COMMISSION DECISION

of 23 July 2003

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

(Case COMP/M.2972 — DSM/Roche Vitamins)

(notified under document number C(2003) 2648)

(Only the English text is authentic)

(Text with EEA relevance)

(2004/238/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 last amended by Regulation (EC) No 1310/97 [2], and in particular Article 8(2) thereof,

Having regard to the Commission's decision of 19 May 2003 to initiate proceedings in this case,

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

Having regard to the final report of the Hearing Officer in this case [4],

Whereas:

I. INTRODUCTION

(1) On 31 March 2003, the Commission received a notification pursuant to Article 4 of Regulation (EEC) No 4064/89 ('the Merger Regulation') of a proposed concentration by which the undertaking DSM NV ('DSM') would acquire control within the meaning of Article 3 of the Merger Regulation of the whole of the undertaking Roche Vitamins and Fine Chemicals Division ('RV & FC') by way of purchase of shares and assets.

(2) After examination of the notification and a set of undertakings submitted by DSM on 25 April 2003 as amended on 13 May 2003, the Commission concluded, on 19 May 2003, that the notified operation fell within the scope of the Merger Regulation and that it raised serious doubts as to its compatibility with the common market and the EEA Agreement. The Commission therefore decided to initiate proceedings in accordance with Article 6(1)(c) of the Merger Regulation.

(3) On 27 June 2003 a new set of undertakings was submitted by DSM.

(4) On 9 July 2003 a final set of undertakings was submitted by DSM.

(5) The Advisory Committee discussed the draft of this Decision on 18 July 2003.

(6) This Decision is adopted pursuant to Article 10(2) of the Merger Regulation. That provision requires decisions taken pursuant to Article 8(2) to be taken as soon as it appears that the serious doubts referred to in Article 6(1)(c) have been removed. This applies in particular where the parties have offered commitments. The revised commitments offered by the parties remove the serious doubts as to the compatibility of the concentration with the common market, so that a conditional Decision pursuant to Article 8(2) and Article 10(2) clearing the concentration may be adopted.

II. THE PARTIES

(7) DSM is incorporated in the Netherlands as a public limited liability company with its corporate seat in Heerlen. DSM has subsidiaries in Europe, the United States and elsewhere in the world and is active in the development and production of a broad range of chemical and life science products including feed enzymes, performance materials and polymers and industrial chemicals.

(8) Roche Holding is the ultimate parent of the Roche group, which consists of three divisions: pharmaceuticals, diagnostics and vitamins and fine chemicals. It is the latter division (RV & FC) which is the subject of the notified transaction.

[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 69, 19.3.2004.
[4] OJ C 69, 19.3.2004.

(9) RV & FC is principally active in the production and sale of vitamins and carotenoids. It is also active in the production and supply of citric acid, premixes, cosmetic ingredients and polyunsaturated fatty acids ('PUFAs'). In each of these areas RV & FC is engaged in research and development activities. RV & FC also distributes but does not produce feed enzymes (where it also has research and development activities) and certain vitamins and amino acids.

III. THE OPERATION

(10) The transaction concerns the acquisition by DSM of sole control of RV & FC pursuant to a Share and Asset Purchase Agreement signed on 10 February 2003.

IV. CONCENTRATION

(11) The proposed operation therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

V. COMMUNITY DIMENSION

(12) The undertakings concerned have a combined aggregate worldwide turnover of more than EUR 5 billion ([5]) (DSM: EUR 5 606 million; RV & FC EUR […]* (*)). They each have an aggregate Community-wide turnover of more than EUR 250 million, (DSM: EUR […]*; RV & FC EUR […]*) but they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension within the meaning of Article 1(2) of the Merger Regulation.

VI. THE RELEVANT MARKETS

(13) The notifying party, DSM, is active in a broad range of product areas. However, the proposed operation only creates overlaps in additives used for the manufacture of animal feed and some additives used in products for human consumption. Among these products, there are only two affected markets, both related to feed enzymes: phytase and non-starch polysaccharide degrading enzymes ('NSP-degrading enzymes').

