and that are not recommended at all, are Aventis' Castellan S, Antarès (AstraZeneca), sulphur products (accounting for [5 to 10]* % total sales according to the ITB, used as a cheap powdery mildew treatment with very good efficacy but only average persistence) and Microthiol spécial (TotalElf).

(236) Two new products are introduced on the French market and included in the 2000 recommendations summarised

([41]) […]*

above. These products are BASF's Monnaie (epoxiconazole + fenpropimorphe, identical in formulation to a product called 'Opus Team' in cereals) and Dupont's Initial (flusilazole + fenpropimorph, available in cereals with different formulations, but in the same proportion). It can thus be expected that Dupont may gain market share and that BASF will achieve, for the first time, some sales on the French sugar beet fungicide market. It must be noted, however, that BASF's product is the most expensive on the market without achieving the best effect on powdery mildew, the key target disease for the T1 spray for which it is recommended. The best effect on powdery mildew is given by Novartis' Spyrale, overall the best product on the market. Compared to the other T1 recommendations, Punch CS is of similar quality but available at half the price. Dupont's new product Initial has exactly the same efficacy and persistence as its older product, Punch CS. However, it is [5 to 10]* % more expensive, but still in the 'low price' segment.

(237) The ITB considers BASF's KM + epoxiconazole mixture to be the most important product to enter the French market before 2005. In tests, it provided excellent results on powdery mildew and rusts and good efficiacy on cercosporiose (ramularia is becoming rare in France).

(238) However, Novartis also expects to have its trifloxystrobin + cyproconazole mixture launched in France in […]* with expected sales in that year of EUR […]* million and EUR […]* million in […]*, giving it a [10 to 20]* % market share. The mixture provides comparable activity to the current market standards. AstraZeneca has indicated that it does not intend to develop its strobilurins in France. […]* In addition, as a consequence of the merger, azoxystrobin could be combined with any of the other Syngenta triazoles (such as cyproconazole).

(239) Novartis thus has a consistently high market share (above [50 to 60]* %) and, according to its own documents, this market share is sustainable over the long term in view of the expected success for its trifloxystrobin mixture.

(240) The merged entity will thus combine Novartis' strong position with the addition of the third largest producer (having more than a [5 to 10]* % market share) with well-established products on the market and with a new active substance (azoxystrobin) that, in combination with one of the triazoles of the merged entity, can also be expected to be a strong product. This allows the merged entity to develop similar distribution techniques as indicated above for cereal fungicides.

(241) Therefore, the Commission considers that the operation will lead to the creation of a dominant position on the French sugar beet fungicide market.

Italy

(242) As was indicated above, Italy is the second most important national market, with sales in 1997, 1998 and 1999 of respectively EUR […]*. Syngenta's products would, for the years 1997 to 1999, account for respectively [60 to 70]* % (N [20 to 30]* % + AZ [20 to 30]* % + [10 to 20]* % Novartis' products distributed by Aventis), [50 to 60]* % (N [20 to 30]* % + AZ [20 to 30]* % + [5 to 10]* % Novartis' products distributed by Aventis) and at least ([42]) [50 to 60]* % (N [30 to 40]* % + AZ [10 to 20]* % ([43])).

(243) The rest of the market is scattered between several local and international producers such and Sipcam with [5 to 10]* %, Isagro [5 to 10]* % , Dow [5 to 10]* % , Bayer [0 to 5]* %, Siapa [0 to 5]* % , Dupont [0 to 5]* % and Caffaro [0 to 5]* %.

(244) According to Novartis' own marketing plans, the merged entity's strong position cannot be challenged by the introduction of new competing products. Novartis expects […]* the sales in Italy of its difenoconazole based products between 1999 and 2002 (from […]*) to account for over [10 to 20]* % of the total market. […]* Novartis' trifloxystrobin mixture, replacing the cyproconazole based products, will account for another [10 to 20]* %. Therefore, Novartis expects to maintain its[…]* market share. Even if AstraZeneca's flutriafol based products were to lose some of its [10 to 20]* % market share, this can be expected to be offset by the introduction of Amistar, and, […]* or a current Novartis' triazole.

(245) The Commission, therefore, considers that the merger will lead to the creation of a dominant position on the Italian sugar beet fungicide market.

([42]) Novartis indicates that Aventis has sales of [5 to 10]* % in 1999 that could, totally or partly, result from the sales of Novartis products.

([43]) Calculated on the basis of using AstraZeneca's reply to the questionnaire and multiplying this with the same factor ([20 to 30]* % increase) as results from the correlation between the AZ reply for 1998 and the data in the CO Form.

Spain

(246) According to the parties, the Spanish market was worth, in the years from 1997 to 1999, between […]*. Novartis is increasing its market share: [20 to 30]* % in 1997, [30 to 40]* % in 1998 and [30 to 40]* % in 1999. AstraZeneca's share has been stable at around [10 to 20]* %. The merged entity would thus account for some [40 to 50]* % of the market.

(247) Novartis' increase has been at the expense of Dupont that lost [5 to 10]* % market share (from [20 to 30]* % to [10 to 20]* %). For the remaining [30 to 40]* % of the market, no producer has been identified by the parties. It appears from the market investigation that Bayer and Cyanamid have each around [0 to 5]* % market share.

(248) Novartis also plans to introduce its trifloxystrobin mixture in Spain in […]*, but no sales estimates are available. However, further progress is expected from its dinenoconazole based products, which are expected, by themselves, to account for a [20 to 30]* % market share by […]*. In addition, the other existing products would still represent almost [5 to 10]* % in […]*. Thus, even without taking into account the sales of trifloxystrobin, Novartis considers that it will maintain a [30 to 40]* % market share over the longer term.

(249) The merged entity would thus hold over the longer term, with its existing products alone, around [40 to 50]* % of the market, namely [30 to 40]* % accounted for by Novartis and the remainder with sales of AstraZeneca's existing product (that accounts currently for some […]*). In addition, Novartis will launch its trifloxystrobin mixture. This can, in keeping with the expectations for other Member States, be considered to account for at least […]* of the total market […]*. In addition, the merged entity will have the possibility to evaluate the potential for mixtures of azoxystrobin with one of Novartis' successful molecules.

(250) On the basis of the merged entity's ability to maintain its current market share of some [50 to 60]* %, the Commission considers that the merger will lead to the creation of a dominant position on the Spanish sugarbeet fungicide market.

Belgium

(251) The Belgian market accounts for EUR […]* and the market investigation has confirmed the strength of the parties to the merger on this market. According to the parties' estimates, Novartis has a market share of [30 to 40]* % (1997), [40 to 50]* % (1998) and [40 to 50]* % (1999). AstraZeneca has increased its market share from 1997 to 1998 from [30 to 40]* % to [30 to 40]* %. The 1999 data, provided by Novartis (on behalf of both parties) do not attribute sales in Belgium to any other identified competitors (all being 'unidentified'). From AstraZeneca's sales figures for 1999, a market share of at least [20 to 30]* % can be deduced. The merged entity would thus account for a market share of [60 to 70]* % in 1997, [80 to 90]* % in 1998 and at least [60 to 70]* % in 1999.

(252) The only other competitors are Aventis and Dupont, with around [5 to 10]* % each in 1998.

(253) The strength of the merged entity is clear from the fact that it would have five (4N+1AZ) out of the seven available active substances on the market. This strength can be considered sustainable in view of the launch of the trifloxystrobin mixture in Belgium in 2003 with projected sales accounting for [40 to 50]* % of the total market. The Novartis marketing plan reveals […]*.

(254) The Commission, therefore, considers that the merger will lead to the creation of a dominant position on the Belgium sugar beet fungicide market.

FUNGICIDES FOR VEGETABLES

(255) There are some 30 vegetable crops but the diseases affecting those crops and/or the products used to treat these diseases are broadly similar.

(256) The parties estimate that total EEA sales account in 1998 for EUR […]* and Syngenta has an EEA wide market share of[…]* [20 to 30]* % (N [10 to 20]* % + AZ [5 to 10]* %). The largest national markets are, according to the CO Form, Spain […]*, Italy […]* and France[…]*.

(257) According to the CO Form, the 1998 French market is worth EUR […]* with Syngenta accounting for [30 to 40]* % (N [10 to 20]* % + AZ [10 to 20]* %) […]* and Aventis […]* [30 to 40]* %. It can be noted that the competitors have presented substantially different estimates for the total market and for the market shares and that the parties' estimates for the 1999 market differ considerably: Novartis estimates that the French market accounts for EUR […]* (N [10 to 20]* % + AZ

[5 to 10]* %) and AstraZeneca estimates a market size of EUR […]*, giving itself […]* [10 to 20]* % (no estimate being provided for Novartis).

(258) More detailed information on this market is found in an internal AstraZeneca document of January 2000 that prepares the launch of AstraZeneca's azoxystrobin in the French vegetable market (brand name Ortiva). This document gives (on the basis of panel data for the years from 1996 to 1998) the following overview of the 'competitors in value': […]*.

(259) According to this document, the 10 most important brands account for [70 to 80]* % of total sales and seven of these are distributed by the parties, four by Novartis and three by AstraZeneca. The Novartis brands are the leading brand (Acylon) and the numbers three (Pulsan), six (Score) and seven (Dithane). The AstraZeneca brands are the numbers five (Sumisclex), eight (Orzin) and nine (Sumico). BASF has the second brand (Ronilan) and Aventis the fourth (Rovral). In the reply, the parties state that the estimate for the size of the total market underlying the figures presented in this document are too low and that this has been confirmed by the assessment of an independent French company.

(260) As to the introduction of new products, AstraZeneca will introduce azoxystrobin under the brand name Ortiva, from February 2000 onwards in more and more vegetable crops. It expects to achieve [20 to 30]* % market share in nearly all crops and [10 to 20]* % for the crops where botrytis is an issue. Overall, this should give Ortiva a market share of [20 to 30]* %. As with all strobilurins, resistance management is an issue. Accoridngly, Ortiva needs to be alternated with other substances (Ortiva can be used for two sprays at most). The broad portfolio of the merged entity gives the opportunity to combine the strength of Ortiva (its wide range) with Novartis strong triazole fungicides. If the projected future sales are expressed as a percentage of the 'corrected' current market size, Ortiva would account for some [10 to 20]* % in […]*.

(261) The potential of newly introduced products of the competitors is rather limited. [Competitors business secrets]*.

(262) Novartis' marketing plans estimate that its products would have a [20 to 30]* % market share in […]*. AstraZeneca would add Ortiva (accounting for some [10 to 20]* %) and its current portfolio for which it has not supplied a projection of the sales potential.

(263) The Commission does not need to decide on the basis of this evidence whether the notified operation would lead to the creation of a dominant position, since any competitive problems would be removed as a result of the implementation of the commitments submitted for the French market to treat botrytis on grapes.

SWEDISH POTATO FUNGICIDE MARKET

(264) According to the CO form, the Swedish market for potato fungicides accounts for a turnover of EUR […]* in 1997 and […]* in 1998. In 1997, AstraZeneca accounted for [60 to 70]* % of the market with fluazinam and Novartis had [20 to 30]* % with Ridomil (metalaxyl + mancozeb). Aventis had [5 to 10]* % with its newly launched Tattoo (propamocarb + mancozeb), and American Cyanamid launched a new product, Acrobat MZ (dimethomorph + mancozeb), realising [0 to 5]* %.

(265) In 1998 and 1999, Syngenta maintains a [80 to 90]* % market share (AZ [50 to 60]* % + N [20 to 30]* %). Both Aventis and American Cyanamid have a [5 to 10]* % market share each in these two years. The market investigation has confirmed these estimates.

(266) Even if AstraZeneca's market share has decreased, Novartis' market share has increased. The introduction of the products of Aventis and American Cyanamid in 1997 has thus not affected the parties' overall market share.

(267) Furthermore, in 2000 Novartis has launched a new product, Epok, its mixture of fluazinam and metalaxyl-M. The registration of its other product Ridomil MZ (a mixture between metalaxyl and mancozeb) […]*.

(268) Novartis has indicated that […]* The decision was, according to Novartis' reply of 28 March 2000, taken 'a few weeks ago', that is to say, after the announcement of the merger with AstraZeneca. It is therefore considered that the decision […]* may also be influenced by the proposed operation as the merged entity would have not so much to gain from […]* than Novartis competing with AstraZeneca.

(269) The parties have indicated that new products such as Dupont's famoxadone straight or mixed with cymoxanil, and Aventis' fenamidone, straight or mixed, have a similar ecotoxycological regulatory profile to fluazinam. However, it appears from the market investigation that the market shares of all the new products that competitors intend to have on the market

by 2003 are estimated to account by 2003 for less than [10 to 20]* %.

(270) In view of the high overall market share of the merged entity [80 to 90]* %; the substantial addition ([50 to 60]* % + [20 to 30]* %); the introduction in 2000 of a new Novartis product; and the limited market share expectations for new products to be introduced on the market between now and 2003, the Commission considers that the concentration will lead to the creation of a dominant position on the Swedish potato-fungicide market.

POWDERY MILDEW, DOWNY MILDEW AND BOTRYTIS FUNGICIDES ON GRAPES

(271) Grapes are treated with between seven and 15 fungicide sprays per season to control grape diseases. The most important markets for fungicides used on grapes are those for the treatment of downy mildew (sales in Europe of EUR […]*), powdery mildew EUR […]* and grey mould EUR […]*.

Downy mildew

(272) For downy mildew, Aventis is the EEA market leader with [20 to 30]* % and Syngenta would achieve [10 to 20]* % (N [10 to 20]* % + AZ [5 to 10]* %). On a national level, Syngenta's market share is below [20 to 30]* % in 1999 and its main active ingredients (metalaxyl from Novartis and azoxystrobin from AstraZeneca) realise sales considerably below formulations based on cymoxanil (Dupont) and ethyl phosphite alumunium (Aventis).

Powdery mildew in Austria

(273) For powdery mildew, Syngenta would be market leader at the EEA level with [30 to 40]* % (N [20 to 30]* % + AZ [5 to 10]* %) in 1998 and [20 to 30]* % (N [20 to 30]* % + AZ [5 to 10]* %) in 1999. In 1998, Atochem accounted for [10 to 20]* % and Aventis, Dupont, Bayer and BASF between [5 to 10]* % each. In 1999, Bayer had [10 to 20]* %, Atochem [5 to 10]* %, Aventis [5 to 10]* % and BASF, Dow and Dupont each below [0 to 5]* %.

(274) The only national market where Syngenta products would have more than [30 to 40]* % is the Austrian market EUR […]*, the smallest market for powdery mildew. In Austria, Novartis accounted in 1999 for [30 to 40]* % ([20 to 30]* % with the triazole penconazol and [5 to 10]* % with sulfur) and afaplant distributes Novartis' pyrenifox realising [5 to 10]* %. Kwizda distributes AstraZeneca's Quadris (azoxystrobin) and realised [5 to 10]* %. Syngenta substances thus account for [40 to 50]* % of the market.

(275) The closest competitor would be, according to the parties, Agrolinz, distributing BASF's products (Discus, containing the strobilurin kresoxim-methyl, and Kumulus, containing sulphur), with a [10 to 20]* % market share. RAG has [5 to 10]* % with a sulphur product, Cyanamid [5 to 10]* %, Bayer [5 to 10]* % (of which the spiroxamin product accounts for [0 to 5]* %) and Aventis [0 to 5]* %. Afaplant distributes another product, in addition to Novartis' pyrenifox, with which it realises [0 to 5]* %. In the reply, the parties indicate that Bayer's market share with its spiroxamin product was [10 to 20]* % in 1999.

(276) As indicated above, there are between seven and 15 sprays per season. In the interests of resistance-management, the number of sprays for several classes are limited to a given number per season. Such recommendations to limit use are made by the FRAC. With regard to powdery mildew in grapes, the recommendations are to limit the use of DMI's such as triazoles to four sprays per season. Also strobilurins should be limited to a maximum of two out of seven sprays, three out of eight to 11 sprays and four out of 12 or more sprays. Strobilurins should be preferentially alternated with fungicides of another class.

(277) The parties are in the unique position to be able to offer to the farmer sulphur, triazoles and strobilurins. Having a complete powdery mildew package enables them to use the spray limitations for the triazoles and strobilurins to their own benefit. This can be done, for instance, by using the strength of Novartis' Topaz, with [20 to 30]* % of the total market by far the most popular triazole, to push azoxystrobin, which is generally recognised as technically the weaker powdery mildew strobilurin compared to BASF's kresoxim-methyl. This is particularly feasible in Austria as azoxystrobin is currently as 'popular' as kresoxim-methyl ([5 to 10]* % market share each). For the remaining sprays, sulphur can be offered. In the reply, the parties indicate that because azoxystrobin is technically weaker than most of the powdery mildew products for vines available to growers, azoxystrobin would not be the first choice of growers that need to manage vine powdery mildew epidemics. They suggest that such a strategy could, therefore, not work for

azoxystrobin. However, such a strategy is explicitly envisaged by Novartis for the introduction of its trifloxystrobin[…]*, for which it plans to capture a [20 to 30]* % market share by 2005.