Phytase

Relevant product market

(14) Phosphorus is a vital mineral element in animal nutrition. It plays a major metabolic role and has important physiological functions. An adequate supply of phosphorus in the feed is essential to health and optimal production of livestock. Animals obtain the phosphorus they need from cereals, oilseeds, other vegetal material and inorganic phosphates. More than two-thirds of the total phosphorus present in vegetal raw materials occurs in the form of phytate-bound phosphorus. Monogastric animals, such as poultry and pigs, lack the necessary enzymes to release the phosphorus from the phytate. As a result, most of the phosphorus is excreted unused in the faeces and these animals need additional inputs of phosphorus in their vegetable and cereal-based diets in order to maintain a proper phosphorus balance.

(15) There are two ways in which the amount of digestible phosphorus in animal feed can be increased, by adding inorganic phosphate or by adding phytase. Inorganic phosphates are minerals which are used as both fertilisers and feed additives. Phytase is an enzyme capable of degrading phytate and thereby liberating the phosphorus. It is available in liquid and dry (granulated or powder) form.

(16) The notifying party estimates that phytase could replace up to 50 % of inorganic phosphate in animal feeds, but that it can never entirely replace inorganic phosphate. It submits that all forms of phytase and inorganic phosphate constitute part of the same relevant product market, on the basis that phytase can replace a significant proportion of inorganic phosphate, and prices are similar.

(17) However the Commission's market investigation does not support this claim. It appears that a vast majority of customers do not consider the products to be interchangeable. There are two main reasons for this. In comparison with inorganic phosphates, the use of phytase results in cost savings and reduces environmental pollution.

Inorganic phosphate reduction

(18) The use of phytase in feed can have a number of advantages. The first main advantage is to enable phosphorus in feed to be better digested and thereby reduce the quantity of inorganic phosphate required. Phytase also releases amino acids and other nutrients in the phytate molecule.

(*) 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.

([5]) Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Notice on the calculation of turnover (OJ C 66, 2.3.1998, p. 25). To the extent that figures include turnover for the period before 1 January 1999, they are calculated on the basis of average ECU exchange rates and translated into EUR on a one-for-one basis.

(19) The Commission's market investigation confirmed that the use of phytase results in a significant reduction in the amount of inorganic phosphate used in feed. One feed compounder estimated that 150 grams of liquid phytase can substitute for approximately 7,5 kg of inorganic phosphate per tonne of feed.

Cost savings

(20) The Commission's investigation suggested that the cost of phytase is not the deciding factor but rather the cost savings that may be achieved by the inclusion of phytase in animal feed which, in turn, depends on the relative costs of phytase and mineral phosphate. In terms of the overall cost savings in feed production, the addition of phytase is highly significant. One feed-compounder estimated the saving from using phytase at one mill to be EUR 0,36 for each tonne ([6]).

(21) Prices of DCP are driven by the demand for fertilisers and not the demand for feed, whereas the demand for phytase is driven only by demand for feed.

(22) Prices of phytase have been falling over the last 10 years. According to price development data submitted by the notifying party, the price of Natuphos 5000 (the phytase product of the DSM/BASF alliance) was approximately EUR […]* per kg in 1994. The price dropped steadily from its 1994 level to approximately EUR […]* in 2001 ([7]). On the other hand, the prices of inorganic phosphate have been steady or have increased slightly. The Commission's market investigation indicated there was little correlation between the prices of DCP and phytase.

(23) Further evidence that phytase and inorganic phosphate constitute separate relevant product markets is provided by the fact that the overwhelming majority of customers responded that they would not stop purchasing phytase and substitute it by inorganic phosphates in response to a price increase of 5 to 10 %. Many customers responded that they would stop purchasing phytase only if it were to increase in price by 25 to 50 %. Several responded that they would stop purchasing phytase if it were to increase in price by 100 to 300 %.

Improvement of the nutritional value

(24) A major benefit of using phytase in feed is that by reducing the quantity of materials which must be added to vegetal raw materials to get an appropriate diet, it increases the quantity of vegetal raw material included in the feed and thereby increases its nutritional value. Using the example given at recital 19) above the addition of 150 grams of liquid phytase per tonne of feed can substitute for approximately 7,5 kg of inorganic phosphate. This would mean that 7,35 kg of additional vegetal material may be added to the feed to increase nutritional value. Improving the nutritional value of feed also contributes to cost savings.

Handling

(25) The Commission's market investigation also confirmed that phytase and inorganic phosphate differ significantly in terms of volume, weight and handling. Phytase is generally sold in smaller quantities, for example, sacks or drums of 25 kg, and must be dispensed in small quantities that is to say, in terms of grams per tonne of feed. Inorganic phosphate is delivered in tonnes, stored in silos and is dispensed in large quantities using machinery. Easy handling of phytase also contributes to cost savings.

Environmental benefits/legislation governing phosphates on land

(26) Another important benefit of using phytase in feed is the reduction of excretion of phosphate in animal manure. Although the microbial activity in the soil releases phosphate which can have a beneficial fertilising effect, if present in excess, this can cause pollution of land and ground water. The use of phytase reduces the harmful environmental impact of phosphate from animal manure in areas with intensive livestock production. According to the Commission's market investigation, studies have found that optimising phosphate intake and digestion with phytase reduces the excretion of phosphorus by approximately 30 %.

([6]) The total raw material cost of the feed per tonne in this estimate is EUR 159,38. It should be noted that raw material feed components represent 90 % of the weight and the majority of the cost. Nearly no saving may be achieved on the cost of raw materials since they are commodity products. Therefore, any saving achieved on the residual costs is of primary importance for an industry which operates with high volumes and very low margins (typically 3 to 4 %).

([7]) Prices provided by notifying party of phytase in the European market calculated back to the standard product (Natuphos 5000) containing 5 000 units per gram. Form CO p. 70-71.

(27) The serious environmental concerns posed by the threat of high phosphate levels in manure has led a number of Member States (for example, France, Netherlands, Belgium and Germany) and regions to enact legislation limiting the level of phosphates to be applied to the land ([8]). These are the geographic areas in which livestock is most intensively farmed in Europe.

(28) In addition, the Commission's investigation indicated that the regulatory constraints on the levels of phosphates in feed, in some areas of the EEA such as Germany, mean that the only alternative to using phytase in feed to reduce phosphorus is to decrease animal density.

Liquid and dry

(29) The Commission also considered whether the market should be further segmented into separate markets for liquid and dry phytase. The market investigation indicated that customers considered liquid and dry phytase as functionally substitutable. There is full supply-side substitutability between the dry and liquid form of phytase, the dry form being produced out of the liquid form. Although liquid phytase is more generally used when the pelleting process is undertaken at a higher temperature (> 70 degrees centigrade), the Commission's investigation indicated that, with some adjustments by the feed manufacturer, the products could be used for different types of feed. The market investigation also indicated that liquid and dry phytase is similar in terms of price on the basis of equivalent active ingredient. On this basis the Commission considers that it is not necessary to draw a distinction between liquid and dry phytase.

Conclusion

(30) The market investigation has demonstrated that phytase is not a substitute for inorganic phosphate for the following reasons:

(a) phytase lowers costs, as it reduces the additional quantities of inorganic phosphate that must be added to the feed, improves the nutritional value of feed and is easier to handle;

(b) the use of phytase instead of inorganic phosphate limits the excretion of phosphorus on the soil and thereby allows environmentally constrained farmers to maintain or increase animal density;

(c) a clear majority of customers stated that they would not stop purchasing phytase even if it were to double or triple in price.

(31) On the basis of the foregoing, the Commission concludes that there is a separate relevant product market for phytase.

Relevant geographic market

(32) The notifying party suggests the relevant geographic product market for phytase is at least EEA-wide on the basis that its phytase production is based at two facilities: one in Seclin, France and another (outsourced) in Kingstree (USA). Phytase is sold from these two plants in more than 70 countries via BASF's worldwide network. The notifying party also notes that the production of Novozymes is based at Kalundborg, Denmark and Franklington, South Carolina (USA) whilst the marketing is handled by, *inter alia*, RV & FC worldwide. In addition, the parties submit there are no substantial differences in the prices of phytase sold by BASF and RV & FC respectively across the EEA. The notifying party submits there are no significant barriers to trade and transport costs constitute a small proportion of sales cost. Based on the example of Natuphos 5000G, the western European 2003 price ranged from EUR […]* per kg in Austria to EUR […]* per kg in Greece, but the price in the majority of Member States varied insignificantly between EUR […]* and EUR […]* per kg (particularly in those countries along the north-west European sea border).