(278) The Commission considers that, in view of the high market share of the combined entity, the unique position for offering a complete powdery mildew package and the forthcoming introduction of trifloxystrobin, the merger will lead to the creation of a dominant position on the Austrian market for powdery mildew in grapes.

Botrytis

(279) Botrytis is, in value terms, the smallest of the three grape-disease markets, with EEA sales of EUR […]* in 1999. Syngenta would be market leader on the EEA level with [30 to 40]* % (N [20 to 30]* % + AZ [10 to 20]* %). Aventis accounts for [30 to 40]* %. The other (bigger) competitors are Cyanamid ([5 to 10]* %), Bayer [5 to 10]* %) and BASF [5 to 10]* %) .

(280) By far the largest national market is France EUR […]*, followed by Italy EUR […]*. The other national markets are Germany […]*, Spain […]*, Portugal […]*,Greece […]* and Austria […]*. Both parties' products are sold in France, Portugal, and Austria.

(281) For the reasons indicated at recitals 282 to 288, the Commission considers that the merger will lead to the creation of a dominant position on the French and Austrian market.

The French botrytis market

(282) The merged entity would account for [50 to 60]* % (N [20 to 30]* % + AZ [20 to 30]* %) of this […]* market. The next competitor is Aventis with [30 to 40]* %. Philagro, BASF and Bayer have each [0 to 5]* % or less.

(283) Out of the 10 products on the market, five will be distributed by the merged entity. Novartis sells straight fludioxonil (Geoxe) and fludioxonil mixed with cyprodinil (Switch). AstraZeneca sells third party substances, two of Sumitomo (Sumisclex and Sumico) and ISK's fluazinam for which it has acquired far reaching European distribution rights.

(284) Aventis sells two substances, being the market leader pyrimethanil (Scala) and iprodione (Rovral). The other competitors each sell one product. The parties argue that the main advantage of Aventis' pyrimethanil ([20 to 30]* % market share) is that it is granted an import tolerance status in the USA and that sales are still growing. However, such predicted growth will not be at the expense of at least Novartis' portfolio, as its internal marketing documents also foresee further growth. In addition, the recently introduced fluazinam is also expected to reach a [5 to 10]* % market share. It can, therefore, be concluded that the merged entity's market share is sustainable over the longer term.

(285) The merged entity will have a large product portfolio at its disposal. This will give Syngenta ample opportunities to position its products ideally vis-à-vis Aventis' two products. Furthermore, two of its products are recently introduced.

(286) In view of the combined high market share of the parties, the large portfolio of products, the fact that two of those products are recently introduced and have important chances for further growth, the Commission considers that the notified operation will lead to the creation of a dominant position on the French botrytis market.

The Austrian botrytis market

(287) Novartis is the clear market leader with its Switch brand accounting for [50 to 60]* %. Sales of AstraZeneca's chlorothalonil based product (Provin) by the Austrian formulator/distributor Kwizda account for another [5 to 10]* %. The merged entity would thus have [50 to 60]* %. The next competitor is Bayer with [10 to 20]* %, and Agrolinz, Aventis and Cyanamid each have below [5 to 10]* %. One competitor intends to introduce a new product before the end of 2003 on the market. However, no sales projections have been provided.

(288) Therefore, the Commission considers that the notified operation will lead to the creation of a dominant position on the Austrian botrytis market.

C.3 *HERBICIDES*

MAIZE HERBICIDES

Maize cultivation and weed control

(289) Maize cultivation is an important agricultural activity in Europe. An major factor in maize cultivation is the extent to which farmers are able to control the weed infestations that influence the crop yield. Unsuccessful or only partly successful treatments in maize cultivation could result in yield losses in the range of [20 to 30]* %. There are some factors specific to the maize crop that influence the way in which weeds can be controlled.

(290) The maize crop is a crop that develops slowly compared with the surrounding weed plants. In the early development stages of maize, therefore, these weeds have a particularly negative impact on maize growth, as they take lots of nutrients and sunlight away from the young maize crop. For this reason, the competition for nutrients and sunlight caused by weeds has to be eliminated, especially during the early development stages of maize.

(291) Soil and climatic reasons influence growing maize and the situation, spectrum and dynamics of the weed population and, hence, the use of herbicides. In the south of Europe, temperatures from the sowing date onwards will statistically provide a faster growing of the crop, so that the period in which it is critical for the farmer to control weed competition will be shorter. In such circumstances, pre-emergence treatment is an adequate way of controlling weeds. For this reason, a majority of farmers in countries like France and Italy adopt the practice of pre-emergence application of herbicides followed, if needed, by post-emergence herbicide application.

(292) In the north of Europe, the situation is slightly different. The northern regions are likely to get longer mid-warm periods from sowing onwards, resulting in a slower crop growth, longer periods before the crop covers the fields and an increased likelihood of 'reflushes' of weeds during this period. In such situations, early post-emergence treatments (before the appearance of four to five maize leaves) are optimal. As a result, in countries such as Germany and the Netherlands such early post-emergence treatments are practised to a considerable extent. Relying on later post-emergence treatments only is, however, not an option, as they would result in excessively high yield losses in maize cultivation. In the northern countries, the principal dividing line in maize is between early post-emergence products and post-emergence products in the strict sense of the term ([44]).

(293) The differences between maize herbicide programmes in the EEA countries are, in fact, also related to the registration status of the various active substances. Where the traditionally important and cost effective broad spectrum herbicide atrazine is still registered (France and Spain), it is used on the vast majority of maize fields, either straight or in mixes, to increase the performance of the treatment programme. Among the traditional graminicides, the acetalinides (metolachlor, alachlor, dimethenamid, acetochlor, flufenacet), alachlor is banned in Germany and Italy and acetochlor is registered only in Spain and France. Also, where atrazine is banned (Germany, Italy, the Netherlands, Denmark), growers tend to use more post-emergence products, in particular for broadleaf control.

(294) In general, it appears that in all of the major maize growing countries of Europe there is an increasing weed pressure and a growing diversity of weed infestations from annuals (grasses and broad leaf weeds) and perennials. As a result, the weed control strategies in maize are becoming more complex. Often, the strategies require the combined use of both pre- and post-emergence products to control both grasses and broad leaf weeds. Consequently, farmers tend to implement a broad non-focused weed-control strategy, on the basis of broad spectrum products and mixtures of different products.

European maize herbicide markets and parties' market shares

(295) The European maize herbicide market is a large market with sales accounting for EUR […]*. In the EEA, it is

([44]) This is also illustrated by the fact that the products used in early post-emergence treatments are often no different than the products used in pre-emergence treatments. This holds for example for the chemical class of acetanilides (alachlor, acetochlor, metolachlor, dimethenamid, flufenacet), which is commonly referred to as a pre-emergence herbicide class, although [10 to 20]* % is applied in early post-emergence treatments. Post-emergence treatments in the proper sense are typically applied from 4 to 10 weeks after planting. Typical products applied in post-emergence include sulcotrione, rimsulfuron and nicosulfuron.

the second most important herbicide market, after the market for herbicides in cereal crops. Within the EEA, three countries account for roughly [70 to 80]* % of the sales of maize herbicides: France EUR […]*, Germany EUR […]* and Italy EUR […]*. Austria, the Netherlands and Spain are three maize herbicides markets of about equal size EUR […]*. Other, smaller markets are Belgium, Portugal, Greece, Denmark and the United Kingdom. In Finland, Ireland, Sweden, Luxemburg, Norway, Iceland and Liechtenstein, the cultivation of maize crops is economically insignificant, and hence the use of maize herbicides is insignificant as well.

(296) For maize herbicides in the EEA, the parties estimate that they command a [40 to 50]* % market share (N [20 to 30]* % + AZ [10 to 20]* %) with sales of EUR […]*, with variations on a national market basis [30 to 40]* % in Austria up to [60 to 70]* % in the Netherlands. Competitors have provided data that broadly confirm the parties' EEA estimates. The following table gives a detailed overview of the market shares on a per country basis ([45]).

Market share data for maize herbicides — 1998

(%)

	Novartis	AstraZeneca	Total
Austria	[30-40]*		[30-40]*
Belgium	[20-30]*	[30-40]*	[50-60]*
Denmark	[40-50]*		[40-50]*
France	[20-30]*	[20-30]*	[50-60]*
Germany	[30-40]*	[5-10]*	[40-50]*
Greece	[30-40]*	[5-10]*	[30-40]*
Italy	[20-30]*	[10-20]*	[30-40]*
Netherlands	[30-40]*	[30-40]*	[60-70]*
Portugal	[10-20]*	[20-30]*	[30-40]*
Spain	[20-30]*	[10-20]*	[30-40]*
United Kingdom	[40-50]*		[40-50]*
EEA	[20-30]*	[10-20]*	[40-50]*

([45]) All figures contained in these tables have been rounded to the nearest one percent. This explains why the sum of the figures in the first and the second column does not always seem to equal the total in the third column. In the countries that are not mentioned in the table (Finland, Ireland, Sweden, Luxemburg, Norway, Iceland, Liechtenstein), the cultivation of maize crops is insignificant. In Austria [5 to 10]* %, Greece [0 to 5]* % , Italy [0 to 5]* % and France [0 to 50]* %, Novartis and AstraZeneca have additional sales through third parties. Even though comparatively small, these figures have been included in the above market share data

(297) In the EEA as a whole, Aventis occupies the second place, with an EEA-wide market share of about [10 to 20]* % (variations on a national market basis vary from [0 to 5]* % in Belgium to up to [20 to 30]* % in Austria). Other main players are BASF with a market share of [5 to 10]* %, Dupont, Monsanto and American Cyanamid (each with slightly lower figures) and Bayer and Dow with considerably lower market shares.

(298) For 1999, total maize herbicide sales in the EEA have remained at about the same level as the year before, EUR […]*. From the preliminary information available to the Commission, it appears that the combined market share of the parties in the EEA has remained about the same as well, [40 to 50]* %. Novartis lost market share (from [20 to 30]* % to [20 to 30]* %), but AstraZeneca gained market share (from [10 to 20]* % to [10 to 20]* %).

(299) As was indicated at recital 295, the three most important national maize herbicide markets are France, Germany and Italy. They account for almost [70 to 80]* % of total maize herbicide sales in the EEA. These markets are the best documented and will be described in more detail. In addition to these three national markets, a short description will also be given of the smaller national markets where the concentration will lead to the creation or strengthening of a dominant position.

French maize herbicide market

(300) In France, the parties estimate that total maize herbicide sales in 1998 were worth about EUR […]*. According to their estimate, they had a combined market share of [50 to 60]* % (N [20 to 30]* % + AZ [20 to 30]* %), BASF had [5 to 10]* % and Aventis [5 to 10]* %. No information has been provided on the other competitors. According to the replies of the competitors that were consulted during the Commission's market investigation (BASF, Aventis, Bayer, DuPont, Dow and American Cyanamid), the total market size in 1998 was probably a little higher than the parties' own estimate. Only one firm indicated a market value below the

parties' estimate. On this basis, the market share of Syngenta would be somewhat lower than the indicated [50 to 60]* %, in the range of [40 to 50]* %. The market investigation has confirmed the market shares given for BASF and Aventis and has identified market shares of [10 to 20]* % for Monsanto, [5 to 10]* % for DuPont, [5 to 10]* % for American Cyanamid, [0 to 5]* % for Dow and [0 to 5]* % for Bayer.

(301) From the preliminary information available to the Commission it appears that the combined market share of the parties in France has increased somewhat in 1999, from [50 to 60]* % to [50 to 60]* %. Novartis lost market share (from [20 to 30]* % to [20 to 30]* %), but AstraZeneca gained market share (from [20 to 30]* % to [20 to 30]* %).

German maize herbicide market

(302) The parties estimate that in 1998 total maize herbicide sales in Germany were worth about EUR […]*. According to their estimate, they had a combined market share of [40 to 50]* % (N [30 to 40]* % + AZ [5 to 10]* %), BASF had [10 to 20]* % and Aventis [10 to 20]* %. No information has been provided on the other competitors. The Commission's market investigation indicates that the total market size in 1998 was probably a little higher than the parties' own estimate. On this basis, the market share of Syngenta would be somewhat lower than the parties' estimate, about [40 to 50]* %. The indicated market share of [10 to 20]* % for BASF is accurate, but Aventis'market share is lower, at about [5 to 10]* %. The market investigation has further identified market shares of [5 to 10]* % for DuPont, [5 to 10]* % for Bayer, [5 to 10]* % for American Cyanamid, [0 to 5]* % for Dow and [0 to 5]* % for Monsanto.

(303) In 1999, it appears from preliminary information available to the Commission that the combined market share of the parties has decreased somewhat, to [40 to 50]* %. Novartis lost market share (from [30 to 40]* % to [30 to 40]* %), but AstraZeneca gained market share (from [5 to 10]* % to [10 to 20]* %).

Maize herbicide market in Italy

(304) The parties estimate that in 1998 total sales in the Italian maize herbicide market were some EUR […]*. According to their estimate, Syngenta had [30 to 40]* % (N [20 to 30]* % + AZ [10 to 20]* %) and Aventis [10 to 20]* %. No information has been provided on the other competitors. According to the Commission's market investigation, the total market size in 1998 was probably a little below the parties' own estimate. On the basis of this, the market share of Syngenta would be somewhat higher than the parties' estimate, about [30 to 40]* %. According to the market investigation, Aventis had about [10 to 20]* %, DuPont [5 to 10]* %, American Cyanamid [5 to 10]* %, Dow [0 to 5]* % and Bayer [0 to 5]* %. The market role of BASF in Italy is minor.

(305) In 1999, it appears from the preliminary information available to the Commission that the combined market share of the parties has decreased somewhat, from [30 to 40]* % to [20 to 30]* %. Novartis lost market share (from [20 to 30]* % to [10 to 20]* %), and so did AstraZeneca (from [10 to 20]* % to [10 to 20]* %).

Smaller maize herbicide markets

(306) In the Netherlands, the parties estimate that the 1998 maize herbicide market was worth EUR […]* and that Syngenta would have a [60 to 70]* % market share (N [30 to 40]* % + AZ [30 to 40]* %). BASF has a [10 to 20]* % market share, Aventis [10 to 20]* %. The market investigation broadly confirms these figures. In 1999, it appears that the combined market share of the parties was about the same: [60 to 70]* % (N [20 to 30]* % + AZ [30 to 40]* %).

(307) In Belgium, the parties estimate that the total market in 1998 was worth about EUR […]*, of which Syngenta held a [50 to 60]* % market share (N [20 to 30]* % + AZ [30 to 40]* %). BASF would have a [10 to 20]* % market share and Aventis [0 to 5]* %. These estimates are confirmed by the market investigation. Other competitors identified by the market investigation are DuPont ([10 to 20]* %), American Cyanamid [5 to 10]* % and Monsanto [5 to 10]* % . In 1999, it appears that the combined market increased to [50 to 60]* % (N [20 to 30]* % + AZ [30 to 40]* %).

(308) In Austria ([30 to 40]* %), Denmark ([40 to 50]* %) and the United Kingdom ([40 to 50]* %) Novartis had large market shares […]*. However, given that AstraZeneca was hardly present in those countries in that year, those markets are not affected by the concentration. Whilst the market share and the overlap for the Portuguese market is substantial ([40 to 50]* %, namely N [20 to 30]* % + AZ [10 to 20]* %), the Commission does not need to decide on the basis of this evidence whether the notified operation would lead to the creation of a dominant position, since any competitive problems would be removed as a result of the implementation of the commitments submitted for the national maize herbicide markets where the merger is found to lead to the creation of a dominant position.

(309) The high market shares that the new combination will have, both on an EEA-wide level ([40 to 50]* %) and in France, Germany, the Netherlands and Belgium (where the parties' positions overlap), as well as the fact that the new entity will be at least four times as large as its next competitor from an EEA-wide perspective, strongly suggest that the merger operation will lead to the creation of a dominant position in the markets for maize herbicides in the countries in question.

(310) This conclusion is corroborated by the market investigation among customers, competitors, consultants and farmers' associations. A substantial number of the respondents have expressed concern as to the future market position of the new entity in the domain of maize herbicides. All comments point to the fact that the already strong position of the parties in terms of market shares will be cemented by a strong and ubiquitous presence of the parties' products in all segments of the maize herbicide market: pre-emergence and post-emergence, grass weed control and broadleaf weed control.

(311) As indicated in the section on the determination of the relevant product markets, broadleaf weed herbicides are no realistic substitute for graminicides, or vice versa. It is only through the existence of broadspectrum products that there is any competitive link between the two extremes of the markets, the main competitive constraints are, however, imposed within the respective segments of grass control and broadleaf control. In the decision on the timing of the application, pre-emergence or post-emergence, it also transpires that the relationship between the two available products, pre-emergence and post-emergence herbicides, is not always just one of substitutability, but also one of complementarity. Even in terms of timing, therefore, the main competitive constraints are imposed within the respective segments: pre-emergence control and post-emergence control.

(312) In order to conduct a proper analysis of the competitive impact of the merger between the parties it is necessary to consider also what strength the parties will have in each of the respective segments. Furthermore, in view of the partly complementary nature of the segments involved, both from a control perspective (grass/broadleaf) and from a time perspective (pre/post), it is necessary to consider the extent to which the parties have strong positions in all of the segments.

The four segments in maize weed control

(313) Syngenta will have an 'ideal' range of products that fully covers the grass and broadleaf weed control and provides solutions in both pre- and post-emergence control. This is particularly well seen from a comparison of Syngenta's range of active substances with the body of all important active substances that are available in the market or will become widely available in the near future (acetochlor, s-metolachlor, isoxaflutole, mesotrione). The following table provides such a comparison. It is compiled from the parties' and respondents' submissions. In particular, it covers all active substances of which the parties have indicated that they are leading in the control of at least one of the 30 most important grass and broadleaf weeds encountered in Europe ([46]), ([47]).

([46]) According to the parties, the most important perennial grasses are *Elymus repens* (couch grass), *Cynodon dactylon* (bermuda grass) and *Sorghum halepense* (Johnson grass). The most important annual grass weeds are *Avena fatua* (wild oat), *Alopecurus myosuroides* (blackgrass), *Apera spica-venti* (loose silky bent), *Lolium multiflorum* (Italian rye grass), *Echinochloa crus-galli* (barnyard grass), *Digitaria sanguinalis* (large crabgrass), *Setaria* spp. (foxtail), *Panicum* spp. (Panicum), and *Poa* spp. (meadow grass). The most important perennial broadleaf weeds are *Convolvulus arvensis* (field bindweed), *Cirsium arvense* (Canada histle) and *Rumex obtusifolius* (round leaved dock). The most important annual broadleaf weeds are *Amaranthus retroflexus* (pigweed), *Chenopodium album* (common lambsquarters), *Mercurialis annua* (annual mercury), *Galium aparine* (cleavers), *Geranium* spp. (Geranium), *Lamium pupureum* (red deadnettle), *Matricaria* spp. (mayweeds), *Papaver rhoeas* (field poppy), *Polygonum* spp. (knotweeds), *Capsella bursa pastoris* (Shepherd's Purse), *Sinapis arvensis* (Charlock), *Solanum nigrum* (black nightshade), *Stellaria media* (chickweed), *Veronica* spp. (speedwells) and *Viola arvensis* (field pansy).

([47]) In their reply to the statement of objections, the parties maintain that isoxaflutole (Aventis) is a broadspectrum herbicide; Aventis itself, however, considers it to be a broadleaf herbicide (and so do the competitors that discuss isoxaflutole). The parties consider terbuthylazine (generic) to be a broadleaf herbicide; certain competitors and the Pesticide Manual of the British Crop Protection Council classify it as a broad spectrum herbicide. The parties consider rimsulfuron (DuPont) to be a broad spectrum herbicide; Dupont, however, submits that it is a graminicide. In their reply to the statement of objections, the parties further present nicosulfuron as broad spectrum herbicide. AstraZeneca, however, has classified it as a graminicide in its reply to Commission question 2ph2, q49 and in its internal documents (e.g. in the ABR product briefings). This view is confirmed by the Pesticides Manual and the Farm Chemicals Handbook 2000. The parties also maintain that some more active substances of the competitors should be included as they will be introduced in the years to come. In the Commission's view, these substances should not be included, as their introduction date is not expected in the two-three years to come or because they cannot be considered important enough (on the basis of the companies' market expectations for these substances).

Active substances of importance in the EEA

	Graminicides	Broad spectrum herbicides	Broadleaf herbicides
PRE (or early post)	Novartis: metolachlor (g) s-metolachlor AstraZeneca: acetochlor Monsanto: acetochlor alachlor (g) BASF: dimethanamid Bayer: flufenacet	Novartis: atrazine (g) terbuthylazine (g)	Novartis: terbutryn (g) AstraZeneca: mesotrione AmCy: pendimethalin Dow: metosulam Aventis: isoxaflutole aclonifen
POST	AstraZeneca: nicosulfuron (ISK) DuPont: thifensulfuron (Aventis:) nicosulfuron (ISK) (BASF:) nicosulfuron (ISK)	Novartis: atrazine (g) terbuthylazine (g)	Novartis: dicamba (g) pyridate prosulfuron primisulfuron AstraZeneca: sulcotrione mesotrione BASF: 2-4D (g) bentazone DuPont: thifensulfuron Aventis: bromoxynil (g) Dow: clopyralid fluroxypyr metosulam

g → active substance also produced by generic producers (Europe); it must be noted that even when a substance is produced by generic producers, it is not necessarily the case that these producers can also sell formulated products.

ISK → nicosulfuron is the property of ISK. AstraZeneca is the main distributor for ISK in the EU; it has distribution rights for France (with Aventis), Italy (exclusively), the United Kingdom (exclusively), Spain (with Aventis), Greece (exclusively) and Portugal (exclusively) […]*.

(314) As for the strength of the individual active substances on which AstraZeneca's and Novartis products are based, the parties and their competitors have been asked to indicate which substances are the most effective on the key weeds in European maize cultivation ([48]). From this survey (included in the statement of objections) it transpires that the leading herbicide products in maize are based, or will be based, on the following active substances: in pre-emergence, acetochlor (AZ/Monsanto), (s-)metolachlor (N), mesotrione (AZ), isoxaflutole (Aventis) and in post-emergence: sulcotrione (AZ), mesotrione (AZ), nicosulfuron (ISK/AZ/Aventis/BASF) and dicamba (N/generic). From the analysis of Syngenta's herbicide portfolio it becomes apparent that its portfolio is unique in terms of both the number and scope of leading active substances for effective weed control in maize. Furthermore, their portfolio will contain at least four other important active substances, namely pyridate, prosulfuron, atrazine and terbuthylazine.

([48]) Based on the aforementioned 30 important weeds, the parties (Novartis) and their competitors have provided a further categorisation of weeds as a function of their economic importance.

Current market shares of the parties in the respective segments

(315) The extent to which the effectiveness of the parties' current products on key weed species translates into market shares in the respective segments, grass weed control and broadleaf control, pre-emergence and post-emergence is indicated in the tables contained in recitals 316, 317 and 318. The market shares are given for the year 1999 and are obtained for grass weed control by adding up the sales in graminicides and broadspectrum herbicides and for broadleaf control by adding up the sales in broadspectrum herbicides and broadleaf herbicides ([49]).

(316) In the EEA as a whole, the new entity will have the following positions in the distinguishable segments:

EEA	Grass weed control	Broadleaf weed control	
pre-emergence	[30-40]* % (N [20-30]* %, AZ [0-5]* % of EUR […]*)	[30-40]* % (N [30-40]* %, AZ [0-5]* % of EUR […]*)	► [20-30]* % (N [20-30]* %, AZ [0-5]* % of EUR […]*)
post-emergence	[40-50]* % (N [10-20]* %, AZ [20-30]* % of EUR […]*)	[50-60]* % (N [20-30]* %, AZ [30-40]* % of EUR […]*)	► [50-60]* % (N [20-30]* %, AZ [30-40]* % of EUR […]*)
	▼ [30-40]* % (N [20-30]* %, AZ [5-10]* % of EUR […]*)	▼ [40-50]* % (N [20-30]* %, AZ [20-30]* % of EUR […]*)	insgesamt: [40-50]* % (N [20-30]* %, AZ [10-20]* % of EUR […]*)

(317) In the largest national market, France, the new entity will attain the following positions:

FRANCE	Grass weed control	Broadleaf weed control	
pre-emergence	[20-30]* % (N [20-30]* %, AZ [0-5]* % of EUR […]*)	[20-30]* % (N [20-30]* %, AZ [0-5]* % of EUR […]*)	► [20-30]* % (N [20-30]* %, AZ [0-5]* % of EUR […]*)
post-emergence	[90-100]* % (N [10-20]* %, AZ [5-10]* % of EUR […]*)	[70-80]* % (N [20-30]* %, AZ [50-60]* % of EUR […]*)	► [70-80]* % (N [20-30]* %, AZ [50-60]* % of EUR […]*)
	▼ [30-40]* % (N [20-30]* %, AZ [10-20]* % of EUR […]*)	▼ [60-70]* % (N [20-30]* %, AZ [30-40]* % of EUR […]*)	total maize: [50-60]* % (N [20-30]* %, AZ [20-30]* % of EUR […]*)

([49]) The figures have been provided by Novartis based on its datasource, Impact. Due to the fact that some products are double counted (notably broad spectrum products but also products that can be used both pre and post), the figures do not add up.

(318) In the second largest national market, Germany, the new entity will have the following positions in the distinguishable segments:

GERMANY	Grass weed control	Broadleaf weed control	
pre-emergence	[50-60]* % (N [50-60]* %, AZ 0 % of EUR […]*)	[50-60]* % (N [50-60]* %, AZ [0-5]* % of EUR […]*)	► [60-70]* % (N [60-70]* %, AZ 0 % of EUR […]*)
post-emergence	[30-40]* % (N [30-40]* %, AZ 0 % of EUR […]*)	[40-50]* % (N [20-30]* %, AZ [10-20]* % of EUR […]*)	► [40-50]* % (N [20-30]* %, AZ [10-20]* % of EUR […]*)
	▼ [40-50]* % (N [40-50]* %, AZ 0 % of EUR […]*)	▼ [40-50]* % (N [30-40]* %, AZ [10-20]* % of EUR […]*)	total maize: [40-50]* % (N [30-40]* %, AZ [10-20]* % of EUR […]*)

(319) It follows from the above tables that the parties' combined position is not just very strong in the overall maize herbicide market, but that it is in fact, very strong in all of the four segments of it: pre-emergence grass control, post-emergence grass control, pre-emergence broadleaf control and post-emergence broadleaf control. In some countries, the parties' position in one or more of the segments is tremendously strong. In France, for example, [90 to 100]* % of sales for post-emergence grass control is accounted for by either AstraZeneca (with nicosulfuron) or Novartis (with atrazine). In post-emergence applications as a whole, still [70 to 80]* % is held by the parties. In Germany, Novartis has a particularly strong position in pre-emergence applications (with its broad spectrum products based on metolachlor, terbuthylazine and pyridate); AstraZeneca is not present in Germany, not yet, at least. In the Netherlands (not indicated in the form of a table), the parties will have [50 to 60]* % in the segment of grass control and [60 to 70]* % in broadleaf control. In Belgium, the parties will have [60 to 70]* % in post-emergence broadleaf control, in Austria [40 to 50]* % in pre-emergence grass control.

(320) In addition to the current strong market positions that the parties have, the parties also have three major new, or recently introduced, products that are likely to further strengthen the parties' positions: acetochlor, s-metolachlor and mesotrione.

Parties' new products in pre-emergence grass weed control

(321) In the new entity's maize herbicides portfolio there are two major pre-emergence maize substances for the control of grass weeds that have been recently introduced or that will be introduced in the near future: acetochlor and s-metolachlor.

Acetochlor

(322) The registration of the active substance acetochlor in Europe is shared between AstraZeneca and Monsanto. At the moment, acetochlor-based products are being marketed only in Spain (since 1995) and in France (since 1999). Other markets are to follow, in particular Germany and Italy in […]*. The market investigation has shown that acetochlor has the potential of becoming an important product in Europe, just as it has become an important product in the United Kingdom. In the America maize herbicide market, it has captured a [10 to 20]* % market share, largely by replacing the once leading product alachlor of Monsanto ([50]). It is expected that this substitution of alachlor by acetochlor will also occur in Europe. Alachlor is currently registered for the use in

([50]) Acetochlor and alachlor belong to the same chemical class, the acetalinides (to which also metolachlor, flufenacet and dimethenamid belong). Acetochlor has a generally better efficacy in weed control than alachlor. Acetochlor is also reported to be a better solution to the farmer than dimethenamid and flufenacet. Acetochlor and metolachlor are both considered best in their class.

maize in France, Italy, Portugal and Spain. In France, the largest maize market, alachlor sales were worth about EUR […]*, leading to a [10 to 20]* % market share in maize. In Italy, the third largest maize market, alachlor sales were about EUR […]* or [10 to 20]* % market share. The share of acetochlor is therefore expected to grow significantly in the Community ([51]).

(323) The fact that the registration of the active substance acetochlor in Europe is shared between AstraZeneca and Monsanto is related to the following. Although the potential of acetochlor was recognised as early as the mid-1980s, its commercialisation was delayed for many years owing to technical problems with the related safeners. Safeners are chemicals which are incorporated in some herbicide formulations to reduce the activity of the herbicide on the crop and reduce the risk of damage to the crop. In this sense, safeners are the means to make possible the market introduction of herbicides, which otherwise would not be brought to market, owing to the potential for phytotoxic damage to the crops. Safeners are difficult to discover, take many years to develop and involve significant costs in field testing and regulatory studies ([52]).

(324) Because of patent issues and the substantial cost and complexity of generating the data packages necessary for obtaining the regulatory approvals for both acetochlor and the related safener, Monsanto and Zeneca entered into an agreement for the registration of acetochlor-based products. This partnership has been able to obtain registrations acetochlor products in Spain (one for AstraZeneca with its safener dichlormid and one for Monsanto with its safener MON 4660) and in France, but in the latter country the registration has been given only for the product containing AstraZeneca's safener dichlormid. According to Monsanto, it is unlikely that it will have an own safener that is registerable in France and the other countries ready by [Monsanto business secret]*. This situation basically puts AstraZeneca in full control as far as acetochlor in Europe is concerned ([53]).

([51]) As another reference, it can be noted that acetochlor achieved a [10 to 20]* % market share during the first year of launch in Hungary and even [20 to 30]* % in the Czech Republic.

([52]) Registration packages for safeners also enjoy data protection. According to AstraZeneca (AZ reply to 4ph2, q15), this affects the safener for acetochlor in particular as the large scale trials are too expensive to replicate, constituting an entry barrier.

([53]) [Monsanto business secret]*

S-metolachlor

(325) S-metolachlor is closely related to metolachlor. Metolachlor was discovered and patented as a herbicide in the early seventies. Taken into the field, the product showed excellent grass control and, combined with a safener, good crop tolerance in key crops including maize. Sold for the first time in 1976, it eventually gained registration in over 90 countries and more than 70 crops. From the beginning it was known to be a molecule consisting of an active part (the s-isomer) and a relatively inactive part (the r-isomer) in the proportion 50:50. Only in the late-1980s it became feasible, with novel synthesis technologies, to selectively produce the active isomer only (this technology is patented by Novartis). As the novel active substance is based on the s-isomer of metolachlor, it is called s-metolachlor. S-metolachlor provides identical performance with [60 to 70]* % of the original use rate of metolachlor. Because it can be used in lower doses, s-metolachlor is more environmentally friendly than metolachlor (in the United Stadtes of America it is a reduced risk pesticide). First registrations with the new molecule were granted 1997 in the USA and the changeover process from metolachlor to s-metolachlor will be finalised in Europe in 2003.

(326) Perhaps the most important reason to introduce s-metolachlor is that it allows for the de-registration of metolachlor, which has the effect of countering generic competition in this domain. While de-registration is by itself not a sufficient condition to protect the metolachlor market segment from generic entry, as third parties can still re-register metolachlor, it will, according to a Novartis metolachlor post patent strategy document […]*. The same post patent strategy document therefore calls for the following Key action: […]* ([54]).

(327) The role of s-metolachlor in replacing metolachlor is further clarified by other Novartis internal documents, saying that[…]*. In this context, mention is made of the following business opportunity: […]*.

(328) In Europe, the patent for s-metolachlor will expire in 2002, but data protection will continue to keep out generic producers, as will the numerous mixture patents. It is expected that in value terms, s-metolachlor will be able to completely take over the position of metolachlor and hence preserve Novartis' strong position in this domain: […]* ([55]). In particular, it is likely that […]* ([56]).