([8]) France: Circulaire du 23 janvier 1996 relative à l'utilisation de nouvelles références de rejet des élevages de porcs; Arrêté du 29 février 1992 fixant les règles techniques auxquelles doivent satisfaire les élevages de vaches laitières et (ou) mixtes soumis à autorisation au titre de la protection de l'environnement (modifié par les arrêtés du 29 mars 1995 et du 1er juillet 1999); Arrêté du 13 juin 1994 fixant les règles techniques auxquelles doivent satisfaire les élevages de volailles et (ou) de gibiers à plumes soumis à autorisation au titre de la protection de l'environnement (modifié par arrêté du 1er juillet 1999) (JO du 23 décembre 1994); Loi nº 76-663 du 19 juillet 1976 relative aux installations classées pour la protection de l'environnement; Décret nº 77-1133 du 21 septembre 1977 — Décret pris pour l'application de la loi nº 76-663 du 19 juillet 1976 relative aux installations classées pour la protection de l'environnement;
Belgium: Convenant betreffende de vaststelling van maximumgehalten aan totaal fosfor in volledige voeders voor varkens en kippen die aangeduid zijn als 'laag-fosfor-voeder'; Ondertekenaars van het convenant 'laag-fosfor-voeder' voor varkens;
Germany: Verordnung zur Umsetzung der Richtlinie 80/68/EWG des Rates vom 17. Dezember 1979 über den Schutz des Grundwassers gegen Verschmutzung durch bestimmte gefährliche Stoffe (18. März 1997); Düngemittelgesetz (15. November 1977); Verordnung über die Grundsätze der guten fachlichen Praxis beim Düngen (26. Januar 1996); Gesetz zur Förderung der Kreislaufwirtschaft und Sicherung der umweltverträglichen Beseitigung von Abfällen (27. September 1994);
The Netherlands: Wet Milieubeheer; Besluit milieueffecten-rapportage; Besluit milieuverslaglegging; Inrichtingen- en vergunningsbesluit milieubeheer

(33) The overwhelming majority of customer and competitor responses to the Commission's market investigation indicated that the market for phytase is EEA-wide. The market investigation indicated that the vast majority of feed enzymes (that is to say, NSP-degrading enzymes and phytase) are sold along the north-western sea border of Europe where the livestock density is highest. The Commission's market investigation indicated that there is a high level of cross-border trade within the EEA, but that customers do not purchase phytase from outside the EEA. Some respondents explained they would not purchase phytase from a distributor outside the EEA because the regulatory regime outside the EEA is different. On the other hand, at the production level, a part of the phytase produced by Fermpro, the US toll manufacturing company that produces phytase for DSM, is transported by DSM to Germany for granulation. On this basis, for the time being, the Commission considers the relevant geographic market is at least EEA-wide at the production level and that the relevant geographic market is EEA-wide at the distribution level.

NSP-degrading enzymes

Relevant product market definition

(34) NSPs are important components of all plant material. They are naturally present in the cell walls and are required for the structural integrity of the cells. When an animal consumes the plant material (such as cereals and vegetable protein sources) used in compound animal feeds, they will consume NSP. Poultry and pigs lack the endogenous enzymes necessary in their digestive tracts to degrade NSP. The addition of NSP-degrading enzymes to poultry and pig feeds results in an increase in the availability and digestibility of nutrients in the feed which means improvements in feed performance: the animals utilise more effectively the nutrients already present in the feed. To a lesser extent NSP-degrading enzymes can contribute to a reduction in environmental pollution (for example, excretion of nitrogen).

(35) There are several types of NSP-degrading enzymes, the main ones being xylanase and beta-glucanase. The other NSP-degrading enzymes are essentially marginal. Each of these enzymes is active on a particular substrate ([9]). The NSP-degrading enzymes products contain either one (mono-component) or several (multi-components) of these active substances. Multi-components products can be produced either with a single micro-organism or by blending enzymes produced by different micro-organisms. The notifying party considers there is no reason to differentiate between mono and multi-components or by production method. Customers are only concerned with the enzyme profile and the cost of the finished product. Many of them do not know how the NSP-degrading enzymes they purchase are produced.

(36) The notifying party also argues that no distinction should be made between the liquid and dry form of the NSP-degrading enzymes since most of the existing NSP-degrading enzymes are produced in the two forms. Customers make their choice according to their feed production process and equipment.

(37) The notifying party argues that no distinction should be made between the type of cereals with which NSP-degrading enzymes are associated or the animal species fed by these additives. To support this view they indicate that since most of the monogastric animals cereal diets are based on wheat, NSP-degrading enzymes mainly include xylanase, the most appropriate enzyme to supplement wheat. Some diets associate barley with wheat, but less than 10 % of cereal diets contain more than 30 % barley ([10]). In these diets, it is recommended to add beta-glucanase to xylanase to optimise efficacy. However, some customers prefer to remain with wheat supplementation and not to switch to a wheat and barley combination. Therefore, xylanase enzymes are the predominant supplementary enzymes. They can be used for all cereals based diets. Xylanase faces competition from other enzymes for some specific types of diet. The notifying party submits that this is not sufficient reason to define separate product markets. It further argues that since most of the NSP-degrading enzymes are not species-specific, it is inappropriate to distinguish according to animal species.

(38) On this basis, the notifying party submits that all NSP-degrading enzymes constitute a single relevant product market.

Different types of diets

(39) Diet composition varies according to the relative prices of wheat and barley. While most of the time this comparison is in favour of wheat and therefore diets are only made of wheat, sometimes and in some regions barley prices are attractive enough to add barley to wheat. In 90 % of the diets, the level of inclusion of barley is below 30 %.

([9]) A substrate is a polysaccharide present in cereals. Each NSP-degrading enzyme degrades one of these substrates, for example xylanase degrades arabinoxylans.

([10]) According to the notifying party, under certain market conditions, nutritionists can choose to add barley to wheat-based diets. These conditions depend mainly on the relative cost positions of both cereals and occur only occasionally.

(40) The customer responses to the Commission's first phase market investigation were unanimous in the view that it is necessary to distinguish enzymes according to the type of cereal with which they are associated. The market investigation indicated that the response of different cereals varies according to enzyme, since xylanase has little effect on barley and beta-glucanase has little effect on wheat. Most of the suppliers of NSP-degrading enzymes indicated that their products were targeting one type of cereal or particular combinations of cereals, namely 'wheat', 'barley', or 'wheat and barley' ([11]). Therefore it appeared that the product market definition proposed by the notifying party could fail to take into account this product differentiation.

(41) However, the second phase market investigation has revealed that customers follow different strategies when purchasing NSP-degrading enzymes. Whereas some of them are looking for products that can be efficiently added to all diets, that is to say, combining xylanase and beta-glucanase, others would prefer to use mainly pure xylanase products and add beta-glucanase products when the level of barley or similar cereals in diets becomes significant. While the main advantages associated with the first strategy is that it is easy to handle and requires low levels of stocking, the second strategy appears to be more cost-effective, but requires more nutrition know-how and more handling and stocking equipment. However, neither strategy has significant advantages over the other and the two are equally represented among customers.

(42) The second phase market investigation has also indicated that producers and distributors are following different types of strategies with respect to their portfolio of NSP-degrading enzymes. Some focus on a single product that can be used for all diets, others develop only pure products specific to each kind of substrate and a third category follows an 'in between' strategy by proposing several combinations of enzymes in order to match several levels of inclusion of barley in diets.

(43) Therefore, when a customer selects NSP-degrading enzymes, he will decide on a procurement strategy based on the price and efficacy of a spectrum of products, ranging from pure xylanase products to pure beta-glucanase products and including combinations of the two enzymes. No clear distinction can be drawn between the products within this spectrum and no predominant purchasing strategy can be identified. In addition, there is a high level of correlation between the prices of the different products ([12]) currently on the market, except for certain products that had been phased out. It is therefore concluded that NSP-degrading enzymes should not be distinguished according to the type of diets with which they are associated.

([11]) Pure barley diets do not exist. Barley products are intended to be added to wheat enzymes in wheat and barley diets.

([12]) Price correlation was run on price and sales value series over the last five years.

Different types of animal species

(44) The first phase market investigation also indicated that NSP-degrading enzymes could be differentiated according to the animal species for which they are intended. The market investigation indicated for example, that poultry and swine-based wheat diets respond more positively to xylanase but that the dose required for the best economic response differs between species. The major supplier of NSP-degrading enzymes, Danisco Animal Nutrition (Danisco), has three product lines, 'poultry', 'swine' and 'swine and poultry'. In addition, some products are registered for certain species only. For example, the DSM/BASF product, 'Natuphos' is only registered for broilers, layers and turkeys. Even if most products can be used for all monogastric animals and therefore could not be classified in a given animal species category, the product market definition proposed by the notifying party fails to take into account this product differentiation. Consequently, alternative product market definitions based on animal species could be considered.

(45) However, the second phase market investigation indicated that, even if there are differences in the efficacy of NSP-degrading enzymes on different animal species, there is a high level of homogeneity of the products available for each species and most of the major products are registered for all animal species, in similar or slightly adapted forms. On this basis, it is concluded that NSP-degrading enzymes should not be distinguished according to animal species.