([54]) […]*
([55]) […]*
([56]) […]*

(329) Acetochlor and (s-)metolachlor will be competing head on in the segment of pre-emergence grass control. Acetochlor and metolachlor are the strongest herbicides in the chemical class of the acetalinides (to which also alachlor, dimethenamid and flufenacet belong). That the competition in pre-emergence grass control is mainly taking place between acetochlor and metolachlor is also suggested by the US experience. It can be noted that, in Novartis' internal documents, as one of the grounds to substitute s-metolachlor for metolachlor was mentioned the (future) competition from […]* ([57]). Also in internal documents of AstraZeneca, it is mentioned that metolachlor forms […]* ([58]). The combination of the two leading pre-emergence grass weed herbicides in maize would result in an insurmountable strength in this segment.

The parties' new product in broadleaf weed control

(330) The most important development in the new entity's maize herbicides portfolio in broadleaf control is the introduction of AstraZeneca's mesotrione.

Mesotrione

(331) In the near future, AstraZeneca will bring to market products based on a new active substance, mesotrione. Registration in the EEA is expected in the year […]* and a full launch is expected in the year […]*. Mesotrione is a product with a unique technical profile, offering exceptional broadleaf weed control. According to internal documents it has the […]* ([59]). Uniquely, it is both pre- and post-emergence, but it will be mainly positioned […]* ([60]). In the United States of America it is a reduced risk pesticide. Novartis has high expectations of the product: according to its internal documents mesotrione could be more competitive than […]* ([61]).

(332) Mesotrione is considered to take, by itself, a [5 to 10]* % market share of the world-wide maize herbicide market by […]*, comprising [10 to 20]* % of post-emergence and [0 to 5]* % in pre-emergence treatments ([62]). In Europe, mesotrione is intended to[…]* ([63]). As becomes clear from an analysis of the technical capabilities, and as stressed by a competitor, mesotrione and sulcotrione are very similar except for the timing of application: mesotrione can also be used pre-emergence, sulcotrione only post-emergence. The […]* of sulcotrione […]* is by itself an indication of the strength of the latter product, given that sulcotrione is currently AstraZeneca's best-selling maize herbicide (accounting for [50 to 60]* % of sales) and that this active substance is actually patented […]* ([64]). In other words, by the time that sulcotrione is no longer patent protected, the new mesotrione will have taken over the market position of sulcotrione, so that the latter substance can be de-registered making it much more difficult for generic producer to come to the market with sulcotrione. This strategy closely resembles, […]*.

(333) […]* For this reason, according to internal documents, mesotrione will also be positioned in promising mixtures with […]* ([65]). As a result total acetochlor sales will […]* ([66]). Finally, the manufacture of mesotrione shows an improved cost structure in comparison with sulcotrione, offering an extra competitive advantage as well.

Arguments raised by the parties

(334) The parties argue that the overall market shares of Novartis and AstraZeneca are likely to decrease for a number of reasons.

(335) First, the product portfolios of Novartis and AstraZeneca contain a number of older products which will need to be re-registered in the near future. Without such a re-registration, the products can no longer be sold in the Community. As the standards have been raised for compliance with re-registration requirements, both on the national and on the European level, the extension of, for example, Novartis' atrazine-based products in France might be at risk, as well as of metolachlor in the Netherlands.

(336) It is indeed the case that atrazine has been deregistered in Germany, Italy and the Netherlands because of its rather unfavourable environmental properties. However, whereas there may be a risk of atrazine being de-registered in France at a certain point in time, it is not evident that atrazine will be de-registered in the

([57]) […]*
([58]) […]*
([59]) […]*
([60]) […]*
([61]) […]*
([62]) […]*
([63]) […]*
([64]) […]*
([65]) […]*
([66]) […]*

near future. No steps have so far been announced by the French authorities. It must be noted that the instructions given by Novartis in 1999 to its national branch in France do not point at the existence of any problems with atrazine, rather to the contrary, in fact: […]*.

(337) Furthermore, the impact of any de-registration of atrazine in France on the parties' market position must not be overstated. In particular, a substantial part of the sales from atrazine, which is after all a broadspectrum herbicide that can be used in both pre and post-emergence, may be expected to shift into the direction of one or more specific products in the four segments of the product space (pre-post, grass-broadleaf weed) and, in particular, to combinations thereof. As indicated in the section on maize cultivation and weed control, in the countries where atrazine is banned, growers generally tend to use more post-emergence products for broadleaf control. This has allowed AstraZeneca to increase its market share by promoting sulcotrione and nicosulfuron for use in tank mixtures, in post-emergence. Also in France, according to a competitor, the less favourable environmental properties of atrazine have already allowed AstraZeneca to increase its market share in this way. Furthermore, it is useful to point at the fact that, according to internal documents of AstraZeneca, the promising new broadleaf product mesotrione will, among others, be positioned in mixtures with […]* ([67]). It is therefore likely that the specific pre-emergence combination mesotrione- […]* will be able to further compensate possible losses of atrazine sales due to de-registration (if this occurs) to a considerable extent. This is all the more likely, given that current generic producers of atrazine (see below) have no clear pre or post-emergence alternative to atrazine to offer, whereas Syngenta has.

(338) As far as product mixes of other active substances with atrazine is concerned, the de-registration of atrazine would be of less importance, given that there is an acceptable substitute in the form of terbuthylazine. Even though terbuthylazine is by itself a rather old compound and off-patent, it was introduced in the maize market only in the early 90s exactly because atrazine was banned in Germany and Italy. Terbuthylazine has a similar spectrum of control as atrazine but has weaker activity. It is less likely to be prohibited for use in maize herbicides, in particular when it is used in mixtures (mixing active ingredients generally allows manufacturers to better control the actual use rates applied by the farmers; for this reason, Novartis has also decided to sell terbuthylazine only in mixtures, not as straight products).

(339) As far as metolachlor in the Netherlands is concerned, it is Novartis' intention to […]*. As has been discussed in the section on s-metolachlor above, it is Novartis' strategy to […]*. S-metolachlor, on the other hand, is closely related to metolachlor but can be used in much lower dose rates, so that it is more environmentally friendly. No registration problems for s-metolachlor are expected.

(340) Secondly, the parties claim that there are several generic producers for some of their off-patent active ingredients, in particular of atrazine, terbuthylazine, acetochlor and dicamba and that generic competition on metolachlor is likely, as it will be off-patent soon.

(341) The impact of generic products on the parties' maize herbicides portfolio is principally confined to two active substances, atrazine and terbuthylazine. The Israel based Makhteshim and the Danish Cheminova are well known generic producers. According to some competitors, however, the real impact of these generic products is quite low. Atrazine is used mainly in France and is banned or restricted in its use in many other countries. As for the situation in France, reference can be made to the abovementioned instructions given by Novartis to its national branch in France: […]*. These instructions do not point at generic entry being much of a disturbing factor as far as Novartis is concerned. As terbuthylazine is used mostly in combination products, the impact of 'straight' generic terbuthylazine is thought to be low. In fact, Novartis sells terbuthylazine only in ready-mixed product formulations, — that is, combined with other active substances.

(342) Furthermore, the mere fact that generic producers produce (or are able to produce) an active ingredient does not mean that they can sell their product in the EEA. This is most clearly the case for atrazine, which is no longer registered in Germany, Italy and the Netherlands. Furthermore, the legal protection of registration data may, in addition to the patent protection, also prevent competition: the EU registration system (for the active substance) or the national registration systems (for the product) usually grant data

([67]) […]*

protection of 5 to 10 years from the time of registration. In Germany, for example, the data package for the registration of terbuthylazine, although the product is off patent, continues to enjoy such legal protection, leading to the absence of generic competition in terbuthylazine.

(343) Another example is provided by acetochlor, which is expected to become in Europe one of the leading herbicidal substances (as has been discussed above). So far, only a partnership between AstraZeneca and Monsanto has been able to obtain a registration for a maize herbicide containing acetochlor in Spain (1993, for two products) and France (1999, for a product containing the safener ([68]) dichlormid, registered by AstraZeneca alone). Although acetochlor is no longer patent protected, the EU registration system for active substances grants data protection of 10 years. Registration packages for safeners also enjoy data protection. […]* ([69]). As a result, so far, none of the generic producers of acetochlor has been able to obtain a registration for their products in the EEA. Neither has any of the other R & D based competitors, for that matter. Therefore, as conceded by the parties, there is no generic competition whatsoever on acetochlor in the EEA. In short, the fact that a product is off-patent and that there are generic producers of the active substance does not imply that these products can be sold within Europe.

(344) For dicamba, data protection still applies in most of the important maize countries. In France, for example, the registration data are protected until 2006; for Germany until 2009. Given that the registration procedures for generic dicamba are particularly demanding in France and Germany ([70]) (the two largest markets), entry by generic producers is unlikely. An exception as far as data protection is concerned is Italy. In this country, the first products of presumed generic origin have been brought to market in 1999. Several strategies are, however, in place to limit the impact of dicamba no longer being patent protected. […]* Given that Novartis will increasingly use dicamba in mixed products, an outright de-registration of straight dicamba might also be an effective way to impede competition from generic dicamba. Registration procedures for generic dicamba are particularly demanding in France, Germany (the two largest markets) and Austria. It is envisaged […]* ([71]).

(345) Thirdly, the parties claim that they do not have exclusive rights to a number of their key products. As mentioned, the registration of acetochlor in Europe is shared between AstraZeneca and Monsanto. Further, Novartis sources dicamba from BASF, which, according to the parties, intends to launch a dicamba-based product of its own in Europe. While this latter statement is correct, it is unlikely that this product will materially change Syngenta's position in the post-emergence broadleaf segment ([72]). Furthermore, as explained above, the merged entity has product replacement strategies for dicamba as well and it will have products that are perceived as superior in this segment (sulcotrione, […]*). With regard to acetochlor, the market investigation has indicated the strength of AstraZeneca as compared to Monsanto ([73]) (see above).

(346) Fourth, the parties claim that several competitors will launch new products in the near future, whereas only AstraZeneca, not Novartis, will come up with new products. These latter statements are to be disqualified. First of all, it disregards the fact that some strong products that have been introduced in the recent past in only some of the EEA countries are being progressively introduced in the other countries (acetochlor and s-metolachlor). Secondly, one of AstraZeneca's new products, mesotrione, is going to be an absolute key product in the maize herbicides market for the future.

(347) The parties claim that the competitors have discovered, recently introduced or will launch in the near future the following maize herbicides: isoxaflutole (Aventis, 1998), isoxachlortole (Aventis, 2003) and foramsulfuron (Aventis, 2003), flufenacet (Bayer, 1999), amicarbazone (Bayer, 2002), imazamox (American Cyanamid, 2000), cycloxidim (BASF, 2001), diflufenzopyr (BASF, 2002/3) and tritosulfuron (BASF, 2003).

(348) With the possible exception of isoxaflutole, the prospects of these products are not such as to conclude that the companies producing them will be capable of challenging Syngenta's market position ([74]). Nor are the

([68]) Safeners are chemicals which are used in combination with herbicidal active substances and which reduce phytotoxity to levels acceptable in modern agriculture. Not all herbicidal substances require the use of a safener, but acetochlor and metolachlor do.

([69]) […]*

([70]) N reply to 4ph2, q67; Novartis Western European post patent strategy for dicamba.

([71]) […]*.

([72]) [BASF business secret]*

([73]) [Monsanto business secret]*

([74]) [Aventis business secret]* [Bayer business secret]* [BASF business secret]* [Dow business secret]*

prospects of the competitors' established products, for that matter ([75]). Both conclusions are arrived at after a careful comparison of the revenue projections for each of the products in question (provided by the competitors) with existing sales levels. While the parties maintain that the above pipeline products of the competitors have very good potential for example, the prospects of foramsulfuron would be as good as nicosulfuron the Commission finds it necessary to attach significant relevance to the internal estimates of the competitors given that they are probably the best informed about the properties and market potential of the products, in particular as they are still under development.

(349) As for isoxaflutole (Aventis), this is a very strong product indeed. As indicated in the section on weed control, isoxaflutole is a product providing excellent broadleaf control in pre-emergence. The parties claim that the product has captured [5 to 10]* % of the EU market in first two years and that the market share will continue to grow rapidly in view of its recent introduction. According to the sales figures provided by Aventis, isoxaflutole attained a 1999 market share of [5 to 10]* % - in the representative maize countries France, Germany and Italy. In this respect, it is even remarkable that the combined market shares of AstraZeneca and Novartis in 1999 showed only a very moderate decrease in comparison with the year before, namely from [40 to 50]* % to [40 to 50]* %, EEA-wide. While Aventis' revenue projections for 2003 confirm that there is still scope for isoxaflutole growing in market share [Aventis business secret]*, the observation must be that three-fifths of its potential has already materialized up to 1999. In their reply to the statement of the objections, the parties maintain that the latter figure is a gross underestimation of the potential of isoxaflutole. For this reason, the Commission has asked Aventis to reconfirm their submission and to check whether the most recent developments in the 2000 growing season might perhaps give reason to adjust the market expectations for the product. Aventis, however, saw no reason to revise their sales forecasts as provided at an earlier stage.

(350) In any event, whether isoxaflutole will effectively be able to further realize its potential will depend on a number of unknowns. Indeed, the structural change in the industry that results if the merger operation as proposed by the parties goes ahead, is probably the most important factor in this respect: it is unlikely that isoxaflutole or the other new products of the competitors are able to stand up against the individual and combined strength of Syngenta's combined range of products. The strong presence of Syngenta in all four segments of weed control (on the basis of its active substances acetochlor, s-metolachlor, nicosulfuron, sulcotrione, mesotrione) confers to Syngenta the flexiblity to make leading tank mix recommendations and to develop leading mixture products, with the effect of pre-empting the market for many of the competitors' (new or existing) products. Equally, the strong presence of Syngenta's active substances in all four segments of weed control will confer to it substantial power vis-à-vis the distribution chain.

(351) This scenario is indeed the scenario expressed by numerous respondents, customers and competitors alike. According to a competitor, the unique and 'unprecedented' maize portfolio will give the flexibility to Syngenta to make leading straight and mixture products, the strength of which would even be such to allow Syngenta to bundle product offers (including seeds) at distributor and farmer level, using some of the key products as a leverage for new or lesser products.

(352) The next sections will further outline the extent to which a strong range of products is such as to confer to Syngenta an exceptional position in the market for maize herbicides

Possible (future) product combinations

(353) The unique maize portfolio will give Syngenta the flexilibity to make further leading product combinations. Competitors have typically pointed at the following combinations as being outstanding.

(354) Several promising product combinations amount to offering broad spectrum solutions for both pre and post-emergence applications. The combination of sulcotrione, the best post-emergence broadleaf weed control product, with metolachlor (and possibly atrazine or terbuthylazine) would offer outstanding broad spectrum control for both pre and post-emergence applications. The possibilities of mesotrione in combination with s-metolachlor […]* equally offer excellent broad spectrum control (for example as a replacement to atrazine, as discussed at length in the section on atrazine in France). Nicosulfuron, reputed to

([75]) [Aventis business secret]* [BASF business secret]* [DuPont business secret]* [Dow business secret]* [American Cyanamid business secret]* [Monsanto business secret]*.

be the strongest post-emergence graminicide, is seen by many competitors as a very good combination partner for metolachlor (s-metolachlor), atrazine or terbuthylazine ([76]).

(355) In post-emergence, the best weed control solution will be the ready mix combination of nicosulfuron and sulcotrione. It offers a complete solution against all grasses and broadleaves. The same holds for the combination of nicosulfuron with the newly developed mesotrione, an excellent broadleaf herbicides to be used in pre or post-emergence ([77]).

(356) Other strong combinations, involving only the products of the parties, would be atrazine-acetochlor (broad spectrum control, pre-emergence), atrazine-s-metolachlor (broad spectrum control, pre-emergence), atrazine-sulcotrione (broad spectrum control, both pre and post-emergence), prosulfuron-nicosulfuron (broad spectrum control, post-emergence) and pyridate-nicosulfuron (broad spectrum control, post-emergence).

(357) It shows that both on the pre and the post-emergence segment, Syngenta will have an 'ideal' range of products that fully covers grass and broadleaf activity in both pre-emergence and post-emergence. Faced with such a load of highly performing broadspectrum and wide application products, the competitors of Syngenta will find it difficult to sell their narrower spectrum products.

(358) The range of products at the disposal of the competitors is much less important than that of the new entity. On the pre-emergence segment, BASF has no compound that has full broadleaf activity. BASF's product range would be much more competitive if it could have access to a mixture partner in order to complement the mainly grass activity of its active substance dimethenamid. The technically only possible partners of dimethenamid with broadleaf activity would be atrazine (Novartis/generic), terbuthylazine (Novartis/generic), isoxaflutole (Aventis) and pendimethalin (AmCy). From a price and efficacy perspective, the two Novartis active substances would actually fit best, whereas isoxaflutole (Aventis) and pendimethalin (AmCy) are not optimal candidates, among others, due to some phytotoxic problems.