Other characteristics

(46) A large number of replies to the Commission's first phase market investigation indicated that the distinction between mono and multi-components should be considered, however the second phase investigation confirmed that mono and multi component NSP-degrading enzymes compete with each other and that they cannot be separated into distinct relevant product markets.

(47) There is a full supply-side substitution between the dry and liquid form of NSP-degrading enzymes, the dry form being produced out of the liquid form. No cost advantage is attached to either of the two forms and customer choice is driven by the way the customer processes feed and its equipment. Therefore, the dry and liquid forms of NSP-degrading enzymes should be seen as belonging to the same product market.

(48) Finally, heat stability has been repeatedly mentioned as an important characteristic of NSP-degrading enzymes. However, most of the products currently on the market have the same level of heat stability and therefore should not be distinguished according to this characteristic.

(49) It is concluded from the foregoing that all NSP-degrading enzymes should be considered as belonging to one single product market.

Geographic market definition

(50) The notifying party submits that the scope of the geographic market for NSP-degrading enzymes is at least the EEA on the basis that all the major suppliers of NSP-degrading enzymes operate their respective enzyme businesses out of a few plants from which they distribute their products throughout the EEA. The notifying party observes that the EEA and the US markets are not homogenous. The use of NSP-degrading enzymes is linked to the utilisation of certain types of raw materials. In Europe animal diets are often based on wheat, while in the United States they are mostly based on maize, which may require other types of NSP-degrading enzymes. The market investigation confirmed the view of the notifying party. Therefore, for the time being, the Commission considers the geographic market for NSP-degrading enzymes is likely to be EEA-wide at the distribution level, and is at least EEA-wide at the production level.

VII. **COMPETITIVE ASSESSMENT**

Agreements

DSM and BASF Cooperation Agreement

(51) In 1994, DSM entered into exclusive worldwide agreements with BASF for the development, production, marketing, sales and distribution of feed enzymes (NSP-degrading enzymes and phytase). The main agreement is a cooperation agreement and a joint development agreement. Under the agreements, DSM carries out production and the major part of research and development, while sales and distribution are done by BASF. All costs and profits are shared on a 50:50 basis and the activities of the parties concerning the objectives of the agreements are coordinated jointly by a steering committee consisting of two persons, one from each party.

(52) The agreements are exclusive insofar as DSM is obliged to supply the feed enzymes covered by the agreements exclusively to BASF and BASF is obliged to purchase the feed enzymes from DSM. According to the notifying party, the final decision on pricing is taken by BASF. However, the arrangements permit the parties to the agreements to inspect each other's accounts and to discuss detailed annual plans including matters such as pricing, costs and production volumes with respect to the alliance.

(53) The cooperation agreement stipulates that the results stemming from the research work shall become the exclusive property of the party which performs the research. The performing party is required to grant a royalty-free licence to use, produce and sell such results at the request of the other party. These agreements have been concluded for a duration of 15 years and will come to an end in 2009.

(54) In conclusion, BASF depends on DSM for its feed enzyme activities.

RV & FC and Novozymes alliance agreement

(55) In 1996, RV & FC entered into a non-exclusive agreement with Novozymes, a producer of industrial enzymes, for the distribution of existing enzymes and for the development of new feed enzymes. This agreement was complemented by a new agreement entered into in 2001 under which Novozymes is primarily responsible for process research, product development and production. RV & FC is responsible for new product application (essentially how the product is used), registration, marketing and sales.

(56) Pursuant to the Novozymes/RV & FC agreements, costs and profits are shared on a […]* basis, RV & FC having the […]*. Prices are determined by RV & FC and Novozymes does not have any influence on pricing decisions. These agreements will come to an end in […]*.

(57) Novozymes is heavily dependent on RV & FC for marketing, sales and distribution of its feed enzymes, but also for animal nutrition know-how, market understanding and customer relations.

(58) As far as distribution is concerned, these agreements grant RV & FC […]* rights to distribute Novozymes' feed enzyme products outside the EEA, but not within the EEA. […]* Lohmann Animal Health (Lohmann) also distributes Novozymes' products under its own brand name in the EEA. Lohmann's sales territory is limited to France, Austria, Germany, Portugal and Spain. Its sales are only a quarter of those of RV & FC in the EEA and it does not sell any Novozymes products outside the EEA. In addition, the Novozymes/Lohmann agreement is merely a distribution agreement and therefore, does not cover any research and development.

(59) It should be noted that the DSM/BASF and Novozymes/RV & FC agreements cover both phytase and NSP-degrading enzymes. These two agreements make Novozymes and BASF heavily dependent on their counterparts for their feed enzyme activities. In addition, the profit sharing and research mechanisms provide for a high level of economic integration.

(60) As a result of the concentration between DSM and RV & FC a structural link will be created between the DSM/BASF and the RV & FC/Novozymes alliances leading to overlaps at both the levels of production and the distribution.

Phytase

(61) Historically, competition in the market for phytase has taken place between the RV & FC/Novozymes and the DSM/BASF alliances. According to the notifying party, at the production level, Novozymes and DSM have market shares of [30 to 40]* % and [60 to 70]* % respectively ([13]). The only other producer of phytase currently active in the EEA is AB Enzymes, which had a share of only [0 to 10]* % of the total EEA production in 2002.

(62) At the distribution level, BASF, DSM's exclusive distributor, represented [60 to 70]* % of the sales recorded in the EEA in 2002, while RV & FC represented [20 to 30]* % of the market. This market share is lower than Novozymes' share of production because Lohmann distributes Novozymes' phytase in some countries and represented [0 to 10]* % of the market. AB Enzymes had [0 to 10]* % of the distribution market, the same as its share of production. As a result of the creation of a structural link between the DSM/BASF and RV & FC/Novozymes alliances the proposed operation will give rise to a combined market share of the two alliances, post-operation, of [90 to 100]* % of the production and [80 to 90]* % of the sales of phytase in the EEA, based on 2002 figures.

(63) The positions held by DSM, Novozymes, BASF and Roche are unlikely to be contested by AB Enzymes ([14]). The market investigation has revealed that the AB Enzymes phytase product is perceived by customers and competitors as a lower quality product. In particular, the AB Enzymes product does not offer a sufficient level of heat stability and has received Community regulatory approval for only a limited number of species ([15]). Even if AB Enzymes were to extend its sales to other species, which would only be possible once it has obtained Community approval (for which no deadline is foreseen), it is unlikely that its overall proportion of sales would significantly impact on the competitive position of DSM, Novozymes, BASF and RV & FC.

(64) In addition to AB Enzymes, competition could theoretically come from new entrants. Danisco has just obtained approval from the Federal Drug Administration of the United States for a new phytase product, Phyzyme XP. However this product will not obtain Community approval before 2005 and therefore Danisco will not enter the EEA market with Phyzyme XP for at least two years. The market investigation also disclosed that certain companies are developing phytase by expression in plants. In particular, one company is currently engaged in the research and development of new enzymes and their production in plants. This company's plans to make phytase in green plants are currently theoretical and a product launch is not foreseen in the Community before 2006. The development of such plants depends on both technical advances and a Community regulatory climate that allows genetically-modified plants to be grown. The necessary technology will not reach a commercial stage for at least three to five years. Additionally the economics of production in

([13]) All the market shares mentioned at the production level are EEA-wide market shares. Market shares on a wider relevant geographic market would not be significantly different.

([14]) AB Enzymes received regulatory approval and launched its phytase product, Phyzyme, in the EEA in July 2001.

([15]) All enzymes intended for use as feed additives follow a procedure of pre-market authorisation in the Community. Since 1970 there has been a Community-wide system of authorisation based on the concept of the positive list, that is to say, only the additives on the list may be used. Council Directive 70/524/EEC of 23 November 1970 concerning additives in feedingstuffs (OJ L 270, 14.12.1970, p. 1), as last amended by Regulation (EC) No 1756/2002 (OJ L 265, 3.10.2002, p. 1) contains the positive list including vitamins for use as feed additives. No additive may be placed on the market if it is not approved by the Commission and Member States. The assessment is carried out by the Scientific Committee for Animal Nutrition (SCAN) and Member State experts. After first evaluation by a rapporteur Member State, a dossier is submitted to the Commission and to the other Member States for a centralised pan-European approval. Council Directive 87/153/EEC of 16 February 1987 fixing guidelines for the assessment of additives in animal nutrition (OJ L 208, 11.8.1994, p. 5), as last amended by Commission Directive 2001/79/EC of 17 September 2001 amending Council Directive 87/153/EEC fixing guidelines for the assessment of additives in animal nutrition (OJ L 267, 6.10.2001, p. 1) sets out the applicable guidelines for the assessment of additives in animal nutrition. Registration is required for the pipeline strain, the species for which it is intended, and any variations on the strain. The production plants intended for production of the phytase product also require approval. At present, the regulatory approval process takes at least 24 to 36 months. The scientific safety assessment carried out by SCAN will from mid-2003 be carried out by the European Food Safety Authority (EFSA), a new independent Community body taking over the functions of a number of scientific committees previously established by the Commission. In the medium term the scientific assessment is expected to be more efficient with EFSA but for the dossiers at present in the pipeline it is difficult to forecast the impact of the transition to the new body.