([76]) […]*
([77]) […]*

(359) Aventis' product isoxaflutole, a pre-emergence broadspectrum herbicide, would clearly benefit from being combined with active substances for extended grass control. Monsanto's range of products would be strengthened by coupling acetochlor with atrazine or terbuthylazine in ready mix formulations (atrazine for France, Spain, Portugal or Greece; terbuthylazine for Italy and Germany, where atrazine is not registered). DuPont's range of products is primarily situated in the post-emergence segment and has, in fact, no comparable presence in pre-emergence herbicides.

(360) The range of products at the disposal of the competitors on the post-emergence segment is also much less important than that of the new entity. For BASF, the situation is that its broadleaf products bentazone and bentazone mixed with dicamba need a full grass partner. The best possible mixing partner is nicosulfuron, owing to its efficacy in the grass post-emergence segment. In fact, in Germany a bentazone and nicosulfuron mix is currently being marketed. Another possible mixing partner for bentazone would be rimsulfuron of Dupont, but this combination is reported to be less attractive than the combination of bentazone with nicosulfuron.

(361) Aventis' post-emergence broadleaf herbicide bromoxynil would be optimally combined with terbuthylazine (Novartis/generic), in order to further extend its broadleaf weed control. The post-emergence broadspectrum product foramsulfuron suffers from a lack of residual control, a problem that could be solved by combining the products with, ranked from most attractive partner to least attractive partner: atrazine (Novartis/generic), mesotrione (AstraZeneca), terbuthylazine (Novartis/generic), dicamba (Novartis), metosulam/fluthiamid (Bayer) and pyridate (Novartis). Extended broadleaf control could be given to foramsulfuron by sparring it with mesotrione (AstraZeneca), sulcotrione (AstraZeneca), prosulfuron (Novartis), again ranked in descending order of attractiveness. Monsanto's range of products is primarily situated in the pre-emergence segment and has no comparable presence in post-emergence herbicides. DuPont's product range in Germany is showing a gap in post-emergence herbicides with residual activity; in Italy, DuPont would benefit from having access to pre-emergence products and a post-emergence broadleaf weed compound with a different mode of action than currently in DuPont's range.

(362) Several development and cooperation agreements between the competitors and Novartis or AstraZeneca

are currently in place. Similarly, some of the competitors have shown concrete interest in combining their products with either products of Novartis or of AstraZeneca in ready mix formulations ([78]). In view of the very complete range of products that Syngenta will have 'in-house' (both pre-emergence and post-emergence solutions, graminicides, broad spectrum herbicides and broadleaf herbicides, several modes of action), it is likely that the new entity will seek to combine, in the first instance, its own molecules. This development would have an adverse effect on the ability to compete of those competitors who currently have co-operation agreements with the parties or who have an interest in concluding such agreements, as the possibilities to combine with products from other competitors are limited in number and scope. Several competitors have expressed concern that if Syngenta were to deny access to its key molecules, this would further enhance Syngenta's market position. Indeed, some of the competitors have indicated that access to Syngenta's active substances is essential for their ability to compete ([79]).

(363) Similarly, in view of Syngenta's range of performant broadspectrum products, it is likely that a strategy of withdrawing straight herbicide products is an effective and attractive strategy to 'isolate' and render less useful the competitors' products that are intended to be used in farmers' tank mixes. This strategy as well will have an adverse effect on the ability of competitors to compete. In their response to the Statement of Objections, the parties maintain that there is no basis for these assertions. Even in those cases where a mixture strategy would be technically feasible, it would be 'economic madness', as the mixture products would be more expensive and market share would be lost by abandoning straight products. While those arguments apply for companies in a normal competitive position, they do not necessarily apply to a company that is, in view of its strong market position and its exceptionally wide product portfolio, in a position to profitably pursue such a strategy. Even if there remain for the competitors some possibilities to combine with products from other competitors, these will be limited and involve economic transaction costs that the merged entity will not be burdened with. In this respect, it should be recalled that the incentive for the merged entity to adopt the mixtures strategy is reinforced by the fact that, as indicated before, developing ready mix products is an effective way to extend the protected status of individual products that have become off-patent.

([78]) [Aventis business secret]* [BASF business secret]* [Bayer business secret]*

([79]) [AmCy business secret]* [Monsanto business secret]* Access to generic products, where they are registered at least, is less of an issue due to the wide availability of supply options and registration data packages. This is not the case for terbuthylazine in Germany, where Novartis is the only company who has a registration.

Distribution

(364) The span and strength of the Syngenta product range across all of the segments will be unique among companies competing in the maize herbicide market. This will allow Syngenta to construct very powerful product marketing campaigns, designed to attract farmers to purchase all of their herbicides mainly or even exclusively from Syngenta. An example of this approach would be to use the power of the already strong positions of metolachlor (s-metolachlor), atrazine, acetochlor, sulcotrione (mesotrione) and nicosulfuron in the market to develop 'product packages'. In this respect, the strategic replacements of metolachlor by s-metolachlor and sulcotrione by mesotrione have a clear role to play as well ([80]).

(365) The span of products will enhance the future ability of Syngenta to approach both distribution and growers with differing product ranges which provide, in fact, very similar agronomic solutions. An example of such an approach would be to offer a brand containing acetochlor and atrazine to one group of distributors and a brand containing metolochlor and atrazine to another. The two products are made up of different active ingredients allowing the distributors to promote a 'unique' product, whereas the field result will be almost identical. Segmenting the market in this way is a powerful mechanism to reduce price competition between distributors, a feature well appreciated by distributors, be they large or small. Higher achieved prices increase the margin to distributors and provide a further strong motivation to favour the promotion of Syngenta solutions to the disadvantage of other companies with maize herbicide offerings.

(366) Such a course of action is likely. In terms of pricing strategies, […]* ([81]). It must be noted, in this respect, that distributors, as they commonly provide (solicited or unsolicited) advice to the farmers on which products to use and in what combinations, are important influencers just as well. A price strategy that can be used is price segmentation by using different brands

([80]) […]*

([81]) […]*

and/or labels, or different formulations to appeal to crop growers with different perceived economic value. Whilst AstraZeneca maintains that this price strategy allows the brands to penetrate individual market segments whilst producing the best economic returns to the customer and AstraZeneca, it is likely that a company with such an uncontested coverage of outstanding weed products as Syngenta will have, will be able, and tempted, to use marketing strategies (combining, branding, pricing) for increasing profits only, leaving the customers with higher prices to pay.

Conclusion on maize herbicides

(367) On the basis of the above elements, in particular, the high market shares that the new combination will have, the fact that the new entity will typically be at least […]* times as large as its next competitor and the strong and ubiquitous presence of the parties' products in all four segments of the maize herbicide market (pre-emergence and post-emergence, grass weed control and broadleaf control), the Commission concludes that the notified operation will lead to the creation of a dominant position in the market for maize herbicides in at least France, Germany, the Netherlands and Belgium.

CEREAL HERBICIDES

(368) The market for cereal herbicides is, in value terms, the most important market for selective herbicides. In 1998, the EEA-wide turnover in cereal herbicides was ca. EUR […]* on a total EEA market size for selective herbicides of ca. EUR […]*. The three most important national cereal herbicide markets are France (EUR […]*), Germany (EUR […]*) and the United Kingdom (EUR […]*).

(369) For cereal herbicides in the EEA, the parties estimate that they command a [10 to 20]* % market share (N [10 to 20]* % + AZ [0 to 5]* %) with sales of EUR […]* , with upward variations on a national market basis up to [30 to 40]* % in Portugal and Greece and [30 to 40]* % in Italy. Aventis is currently the market leader with EEA-wide sales of EUR […]* and an EEA-wide market share of [30 to 40]* % (ranging from [10 to 20]* % in Denmark to [50 to 60]* % in Portugal). These figures are bound to decrease in the future as, as a condition for the creation of Aventis in 1999, the merging firms (Rhône-Poulenc and Hoechst) have undertaken to give a licence to another producer for their important IPU active ingredient (products based on this active ingredient account for some [30 to 40]* % of Aventis' total cereal herbicide sales) ([82]).

(370) The above market shares, given for the market for cereal herbicides as a whole, are not, by themselves, indications for a competition concern. However, several concerns have been raised during the market investigation. A fair number of distributors have indicated that the parties could obtain a strong position in the post-emergence control of grass weeds in cereal crops, as the parties would bring together two of the three leading products, namely Grasp/Achieve of AstraZeneca (based on the active substance tralkoxydim) and Topik of Novartis (based on clodinafop), the third product being Puma/Proper of Aventis (based on fenoxaprop).

(371) In the segment for grass control (that is graminicides and broad spectrum herbicides combined), the countries in which the parties would indeed have high market shares would be Portugal with [30 to 40]* % (N [30 to 40]* % + AZ [0 to 5]* %), Spain with [30 to 40]* % (N [20 to 30]* % + AZ [5 to 10]* %), the Netherlands with [30 to 40]* % (but no overlap), Greece with [30 to 40]* % (N [30 to 40]* % + AZ [0 to 5]* %) and Italy with [40 to 50]* % (N [40 to 50]* % + AZ [0 to 5]* %). At a more focused level, the parties would obtain strong positions in graminicides in Spain ([30 to 40]* %; N [10 to 20]* % + AZ [10 to 20]* %), Portugal ([30 to 40]* %; N [30 to 40]* % + AZ [0 to 5]* %), Greece ([30 to 40]* %; N [30 to 40]* % + AZ [0 to 5]* %), Belgium ([40 to 50]* %; no overlap), France ([40 to 50]* %; no overlap), the Netherlands ([50 to 60]* %, no overlap) and Italy ([50 to 60]* %; N [50 to 60]* % + AZ [0 to 5]* %).

(372) It has become clear from the market investigation that in the new entity's portfolio, Topik of Novartis will be the main product; its sales are much larger than the sales of Grasp and they are growing. Grasp, on the other hand, is a product that is losing sales rapidly. From 1998 to 1999, it […]* of its sales and further sales losses are projected. Despite the fact that Grasp will bring about some overlap in many of the countries, it is unlikely that with the creation of this merger, the competitive constraints imposed upon Topik will effectively diminish.

([82]) In IV/M.1378 Hoechst/Rhône Poulenc (Aventis), serious doubts existed with respect to the position of the merging parties in the production of herbicides containing Isoproturon (IPU), either straight or blended with other active substances (IV/M.1378 Hoechst/Rhône Poulenc (Aventis), point 31).

(373) Furthermore, Aventis will introduce the new post-emergence graminicide iodosulfuron in 2001/2002 which is reportedly extremely efficient on Lolium, a key weed for which graminicides are used in Italy. This compound has better efficacy on Lolium than clodinafop (Topik) and tralkoxydim (Grasp). Aventis is expected to introduce iodosulfuron in straight formulations as well as mixtures with their proprietary fenoxaprop active substance.

(374) Finally, in the domain of cereal crop protection there are very few products that are strictly pre-emergence herbicides; most of the pre-emergence herbicides can be applied in post-emergence as well and, as such, provide considerable competition to pure post-emergence herbicides such as Topik.

(375) On the basis of the above elements, it is unlikely that as a result of the concentration a dominant position will arise in the market for cereal herbicides.

POTATO HERBICIDES

(376) In 1998, the EEA-wide turnover in potato cereal herbicides was about EUR […]*. The four most important national potato herbicide markets are Germany (EUR […]*), the United Kingdom (EUR […]*), the Netherlands (EUR […]*) and France (EUR […]*).

(377) For potato herbicides in the EEA, the parties estimate that they had in 1998 a [30 to 40]* % market share (N [0 to 5]* % + AZ [20 to 30]* %) with sales of EUR[…]*, with market shares exceeding [20 to 30]* % in Ireland ([20 to 30]* % — AZ [20 to 30]* % + N [0 to 5]* %), Spain ([30 to 40]* % — AZ [20 to 30]* % + N [5 to 10]* %), Greece ([30 to 40]* % — AZ [20 to 30]* % + N [0 to 5]* %), Austria ([30 to 40]* % — AZ [20 to 30]* % + N [5 to 10]* %), Germany ([30 to 40]* % — all AZ), the Netherlands ([30 to 40]* % — AZ [30 to 40]* % + N [0 to 5]* %), Portugal ([40 to 50]* % — AZ [30 to 40]* % + N [5 to 10]* %), Belgium ([50 to 60]* % — AZ [40 to 50]* % + N [0 to 5]* %) and France ([50 to 60]* % — AZ [40 to 50]* % + N [5 to 10]* %). In a later submission the parties have indicated market shares for 1999. They had combined market shares above [20 to 30]* % and an overlap in Spain ([20 to 30]* % — AZ [20 to 30]* % + N [5 to 10]* %), Austria ([30 to 40]* % — AZ [20 to 30]* % + N [5 to 10]* %), the Netherlands ([30 to 40]* % — AZ [30 to 40]* % + N [0 to 5]* %), Portugal ([20 to 30]* % — AZ [20 to 30]* % + N [0 to 5]* %), Belgium ([50 to 60]* % — AZ [40 to 50]* % + N [5 to 10]* %) and France ([50 to 60]* % — AZ [40 to 50]* % + N [5 to 10]* %). ([83]).

(378) The most important competitor was in 1998 Bayer with an EEA market share of [20 to 30]* % and market shares of [40 to 50]* % in Greece, [40 to 50]* % in Austria, [30 to 40]* % in Ireland, [30 to 40]* % in Denmark, Spain and Sweden, [30 to 40]* % in Belgium, [20 to 30]* % in Italy, [20 to 30]* % in France, [20 to 30]* % in the Netherlands, [20 to 30]* % in Portugal and [10 to 20]* % in the United Kingdom. Other main competitors were Aventis with an EEA market share of [5 to 10]* %, [30 to 40]* % in Denmark, [10 to 20]* % in Spain, [10 to 20]* % in Portugal, [10 to 20]* % in France, [10 to 20]* % in Greece, [10 to 20]* % in the Netherlands, [10 to 20]* % in the United Kingdom, and DuPont with an EEA market share of [5 to 10]* %, [10 to 20]* % in Germany, [10 to 20]* % in Austria and the Netherlands, and [5 to 10]* % in the United Kingdom.

(379) The parties' products in this market are either broad spectrum herbicides or graminicides. Novartis' broad spectrum products are based on the active ingredients metobromuron, terbutryn, prometryn and terbuthylazine. These products account for [5 to 10]* % of total EU sales in 1999 of broad spectrum herbicides for use in potatoes. In graminicides Novartis has products (Agil/Falcon) based on the active ingredient propaquizafop, which, according to Novartis, account for [0 to 5]* % of total EU sales of graminicides for use in potatoes, since they are only used in potatoes in Italy (see, however, below). AstraZeneca's main broad spectrum product is Boxer/Defi, based on the active ingredient prosulfocarb. This product alone has [20 to 30]* % of total EU sales of broadspectrum herbicides for use in potatoes, with five other products accounting for another [5 to 10]* % of sales in this segment. In graminicides AstraZeneca has a product (Fusilade) based on the active ingredient fluazifop-p-butyl. Fusilade accounts for [10 to 20]* % of total EEA sales of graminicides for use in potatoes.

(380) The parties argued in the notification that the majority of Novartis' sales is based on an active ingredient (metobromuron) that has been phased out in 1999. However, in a later submission the parties claim that metobromuron (and the formulations based on metobromuron) will be phased out in 2000. The products based on metobromuron were in 1999 sold in Austria, Belgium, France, Italy and the Netherlands. This

([83]) The parties have in a later submission argued that the market shares of AstraZeneca for Greece and Ireland given in the notification erroneously included sales of non-selective herbicides. The parties would then not have a combined market share above [20 to 30]* % in these two countries.

leads to the parties having very high market shares in Belgium and France ([50 to 60]* % and [50 to 60]* %). In both countries both AstraZeneca and Novartis only sold products in the broad spectrum segment where the parties estimate that they had [60 to 70]* % in Belgium and [60 to 70]* % in France. On the basis of the very high market shares, which are furthermore concentrated in one segment of the market, it can be concluded that, with the continued sale of metobromuron-based products, the concentration would lead to the creation of a dominant position on the Belgium and French markets for potato herbicides.

POST-EMERGENCE GRAMINICIDES FOR USE IN POTATOES

(381) Furthermore, there is an issue in the market for post-emergence graminicides for use in potatoes in Denmark. Novartis' product Agil is registered for use in potatoes in Denmark, yet Novartis does not indicate any sales of Agil in potatoes, but instead allocate all sales of Agil in Denmark to other crops (oilseeds and sugar beets). On the other hand, the parties have indicated that AstraZeneca with Fusilade has [60 to 70]* % of sales in the graminicides segment in Denmark. The parties claim that the remaining [30 to 40]* % is taken by Dow's product Gallant, based on the active ingredient haloxyfop. However, Gallant is not registered for use in potatoes in Denmark, and there is no other similar product (post-emergence graminicide) registered in Denmark. Hence, even if Novartis is correct in its assumption that farmers have not until now used Agil as a potato herbicide in Denmark, the proposed concentration would leave farmers with no other choice than Syngenta's products in the post-emergence graminicides segment.

(382) AstraZeneca's internal documents reflect that there may already be less competition in the post-emergence graminicides market than in many other crop protection markets. […]*

(383) The parties have indicated which products are the best to control specific grasses in potatoes. Novartis indicates that for the grasses *agropyron repens, cynodon dactylon, sorghum halepense, digitaria sanguinalis* and *echinochloa crus galli* either Agil/Falcon or Fusilade is the best product. AstraZeneca indicates that for the grasses *agropyron repens, cynodon dactylon, sorghum halepense, avena fatua* and *alepecurus myosuroides* either Agil/Falcon or Fusilade is the best product. Agil/Falcon and Fusilade are therefore considered by the parties to be technically very good products compared with their competitors' products.

(384) Furthermore, Fusilade is the most successful post-emergence graminicide on the European market. In internal documents AstraZeneca estimates that Fusilade has [40 to 50]* % of the overall sales of these graminicides in Europe. However, the Commission's market investigation shows that Fusilade's share is probably closer to [20 to 30]* % while Agil/Falcon's share is around [10 to 20]* %. […]*

(385) Several respondents in different countries, both distributors, crop consultants and farmers' organisations, have pointed to the very strong position that the new entity would have in the post-emergence graminicides markets as a result of the combination of Fusilade and Agil/Falcon.

(386) For all the above reasons, in particular the fact that the parties' products are the only products registered in Denmark for use as potato graminicide, the notified operation will lead to the creation or strengthening of a dominant position in the Danish market for post-emergence graminicides for use in potatoes.

SUGAR BEET HERBICIDES

(387) In 1998, the EEA-wide turnover in sugar beet herbicides was ca. EUR […]*. The most important national sugar beet herbicide markets are Germany (EUR […]*), France (EUR […]*) and Italy (EUR […]*).

(388) For sugar beet herbicides in the EEA, the parties estimate that they in 1998 command a mere [0 to 5]* % market share with sales of EUR […]*. The only country in which the combined market share of the companies exceeds [10 to 20]* % is Greece ([20 to 30]* %).

(389) The market shares of the merging parties give not, by themselves, reason for concern. Nevertheless, as mentioned in the section on potato herbicides, Syngenta would bring together two of the three leading products treating grass post-emergence in several crops, among which sugar beets (Fusilade of AstraZeneca and Agil/Falcon of Novartis).

POST-EMERGENCE GRAMINICIDES FOR USE IN SUGAR BEETS

(390) In this market the parties would have [50 to 60]* % in the United Kingdom and [50 to 60]* % in Belgium. The

parties have furthermore indicated that in Denmark they would have a combined share of [60 to 70]* % (Fusilade [60 to 70]* %, Agil [0 to 5]* %) with Dow's Gallant having the remaining [30 to 40]* %.

(391) The parties have indicated which products are the best to control specific grasses in sugar beets. Novartis indicates that for the grasses *agropyron repens, cynodon dactylon, sorghum halepense, digitaria sanguinalis* and *echinochloa crus galli* either Agil/Falcon or Fusilade is the best product. AstraZeneca indicates that for the grasses *agropyron repens, avena fatua* and *alepecurus myosuroides* either Agil/Falcon or Fusilade is the best product. Agil/Falcon and Fusilade are therefore considered by the parties to be technically very good products compared to their competitors' products.

(392) As indicated above, several respondents in different countries, both distributors, crop consultants and farmers' organisations, have pointed to the very strong position that the new entity would have in the post-emergence graminicides markets as a result of the combination of Fusilade and Agil/Falcon. […]*

(393) For all the above reasons, the concentration will create or strengthen a dominant position in the market for post-emergence graminicides for use in sugar beets in the United Kingdom, Belgium and Denmark.

OIL SEED HERBICIDES

(394) In 1998, the EEA-wide turnover in oil seed herbicides was about EUR […]*. The two most important national oil seed herbicide markets are France (EUR […]*), and Germany (EUR […]*).

(395) For oil seed herbicides in the EEA, the parties estimate that in 1998 they have a [20 to 30]* % market share (N [10 to 20]* % + AZ [5 to 10]* %) with sales ofEUR […]*, with market shares exceeding [20 to 30]* % in Germany ([20 to 30]* %), Spain ([20 to 30]* %), Italy ([20 to 30]* %) and France ([30 to 40]* %).

(396) The parties' products in the market for oil seed herbicides are the following. Novartis has broadleaf products based on the active ingredients pyridate and clomazone. These are important in Germany where they in 1999 had [30 to 40]* % of the broadleaf segment. At the EU level they had [20 to 30]* % of the broadleaf segment. Novartis' broad spectrum products are based on the active ingredients dimethachlor, clomazone, tebutam and terbutryn. These products account for [10 to 20]* % of total EU sales in 1999 of broad spectrum herbicides for use in oil seed crops with important shares in France ([30 to 40]* %) and Spain ([10 to 20]* %) in this segment. In graminicides Novartis has products […]* based on the active ingredient propaquizafop and another (Dual) based on metolachlor. Dual accounts for [0 to 5]* % and Agil/Falcon for [10 to 20]* % of total EU sales of graminicides herbicides for use in oil seed crops. Agil/Falcon has a share of [20 to 30]* % of this segment in Germany. AstraZeneca has no broadleaf herbicides for this crop. AstraZeneca's main broad spectrum product is Racer based on flurochloridone, which has a share of [30 to 40]* % of the broad spectrum segment in Spain. In graminicides AstraZeneca has Fusilade based on the active ingredient fluazifop-p-butyl. Fusilade accounts for [10 to 20]* % of total EEA sales of graminicides for use in oil seed crops, with shares of [30 to 40]* % in Germany and [10 to 20]* % in the United Kingdom. Looking at the market shares of graminicides as a whole, the parties would have [60 to 70]* % in Germany and [30 to 40]* % in the United Kingdom.

The above analysis shows that there are no competition concerns on the overall market for oil seed herbicides but that the situation for post-emergence graminicides warrants further attention.

POST-EMERGENCE GRAMINICIDES FOR USE IN OIL SEED CROPS

(397) In the market for post-emergence graminicides for oil seeds crops the parties would have [60 to 70]* % in Germany, [50 to 60]* % in the United Kingdom and [60 to 70]* % in Denmark. A particular concern has been mentioned by a respondent with regard to the Danish market for oilseed rape graminicides where the parties' market share exceeds [50 to 60]* % with the products Fusilade from AstraZeneca ([20 to 30]* %) and Agil from Novartis ([30 to 40]* %), the only other registered product being Dow's Gallant (based on haloxyfob). The parties indicate that, contrary to the situation in other countries where six-seven post-emergence grass herbicides are registered, Denmark has a restrictive policy of registering new products when a certain number of valuable alternatives are already present on the market. However, as indicated above, also in other countries both distributors, crop consultants and farmers' organisations, have pointed to the very strong position that the new entity would have in the post-emergence graminicides markets as a result of the combination of Fusilade and Agil/Falcon. […]* The parties have indicated which products are the best to control specific grasses in oil seed crops. Novartis

indicates that for the grass weed *agropyron repens* Fusilade is the best product while AstraZeneca indicates that for the grasses *agropyron repens, avena fatua* and *alepecurus myosuroides* either Agil/Falcon or Fusilade is the best product. Agil/Falcon and Fusilade are therefore considered by the parties to be technically very good products compared with their competitors' products.

(398) The elimination of Agil/Falcon as a competitor to Fusilade will therefore create or strengthen a dominant position in the markets for post-emergence graminicides for use in oil seed crops in Denmark, Germany and the United Kingdom.

RICE HERBICIDES

(399) In the notification, the parties have indicated that AstraZeneca had no sales in rice herbicides in France while Novartis had a market share of [90 to 100]* % in 1997 and 1998. However, a respondent to the Commission's market investigation indicated that AstraZeneca had sales in France in 1996, 1997 and 1998. AstraZeneca confirmed on 10 May 2000, shortly before the statement of objections had to be sent out, that the notification was not correct on this issue. As a result, the Commission was not in a position to launch a full market investigation into this market. However, on the basis of the information provided by the parties, the transaction raises, as shown below, competition concerns.

(400) In the notification the size of the market for rice herbicides in 1997 and 1998 was given as EUR […]*. According to AstraZeneca the growing of rice in France is limited to the Camargue area. AstraZeneca indicates that its only rice herbicide product is Ordram Stauffer (concentration 750 g/l), which is based on the active ingredient molinate. AstraZeneca's ex-manufacturer sales in 1998 were EUR […]* and in 1999 EUR […]*. According to AstraZeneca, Molinate is generically available in France and generic molinate sales by Sipcam are estimated at EUR […]* in both 1998 and 1999. AstraZeneca also submit that the total size of the market indicated in the notification was wrong and instead estimate it to be approximately EUR […]* at end user level and EUR […]* at the ex-manufacturer level. This would give AstraZeneca a market share of about [10 to 20]* % in 1998 and about [10 to 20]* % in 1999.

(401) Novartis sales for its products Sofit and Setoff were about EUR […]* in 1998 giving it a market share of [40 to 50]* % according to the revised estimate of the total market size, while it was [90 to 100]* % of the market size submitted in the notification. However, according to the parties this has been decreasing following the registration of the product Gulliver from DuPont and in 1999 Novartis sales were only EUR […]* giving a share of [30 to 40]* % of the revised estimate of the total market.

(402) According to the market estimate submitted by AstraZeneca, the combined market share would be [60 to 70]* % in 1998 and [40 to 50]* % in 1999. However, the parties had presented originally an estimate of the total market size that was considerably smaller. On this basis, the Commission considers that the market shares submitted by AstraZeneca constitute the minimum share that the parties can be considered to have. Furthermore, the parties have not indicated that any of the other competitors might have a substantial market share. The submission made by AstraZeneca that the overlap will be eliminated as AstraZeneca has already decided to discontinue Ordram Stauffer, a molinate formulation that it sells only in France, cannot be taken into account for the purpose of this assessment because simply stopping the sales of the AstraZeneca formulation would give the sales force of the merged entity the possibility to recoup these sales with Novartis' remaining products. Furthermore, it can be noted that AstraZeneca has indicated that it has not yet stopped manufacturing the substance. Even if this were to take place in 2000, as indicated by AstraZeneca, the merged entity would continue to sell existing stock. Furthermore, AstraZeneca indicates that the registration of Ordram Stauffer remains valid until 2008, thereby giving it the possibility to reverse, at any time until that date, its current apparent decision to stop manufacturing the product. Finally, AstraZeneca sells another formulation under the same brand name in other countries and might later introduce this into France, although it has stated that this would be uneconomical.

(403) As indicated above, the CO form had not identified the French rice herbicide market as an affected market. However, the parties have acknowledged that there are grounds for competition concerns. They have thus proposed that AstraZeneca grant an exclusive licence to manufacture and sell AstraZeneca's molinate-based herbicide formulation bearing the name Ordram-Sopra, and any substantially similar replacement formulation that Syngenta might register, for use on rice in France, until 2008, unless no purchaser is willing to accept such a licence to manufacture, in which case AstraZeneca will grant an exclusive right to use and distribute the Ordram-Sopra formulation (or its replacement, as described above) for use on rice in France and supply such Ordram-Sopra formulation (or its replacement, as described above) as the purchaser may require for use on rice in France.

(404) This undertaking will eliminate the overlap on the French market for rice herbicides. On this basis, the Commission considers that the fulfilment of this commitment eliminates the above competition concerns. Therefore, the Commission did not declare the notification incomplete.

HERBICIDES FOR FRUITS AND NUTS

(405) In the notification the parties submit that the EEA-wide turnover in 1998 in herbicides for fruits and nuts was approximately EUR […]*. The two most important national markets were France (EUR […]*), and Spain (EUR […]*).

(406) The parties argue that the traditional distinction between 'selective' and 'non-selective' herbicides does not apply to perennial crops such as vines and orchards. The parties have instead in this market made a distinction between those which have residual or residual plus foliar activity (selective) and those with only foliar activity (non-selective). The selective herbicides are mainly used pre-emergence while non-selective are used post-emergence. According to the parties, the use of post-emergence non-selective herbicides has been increasing relative to the pre-emergence selective herbicides and will continue to do so, because they are more environmentally friendly and more cost effective. The product which mainly has benefited from this development is Monsanto's RoundUp.

(407) Using the above classification, the parties' product portfolios in fruits and nuts have until recently been quite complementary. AstraZeneca was mainly active with non-selective herbicides such as Gramoxone (paraquat), Giror (paraquat + amitrol) and Touchdown (sulfosate) while Novartis' main strength has been in selective herbicides with products based on the active ingredients terbuthylazine, diuron, terbumeton, norflurazon, diclobenil and simazine. Only in France is this picture of complementarity less clear, as will be explained below.

(408) For herbicides for fruits and nuts in the EEA, the parties submitted in the notification that they in 1998 had a [30 to 40]* % market share (N [10 to 20]* % + AZ [10 to 20]* %) with sales of EUR […]*. Their combined market share exceeded [20 to 30]* % in Greece ([20 to 30]* %), Italy ([20 to 30]* %), Denmark ([30 to 40]* %), France ([40 to 50]* %) and Portugal ([50 to 60]* %). In a later submission, the parties have, however, revised their figures for Portugal, stating that their original submission had overestimated the parties' market shares. Based on these revised figures, the parties' market share would be [20 to 30]* % in 1998 and [30 to 40]* % in 1999. The market investigation has broadly confirmed that the present combined market shares in countries other than France are not such that it is likely that the concentration would lead to the creation or strengthening of a dominant position, taking also into consideration the complementary nature of the parties' product portfolios.

(409) It should, however, be noted that AstraZeneca has plans to introduce products based on the active ingredient flazasulfuron in several countries. Such products were registered in France and Spain in 1999 and sold in France in 1999 (AstraZeneca has not given information as to whether there were any sales in Spain in 1999). Registrations are anticipated in Portugal and Austria in 2000, Germany, Italy and Greece in 2001. As described below, the products Katana and Mission based on flazasulfuron are expected to be very successful in France, which is the only country for which AstraZeneca has provided sales projections.

France

(410) As mentioned in recital 407, in other countries the parties' product portfolios are largely complementary in that AstraZeneca's products are mainly non-selective, while Novartis' are mainly selective. This is not the case in France, where Novartis is present in the non-selective segment with its products Weedazol (ata) and Glifazol (ata + glyphosate). Furthermore, AstraZeneca introduced in 1999 two new products, Katana and Mission based on the active ingredient flazasulfuron. There is some disagreement about whether Katana/Mission are non-selective, as first claimed by the parties, or selective, as claimed by a competitor. However, the parties have also later submitted that Katana/Mission will compete in the residual sector which would seem to indicate that it ought to be classified as selective.

(411) According to the parties, the total market size in France was EUR […]* in 1999, up from EUR […]* in 1998. The grape segment is with EUR […]* much larger than the fruits and nuts segment with EUR […]*. The parties submit that their shares in these two segments were the following:

	Market size (EUR million)	Novartis	AstraZeneca	Syngenta
Fruit and nuts (total)	[…]*	[20-30]* %	[5-10]* %	[30-40]* %
Grape	[…]*	[30-40]* %	[5-10]* %	[30-40]* %
Fruit	[…]*	[30-40]* %	[10-20]* %	[40-50]* %

(412) According to the notification, the other main players in the French market were in 1998 Monsanto ([20 to 30]* %, Dow ([10 to 20]* %) and Aventis [5 to 10]* %. The parties' combined share is therefore […]* as big as that of number two Monsanto. Furthermore, Monsanto's position is mainly the result of sales of RoundUp, its successful non-selective herbicide. By contrast, the parties will have a well-balanced portfolio of both selective and non-selective herbicides.

(413) The parties' already strong position could be further strengthened as a result of regulatory pressure on the cheap active ingredient diuron. While there apparently are no concrete plans to prohibit the use of diuron in France, the permitted use rate has been reduced and could be further reduced. If that happens, the more expensive products Katana/Mission and Novartis' products based on terbuthylazine would increase their market share.

(414) The main reason for concern in the French market is, however, the recent introduction of AstraZeneca's products, Katana/Mission, based on the active ingredient flazasulfuron. These products have only registration for use as grape herbicides. They were introduced in autumn 1999, judging by a press release, probably in the middle of September. […]*

(415) The parties argue that that the non-selective post-emergence sector is highly competitive as Monsanto has aggressively reduced price to expand its market share and has become the cornerstone of herbicide strategy. They state that the new Katana/Mission products compete in the residual sector. However, they also argue that the strong sales projections should not give reason to concern as flazasulfuron is owned by ISK and only distributed by AstraZeneca. Given the close collaboration between ISK and AstraZeneca in developing these and other products, the parties have, however, not explained why the fact that ISK owns flazasulfuron should hinder Syngenta in having a dominant position. Furthermore, the parties argue that strong competitors to flazasulfuron are likely to enter the market in the next two years. They specifically mention products based on the active ingredients azafenadin (DuPont), thiazopyr (Rohm and Haas) and flumioxazine (BASF/American Cyanamid). The market investigation has not confirmed that the introduction of these new products is likely to constrain the parties' position in the residual segment to a significant degree. [Competitors' business secrets]* Finally, the parties argue that flazasulfuron, if successful, is likely to cannibalise older products in the residual sector such as Novartis's current range. While it may be true that there will some loss of market share of products in Novartis' current range, it should also be noted that Novartis in 1998 had [50 to 60]* % of this segment, and in 1999 [40 to 50]* %. The sales forecasts for Katana/Mission would give the products a share of [40 to 50]* % in 2001 in the residual (selective) segment. Unless Katana/Mission completely replace the sales of Novartis' entire product range in this segment, there is bound to be a (probably significant) addition to Novartis' already high share of the sales in the segment. In fact, assuming that the current market participants all would lose sales in the same proportion, the parties' share in this segment would be [60 to 70]* % in 2001.

(416) The parties have in the reply indicated that the above calculations are speculations which are not likely to materialise. In particular, they indicate that flazasulfuron suffers from selectivity issues and that its potential therefore will be limited by the need to avoid the build-up of weed resistance. The calculations are, however, based on sales projections submitted by AstraZeneca during the investigation of this case and are roughly confirmed by other market participants as well as by internal AstraZeneca documents. The parties have not presented evidence that sufficiently clearly demonstrates that AstraZeneca has significantly overestimated the potential of flazasulfuron.

(417) The concentration will therefore create a dominant position in the French market for herbicides for fruits and nuts.

HERBICIDES FOR SOYBEANS

(418) Italy is the only national market in which both parties are active and the combined market shares exceeds [30 to 40]* %. In this market, which in 1998 had a value of

EUR […]*, AstraZeneca had in 1998 a market share of [20 to 30]* % while Novartis had [10 to 20]* %. However, [10 to 20]* percentage points of AstraZeneca's [20 to 30]* % were achieved by the distribution of BASF's range. BASF has in 1999 given notice to end this distribution arrangement, after which the combined market share of the parties will be less than [20 to 30]* %. Furthermore, all the major post-emergence graminicides are available and achieve significant sales in Italy. For these reasons the proposed concentration would not lead to the creation or strengthening of a dominant position on the Italian market for soybean herbicides, nor on a separate relevant market for post-emergence graminicides.

HERBICIDES FOR VEGETABLES

(419) There is no national market in which the parties have overlapping activities and a combined market share of more than [30 to 40]* %. Furthermore, Novartis' post-emergence graminicide Agil/Falcon only achieves significant sales in vegetables in Italy ([5 to 10]* % of total graminicides sales) and the United Kingdom ([10 to 20]* % of total graminicides sales) where AstraZeneca's Fusilade is not as important as in other markets. Fusilade thus only has [10 to 20]* % of vegetable graminicides sales in the Italy and [0 to 5]* % in the United Kingdom. For these reasons the proposed concentration would not lead to the creation or strengthening of a dominant position on the market for vegetable herbicides, nor on a separate relevant market for post-emergence graminicides.

C.4 *INSECTICIDES*

(420) As for insecticides, Europe accounts for only about [10 to 20]* %, or EUR 1 100 million, of the global agro-insecticide market of around EUR 5 500 million. Therefore, insecticides constitute the smallest crop protection segment in Europe. The only EEA-wide markets with a total turnover above EUR 100 million are insecticides for fruits and nuts (EUR 300 million) and insecticides for vegetables (EUR 115 million).

INSECTICIDES FOR CEREALS

(421) Despite the fact that various insects attack cereal crops, aphids are the major pests by far. Therefore, the cereal insecticides market can be considered an aphid market. Aphids are foliar insects. The parties have strong positions on the European-wide level ([30 to 40]* %) and in Belgium ([70 to 80]* %), Denmark ([40 to 50]* %), France [40 to 50]* % and Germany ([30 to 40]* %). The market share figure for Germany is, taking into account sales figures submitted by competitors, in all likelihood slightly above [30 to 40]* %. The next competitors in cereal insecticides are Aventis with a European-wide market share of [10 to 20]* %, [10 to 20]* % in Belgium, [10 to 20]* % in France and Bayer with [5 to 10]* % in the EEA, [10 to 20]* % in France and [10 to 20]* % in Germany. Syngenta would, therefore, be roughly […]* times as big as the nearest competitor in all of the above markets.

(422) In the market investigation, several distributors and crop consultants have indicated that the parties will have the most effective insecticides, the so-called pyrethroids for use as foliar insecticides. Pyrethroids were first commercialised in the early seventies. Novartis' active substance is tau-fluvalinate, sold under the tradenames 'Mavrik' and 'Klartan'. AstraZeneca's sells lambda-cyhalothrin under the tradename 'Karate'. On a world-wide basis lambda-cyhalothrin is the second best selling pyrethroid compound, followed closely by Aventis' deltamethrin (trade name Decis). In the EEA, lambda-cyhalothrin is the number one pyrethroid, ahead of deltamehtrin (Aventis), cypermethrin and Novartis' tau-fluvalinate. The market share of pyhretroids is likely to further increase since insecticides based on the two other main chemical classes, organophosphates (OPs) and carbamates, face regulatory threat as concerns the registration process.

(423) The parties argue that their two pyrethroids will lose patent protection in 2000 (Tau-fluvalinate) and 2003 (lambda-cyhalothrin). […]* The third most important phyrethroid compound in the EEA, cypermethrin, is already produced by several generic suppliers. However, the loss of patent protection is just one necessary condition for generic competition. Another important step for generic producers to actually compete is to obtain registration which is often a lengthy and costly process. Moreover, these documents also indicate that the regulatory threat on OPs represents a medium to long term growth opportunity for pyrethroids, that their market shares are increasing and that there seems to be some unused potential. In the EEA, the market share of Syngenta increased from [30 to 40]* % in 1997 to [40 to 50]* % in 1998, in a shrinking market in that period. Therefore, the strong position of the parties in insecticides for use in cereals will very likely be maintained for the near future.

(424) For the above reasons, the concentration will lead to the creation of a dominant position in the market for foliar insecticides for use on cereals in Belgium, Denmark, France and Germany.

INSECTICIDES IN FORAGE CROPS

(425) The parties would have a combined market share of [50 to 60]* % in France (Novartis [20 to 30]* %, AZ [20 to 30]* %). Total sales in France amount to EUR […]*. Since this crop is almost entirely located in France, the parties would also have a very high overall market share in the EEA ([40 to 50]* %). Competitors in this market are Bayer with [10 to 20]* % of the sales in France, and Aventis with [10 to 20]* %. The great majority of products sold in this market are based on pyrethroids which account for almost [80 to 90]* % of all sales. Consequently, the same reasoning as for cereal insecticides applies.

(426) The conclusion is, therefore, that the concentration will lead to the creation of a dominant position in the market for foliar insecticides for use in forage crops in France.

INSECTICIDES FOR POTATOES

(427) The market leader for potato insecticides in the EEA is Aventis with a share of [40 to 50]* %, followed by the parties with [10 to 20]* %. Aventis' lead results from its strong position on the Dutch market which is by far the most important market in terms of sales in the EEA. The parties will become the market leader in two national markets. In Belgium Syngenta would account for [40 to 50]* % of the market, followed by Aventis with around, [20 to 30]* %. In France the parties would have [60 to 70]* % of the sales, followed by Aventis with [10 to 20]* %. Both markets are small markets with sales of EUR […]* and EUR […]* respectively, down from EUR […]* and EUR […]* respectively in 1997. The market shares for AstraZeneca includes also soil insecticides whereas Novartis does not manufacture nematocides. Therefore, the combined market share for foliar insecticides in potatoes, for which there is an overlap, is slightly lower. This could have the effect that in Belgium the market share of the parties is below [30 to 40]* % and closer to the market share of the second largest player. However, the Commission does not need to decide on the basis of these elements whether the notified operation would lead to the creation of a dominant position on the Belgian market for potato insecticides as any competitive problems would be removed as a result of the implementation of the commitments submitted for the French, German, Belgian and Danish cereal insecticide markets, French forage crop and French potato insecticide markets where the merger is found to lead to the creation of a dominant position.

(428) Novartis claims that its product portfolio is ageing. Its sales in France (and Belgium) were derived almost exclusively from its pyrethroid tau-fluvalinate (Mavrik) which is going to lose patent protection in 2000. However, Novartis has two new foliar insecticides in the pipeline for which registration is sought beginning in 2000. Novartis is in the process to launch the new active ingredient pymetrozine, which, according to Novartis, is a unique chemistry giving outstanding control of aphids and sucking pests. This product has a novel mode of action and is designed to substitute OPs, carbamates and pyrethroids. Registration in the major EEA potato farming countries is foreseen for 2000 and 2001. In addition, Novartis is going to launch the new active ingredient thiomethoxam […]*. Thiamethoxam belongs to the modern class of neonicotinoids and has, according to Novartis internal documents, an outstanding performance against both sucking and chewing insects. Moreover, it can be used to control soil insects as well. In addition, AstraZeneca has recently launched fosthiazate, a new nematicide, it distributes for ISK in Great Britain. Consequently, the strong position of the parties in France is likely to be kept by the parties, since competing new products by Aventis (Acetamiprid) and Bayer (Thiacloprid) will be launched only in […]* and the impact of at least one of the products is unlikely to be substantial ([84]).

(429) For the above reasons, namely the parties accounting for [60 to 70]* % in France; the second largest player, Aventis, only having one-third of the parties' market share; and the parties' introducing a very promising new substance already this year, several years in advance of Aventis, the concentration will lead to the creation of a dominant position in the market for foliar insecticides for use in potatoes in France.

INSECTICIDES FOR VEGETABLES

(430) Total sales in the EEA account for about EUR […]*. Syngenta would become the market leader with a

([84]) [Competitors business secret]*

market share of [20 to 30]* %, followed by Bayer with [20 to 30]* %, Aventis with [10 to 20]* % and American Cyanamid with [5 to 10]* %. The parties would become the clear market leader in Germany and France. The German market accounted for EUR […]*, of which Syngenta would have [40 to 50]* %. Novartis adds only [0 to 5]* % to AstraZeneca's [40 to 50]* %. Therefore, in the case of Germany, it can be assumed that in view of the extremely small addition of market share the leading position of AstraZeneca will not materially be changed. The French market of insecticides for vegetables accounted for total sales of EUR […]* in 1998. Syngenta will become the clear market leader with [40 to 50]* % (AZ [20 to 30]* % + N [10 to 20]* %). Aventis would become the number two with [20 to 30]* %. The parties were able to increase their market share from 1997 to 1998 from [30 to 40]* % to [40 to 50]* %; this in a broadly stable market.

(431) The parties argue that they focus on different crops and types of insects. Novartis' portfolio is based on the active ingredients abamectin and cyromazine. Abamectin is mainly sold for use in greenhouses to control mainly, but not only leafminers, mites and thrips in tomatoes. Cyromazine is mainly sold for the control of leafminers in lettuce. Zeneca is selling lambda-cyhalothrine and pirimicarb, used for the control of aphids on the open field vegetable crops. However, these boundaries between greenhouse and open field as well as between the various types of vegetables are not such as to constitute separate markets. Moreover, the parties would have a large portfolio of key molecules, which enables them to offer complete solutions for the crop problems.

(432) Furthermore, the parties argue that there is generic competition for Novartis' active ingredients and that its products will also be targeted by the introduction of new products by competitors Aventis (Acetamiprid), American Cyanamid (Clorfenapyr), Dow (spinosad) and DuPont (indoxacarb), whereas Novartis has only one new product to be introduced in France, pymetrozine.

(433) Dow's new product spinosad is the most promising of all competitors' new products. Sales in France will start in […]*. Sales projections for 2003 are EUR […]*. The introduction of the other new products will not have a sizeable impact on the position of the parties. Aventis's new active ingredient will only be introduced in[…]*, well after the marketing of the new product by Novartis. Its sales projections are […]*. Cyanamid's Chlorfenapyr will not be marketed in France before […]* and is for use in greenhouses only. It will not have a material impact on the market. DuPont's new product indoxacarb will first be marketed in France in […]*. It has a very narrow spectrum. Therefore, projected sales for 2003 are only […]*.

(434) The sale of Novartis' pymetrozine in France starts in 2000. Pymetrozine is described in Novartis' own papers as a vital growth product. Sales projections for […]* are […]* times the sales in 1999 when the product was first introduced in Europe. Already in 2001 it is forecast to achieve sales equivalent to around [5 to 10]* % of the EEA market. These sales projections put pymetrozine at least at the same footing the Dow's new product spinosad. However, the parties will have the largest customer base today, with a market share of [40 to 50]* % as opposed to Dow with less than [5 to 10]* %. Consequently, the strong position of the parties in France is likely to be maintained.

(435) For the above reasons, namely increased sales of the parties in a stable market; the parties combined market share of [40 to 50]* % being more than twice that of its nearest competitor; the parties having one of only two new promising substances, the other belonging to a player that is today very small, the concentration will lead to the creation of a dominant position in the market for foliar insecticides for use in vegetable crops in France.

Conclusion on insecticides

(436) Taking into consideration all the above factors, the Commission considers that the proposed merger will create a dominant position on the national markets for foliar insecticides in cereals in Belgium, Denmark, France and Germany, forage crops in France, potatoes in France and vegetables in France.

C.5 *PLANT GROWTH REGULATORS*

(437) The parties' products overlap for plant growth regulators for ornamentals in Belgium, France and the Netherlands. The single largest market is the Netherlands with total sales of EUR […]* where, according to the parties, Novartis had a [40 to 50]* % market share in 1998 and [30 to 40]* % in 1999, while AstraZeneca had [10 to 20]* % in 1998 and [5 to 10]* % in 1999.

In France total sales are worth EUR […]* and Novartis has a [70 to 80]* % market share in 1998 and around [50 to 60]* % in 1999, while AstraZeneca had […]* in 1998 but [5 to 10]* % in 1999. In Belgium, sales account for EUR […]*. Novartis had in 1998 [50 to 60]* % and [50 to 60]* % in 1999, while AstraZeneca had [30 to 40]* % in 1998 and [20 to 30]* % in 1999. According to the parties, the only other major players in these markets are Fine AgroChemicals with [40 to 50]* % market share in the Netherlands in 1998, [40 to 50]* % in the Netherlands in 1999, [10 to 20]* % in France in 1998 and approximately [10 to 20]* % in France 1999, and Dow AgroSciences with approximately [10 to 20]* % in Belgium in both 1998 and 1999. The market investigation has, however, shown that the parties' data may be overstating the position of Fine Agrochemicals; in the Netherlands the parties' combined market share could thus be as high as [60 to 70]* %.

(438) The parties state that the whole of Novartis' business is based on the non-exclusive distribution of products of which the trademark and the registrations are owned by the originator, UniRoyal. The parties also indicate that daminozide is the most important active ingredient, accounting for [60 to 70]* % of total sales in the EEA. Daminozide is produced by UniRoyal and Fine AgroChemicals. Novartis sells UniRoyal's product under the trade name Alar in Belgium, the Netherlands and France (Alar 65 in the Netherlands and Alar 85 in Belgium and France). In Belgium and the Netherlands, Fine Chemicals sells its formulations under the trade name Dazide and other trade names to a number of local distributors while Dazide in France is distributed by the SIPCAM group. Novartis considers that each producer's products accounts for around half of the daminozide sales. In Belgium Novartis has also been selling Atrinal. This product has, however, been removed from Novartis' range, and stocks will be sold out by the end of 2000.

(439) AstraZeneca's product Bonzi is based on the active ingredient paclobutrazol. AstraZeneca markets Bonzi in Belgium and the Netherlands, while Bonzi in France is distributed by Etablissement Puteaux. In the Netherlands AstraZeneca furthermore distributes a product Berelex of Abbott Labs in two formulations. Abbott Labs sells the same formulations to other companies under different brand names.

(440) Despite the fact that Novartis' distribution agreement is non-exclusive, it seems that there is currently no other distributor for UniRoyal's product. Furthermore, UniRoyal is AstraZeneca's exclusive licensee for the Bonzi product sold into ornamentals in the United States. This fact means that it would become more delicate for UniRoyal to change distributor for Alar after the merger.

(441) The concentration would combine the two most important brands in plant growth regulators for ornamentals in both Belgium and the Netherlands. The competition given to Alar by Dazide would be made less efficient by the addition of Bonzi, which is the main other type of plant growth regulator, to the portfolio of Novartis. In France, the strong position of Novartis would be further strengthened by the addition of Bonzi.

(442) For these reasons, the concentration would lead to the creation or strengthening of a dominant position in the markets for plant growth regulators in Belgium, the Netherlands and France.

C.6 *SEED TREATMENT FOR CEREALS IN SPAIN*

(443) The market for cereal seed treatment in Spain totalled sales of EUR […]* in 1998. AstraZeneca is the market leader with a market share of [50 to 60]* %. Novartis has a market share of [5 to 10]* %. Aventis would be the number two with a market share of [10 to 20]* %.

(444) It may be noted that AstraZeneca is not active outside Spain in seed treatment for cereals. However, overall in the EEA, Novartis is the clear market leader with [50 to 60]* % (number one or two in most other Member States).

(445) AstraZeneca's business is based entirely on formulations of an off-patent active substance, maneb, sourced from third parties. [50 to 60]* % of sales relate to products containing only this substance, [30 to 40]* % relate to mixtures with an off-patent active substance manufactured and originally patented by AstraZeneca (permethrin), and only [5 to 10]* % (equivalent to [5 to 10]* % market share) relate to mixtures with an AstraZeneca patented active substance.

(446) The parties claim that AstraZeneca's position is not sustainable in view of the presence of three generic manufacturers offering straight maneb products. However, although these generic manufacturers offer a product that they consider to be of similar technical

quality and despite the fact that they are already some considerable time on the market, AstraZeneca maintains its high market share. The parties also indicate that […]*.

Therefore, the Commission considers that the proposed operation may lead to the creation of a dominant position on the market for seed treatment for cereals in Spain.

CONCLUSION

(447) The Commission has come to the conclusion that the transaction as originally notified is incompatible with the common market and the functioning of the EEA agreement, since it would lead to the creation of a dominant position in the following markets:

fungicide markets:

— cereal fungicides in France, Germany, the United Kingdom, Denmark, Sweden and Finland,

— sugar beet fungicides in France, Italy, Spain and Belgium,

— potato fungicides in Sweden,

— fungicides to treat powdery mildew in grapes in Austria and fungicides to treat botrytis in grapes in Austria and France;

herbicide markets:

— maize herbicides in France, Germany, the Netherlands and Belgium,

— potato herbicides in Belgium and France,

— post-emergence graminicides in potatoes in Denmark,

— post-emergence graminicides in sugar beets in the United Kingdom, Belgium and Denmark,

— post-emergence graminicides in oilseed crops in Germany, the United Kingdom and Denmark,

— herbicides for fruits and nuts in France;

foliar insecticide markets:

— cereals in Belgium, Denmark, France and Germany,

— forage crops in France,

— potatoes in France,

— vegetables in France;

seed treatment markets:

— cereals in Spain;

plant growth regulators:

— ornamentals in Belgium, the Netherlands and France.

D. **COMMITMENTS**

FUNGICIDES

CEREAL FUNGICIDES

(448) The parties have undertaken to divest the worldwide strobilurin fungicide business of Novartis, including trifloxystrobin and the mixtures with cyproconazole and propiconazole as well as the production unit in Muttenz where cyproconazole and (parts of) trifloxystrobin are currently manufactured. The purchaser would have access to, or supply of propiconazole and the relevant intermediates needed to produce trifloxystrobin. The purchaser will have to agree to toll-manufacture cyproconazole for Novartis for its non-trifloxystrobin related needs.

(449) In addition to the rights to the strobilurin fungicide business, the purchaser receives the right to produce and sell under its own trade name products based on straight cyproconazole in the EEA. During a maximum period of five years, Syngenta will have no rights to sell product based on straight cyproconazole in the EEA.

(450) The parties have also offered to divest AstraZeneca's world-wide business in the active substance flutriafol

(except for the mixtures with azoxystrobin), a substance accounting for some very limited sales as a cereal fungicide.

(451) Furthermore, the parties have committed to divest the whole of Novartis' current (meaning non-strobilurin) cereal fungicide formulations in Denmark, Sweden and Finland.

(452) The divestiture of Novartis' strobilurin fungicide business will maintain competition in the important (and growing) strobilurin segment between three companies: Syngenta, BASF, and the purchaser. On the basis of the sales forecasts of all major companies, the divestiture will reduce Syngenta's estimated market share for 2004 by [5 to 10]* % in Germany, [10 to 20]* % in France and [10 to 20]* % in the United Kingdom, thereby giving Syngenta an estimated future market share of below [30 to 40]* % in those countries and, at most, [0 to 5]* % more than BASF. Moreover, it is unlikely that the merged entity would withdraw its straight strobilurin products from the market as the purchaser would still commercialise such a product. Therefore, the merged entity would not be in the position to cause the loss of sales opportunities for the competitors with non-strobilurin products for tank-mixing. Whereas the merged entity will still have the chance to develop new mixtures on the basis of AstraZeneca's strobilurins and Novartis' (or third party's) non-strobilurin products, the strobilurin purchaser will have the possibility to do this (in the same time period) with the trifloxystrobin product portfolio and his own proprietary (or third party) substances. By granting the exclusive rights to produce and sell straight cyproconazole in the EEA in the start-up period to the strobilurin purchaser, the merged entity will not be in a position to undermine the potential of the trifloxystrobin business, including the trifloxystrobin-plus-cyproconazole mixture.

(453) The divestiture of Novartis' current portfolio in the Nordic countries eliminates the overlap on the Danish, Swedish and Finnish markets.

(454) On this basis, the Commission considers that no dominant position will be created on the cereal fungicide markets and that the competition concerns expressed in the statement of objections are thus eliminated.

SUGAR BEET FUNGICIDE MARKETS

(455) The parties offer to divest AstraZeneca's world-wide flutriafol business would totally eliminate the overlap for sugar beets. In addition, the trifloxystrobin-plus-cyproconazole mixture will also be registered for sugar beets where it is forecast to become an important product (around [10 to 20]* % market share). On this basis, the Commission considers that no dominant position will be created on these markets and that the competition concerns expressed in the statement of objections are thus eliminated.

SWEDISH POTATO FUNGICIDE MARKET

(456) The parties have undertaken to transfer to the original rights holder the whole of their EEA-wide business derived from the mixture Epok (fluazinam, an ISK substance, and metalaxyl-m, a Novartis substance). Syngenta will supply metalaxyl-m for the sole use within Epok to the company to whom ISK will grant the Epok rights. The only other product that Novartis sells on the Swedish potato fungicide market is Ridomil MZ (metalaxyl + mancozeb). The registration for this product has been revoked with effect from 31 March 2001 and will not be replaced. Therefore, the commitment has the effect of eliminating the overlap on the Swedish potato fungicide market. On this basis, the Commission considers that no dominant position will be created on this market and that the competition concerns expressed in the statement of objections are thus eliminated.

AUSTRIAN MARKET FOR FUNGICIDES TO TREAT POWDERY MILDEW ON GRAPES

(457) The divestiture of the trifloxystrobin business will also have on effect on this market as powdery mildew on grapes is one of the strengths of trifloxystrobin. In addition, the parties have undertaken to divest Novartis' product based on penconazol, accounting for a [20 to 30]* % market share in 1999, reducing the merged entity's market share to [20 to 30]* %. On this basis, the Commission considers that no dominant position will be created on this market and that the competition concerns expressed in the Statement of Objections are thus eliminated.

FRENCH AND AUSTRIAN MARKETS FOR FUNGICIDES TO TREAT BOTRYTIS ON GRAPES

(458) The parties have undertaken to transfer the distribution agreement for the products Sumisclex and Sumico

within the EEA back to Sumitomo together with the technical database and documentation. Hereby the parties have eliminated most of the overlap. The remaining AstraZeneca substance, fluazinam, accounts for sales of around [0 to 5]* % (with a potential to reach [5 to 10]* %). The remaining pro forma market share of the merged entity would be below [30 to 40]* % and similar to that of Aventis.

(459) The overlap on the Austrian market is created by an Austrian company distributing AstraZeneca's chlorothalonil. The parties have committed to grant this distributor a letter of access to AstraZeneca's database whilst the distributor has the right to source chlorothalonil from a generic producer, thereby making the distributor independent from the merged entity.

(460) On this basis, the Commission considers that no dominant position will be created on these markets and that the competition concerns expressed in the statement of objections are thus eliminated.

HERBICIDES

MAIZE HERBICIDES

(461) The parties have submitted the following undertakings relating to the maize herbicides market.

(462) In the segment of pre-emergence grass control, AstraZeneca has offered to divest the whole of its worldwide business with the active substance acetochlor, including all formulations and mixtures, all related intellectual property rights (in particular patents and trade names), know-how, documentation and registration rights. This commitment involves AstraZeneca's transferring to the entity obtaining the acetochlor business all related contracts with Monsanto, including the partnerships for the registration and production of acetochlor and the registration arrangement in Europe. In addition, AstraZeneca will divest the safener dichlormid in favour of the company acquiring the acetochlor business.

(463) The acetochlor commitment removes most of the (potential) overlap that the parties would have in the segment of pre-emergence grass control. AstraZeneca only retains the product EPTC in this segment, but this product is an old niche product without very much future market potential (for which reason EPTC will not be submitted in the Community review process) In any event, Syngenta will be faced with strong competition in the pre-emergence segment stemming from the divested acetochlor.

(464) In the segment of post-emergence broadleaf control, the parties have formally offered to divest their business based on the active substance sulcotrione. This commitment removes the current overlap that the parties have in the segment of post-emergence broadleaf control. While it is true that the parties will gradually introduce the new AstraZeneca product mesotrione as of […]*, sulcotrione is considered to be a product that is able to remain a strong product in the future and a product that will continue to be a competitive constraint to Syngenta's current and future products.

(465) In order to remove the overlap in the segment of post-emergence grass control in France, the parties have offered to stop commercialising straight atrazine in France and to hand back related trade names to the owners. This should allow competing generic atrazine companies in France to capture most of Novartis' current share in this segment of [10 to 20]* % (total market share: [0 to 5]* %). This commitment, and the fact that Aventis is co-distributor of nicosulfuron in France, has led the Commission to the conclusion that no competitive concerns remain as for the specific segment of post-emergence grass control in France.

(466) On the basis of the proposed commitments on acetochlor, sulcotrione and atrazine, the parties' combined market share will be, after remedies:

(%)

	1998 market share	1998 post-remedy	1999 current share	1999 post-remedy
EEA	[40-50]*	[30-40]*	[40-50]*	[30-40]*
FR	[50-60]*	[30-40]*	[50-60]*	[30-40]*
DE	[40-50]*	[30-40]*	[40-50]*	[30-40]*
NL	[60-70]*	[30-40]*	[60-70]*	[20-30]*
BE	[50-60]*	[20-30]*	[50-60]*	[20-30]*

(467) The three commitments offered amount to the complete elimination of the current overlap in three of the four problematic maize herbicides markets, namely Germany (market share post-divestiture: [30 to 40]* %), Netherlands ([20 to 30]* %) and Belgium ([20 to 30]* %). In France, there is a market share reduction to [30 to 40]* %. As the package also includes the newly introduced acetochlor, the Commission considers that no dominant position will be created on those markets and that the competition concerns expressed in the statement of objections are thus eliminated.

POTATO HERBICIDES IN FRANCE AND BELGIUM

(468) The parties have undertaken that Novartis will divest the whole of its EEA-wide business derived from the herbicide formulations Patoran and Igrater. This undertaking will eliminate the overlap from the proposed concentration in the Belgian and French markets for potato herbicides. On this basis, the Commission considers that no dominant position will be created on these markets and that the competition concerns expressed in the statement of objections are thus eliminated.

POST-EMERGENCE GRAMINICIDES IN POTATOES, SUGAR BEETS AND OILSEED CROPS

(469) The parties have undertaken that Novartis will divest the whole of its EEA-wide business derived from formulations which are based on the active substance propaquizafop and are sold for use on broadleaf crops (potatoes, sugar beets, oil seed crops, soybeans, cotton, and vegetables) in the EEA (Agil/Falcon brand names). This undertaking will eliminate the overlap on all national markets for post-emergence graminicides in potatoes, sugar beets and oilseed crops. On this basis, the Commission considers that no dominant position will be created on these markets and that the competition concerns expressed in the statement of objections are thus eliminated.

HERBICIDES FOR FRUITS AND NUTS IN FRANCE

(470) The parties have undertaken that AstraZeneca will terminate its distribution agreement with ISK for flazasulfuron for vines in France. [Alternatively]*, Novartis will basically divest (for some products, give licences, and for other products terminate distribution agreements with third parties) its entire portfolio of selective grape herbicides for which registrations are still valid ([85]). The competition problem identified by the Commission in the statement of objections was the combination of the promising products Katana and Mission based on flazasulfuron with Novartis' strong position in the selective grape herbicide segment. On this basis, the Commission considers that no dominant position will be created on this market and that the competition concerns expressed in the statement of objections are thus eliminated.

INSECTICIDES

(471) The parties undertake to sell Novartis worldwide pyrethroid business based on the active ingredient taufluvalinate, including brand-names (in particular Mavrik), all related intellectual property rights, know-how, documentation and registration rights. Novartis will also transfer to the purchaser the benefit of its rights under the supply agreement with BASF. In addition, the parties also undertake to grant an exclusive licence for AstraZeneca's straight pirimicarb, including the brand name Pirimor, for use on vegetables and other crops in France.

(472) The proposed undertakings will have the effect to either eliminate the overlap or bring the market share of the parties to clearly below [30 to 40]* %. The sale of Novartis' taufluvalinate business will completely eliminate the overlap for insecticides in potatoes and eliminate almost completely the overlap in insecticides for cereals and forage crops. The licence for AstraZeneca's pirimicarb straight reduces the market share of the parties for insecticides on vegetables by [5 to 10]* % to [30 to 40]* %. On this basis, the Commission considers that no dominant position will be created on these markets and that the competition concerns expressed in the statement of objections are thus eliminated.

PLANT GROWTH REGULATORS

(473) The parties have undertaken that Novartis will cease to sell the Alar branded products within the EEA and will

([85]) The Commission takes note of the fact that the registrations for the products Axian and Caragard expired in April 1998. These products are therefore not included in the commitment.

terminate its distribution agreement with Uniroyal or assign to a third party named by Uniroyal the rights currently held by Novartis for the distribution of this product in the EEA. This undertaking eliminates the overlap in the markets for plant growth regulators in Belgium, the Netherlands and France. On this basis, the Commission considers that no dominant position will be created on this market and that the competition concerns expressed in the statement of objections are thus eliminated.

SEED TREATMENT FOR CEREALS IN SPAIN

(474) The parties have committed to divest the AstraZeneca seed treatment business in Spain and will give the purchaser access to the necessary active substances, if required. On this basis, the Commission considers that no dominant position will be created on this market and that the competition concerns expressed in the statement of objections are thus eliminated,

HAS ADOPTED THIS DECISION:

Article 1

Subject to the parties' full compliance with the commitments summarised in recitals 18, 403 and 448 to 474, and set out in detail in Annexes I and II respectively, the concentration notified on 18 February 2000 whereby the undertakings Novartis AG (Novartis) and AstraZeneca plc will spin off and merge their activities in the area of crop protection into a newly incorporated company, Syngenta AG (Syngenta) and whereby Novartis will also transfer its seeds business to Syngenta, is compatible with the common market and the functioning of the EEA Agreement.

Article 2

This Decision is addressed to:

Novartis AG
Schwarzwaldallee 215
CH-4058 Basel
Switzerland

AstraZeneca PLC
15 Stanhope Gate
London W1Y 6LN
United Kingdom

Done at Brussels, 26 July 2000.

For the Commission
Mario MONTI
Member of the Commission

ANNEX I

The full original text of the conditions and obligations referred to in Article 1 may be consulted on the following Commission website:

http://europa.eu.int/comm/competition/index_en.html

ANNEX II

The full original text of the conditions and obligations referred to in Article 1 may be consulted on the following Commission website:

http://europa.eu.int/comm/competition/index_en.html