green plants remain to be determined. Another impediment to the manufacture of feed enzymes in green plants for Europe is the de facto moratorium on genetically-modified crops in the Community. Therefore, the Commission considers that new market entry does not appear likely for at least two to five years.

(65) The Commission notes that the proposed transaction has the effect of putting DSM in a unique position through its involvement in both alliances. The Commission considers that post-operation, DSM will have the ability and the incentives to bring about an increase in phytase prices and reduce innovation and research and development of both alliances.

(66) Given that DSM is at the centre of both alliances, it will be in a position post transaction to weaken either or both of its partners, Novozymes and BASF. For example, DSM would have the ability to pursue the two following strategies. In the RV & FC/Novozymes alliance, RV & FC determines the prices. DSM, via its link with RV & FC, would have access to the prices of the RV & FC/Novozymes alliance. DSM would therefore be in a position to increase the price of the RV & FC/Novozymes' product in order to promote the DSM/BASF cooperation to the disadvantage of the RV & FC/Novozymes. On the other hand, DSM may influence but not determine the prices of the DSM/BASF alliance and perform research and development. DSM's incentives to innovate for RV & FC's competitor post-concentration, BASF, would be reduced following the operation if DSM decides it wishes to concentrate its efforts on the RV & FC/Novozymes alliance.

(67) As noted at recital 22 above, phytase prices have been declining since 1994. Competition has historically taken place between the RV & FC/Novozymes and DSM/BASF alliance. The notified operation therefore, removes the competition that has previously taken place between these two alliances and which has been responsible for the decline in price. The Commission considers that the combination of the two alliances leads to very high market shares at the levels of production and of sales, and would enable DSM or the two alliances post-concentration to be in a position to engage in any of the above strategies which could lead to a reduction in innovation and/or increase in prices to the detriment of consumers.

Conclusion as to competitive assessment of phytase market

(68) The strong positions held by DSM, Novozymes, BASF and Roche, the high degree of interdependence between the parties to the alliances, and the absence of a credible competitive counterweight in the short to medium term lead the Commission to consider that the proposed operation raises serious concerns as to the creation or strengthening of a dominant position on the market for phytase. Therefore the Commission has serious doubts as to the compatibility of the proposed transaction with the common market.

NSP-degrading enzymes

(69) In addition to NSP-degrading enzymes of Novozymes, RV & FC distributes another NSP-degrading enzyme produced by Iogen of Canada. The main competitors of DSM and Novozymes for the production of NSP-degrading enzymes in the EEA are Danisco and Genencor. Danisco holds 42,7 % of Genencor's shares and distributes NSP-degrading enzymes produced by Genencor. For its NSP-degrading enzyme activities, Danisco relies partly on Genencor. Conversely, Genencor is highly dependent on Danisco for the distribution of its NSP-degrading enzymes, since more than 75 % of its sales are achieved through Danisco. The Commission considers the large shareholding of Danisco in Genencor is likely to lead to an alignment of their economic interests. In addition, the two companies are largely interdependent in this sector. Therefore, the Commission regards the market shares of Genecor and Danisco as cumulative at the production level for the purpose of this decision.

(70) Genencor NSP-degrading enzymes are also sold by Adisseo with whom Genencor has certain agreements that will tend to align their economic incentives. As a consequence, it seems that Adisseo should be seen as being part of the Danisco/Genencor grouping in relation to their NSP-degrading enzymes.

(71) Under the market definition proposed by the notifying party, at the production level, DSM and Novozymes have market shares of [0 to 10]* % and [20 to 30]* % respectively. Their main competitor is Danisco, which produces [40 to 50]* %, [0 to 10]* % itself and a further [30 to 40]* % through Genencor. These two groups face the competition from smaller producers with market shares below [0 to 5]* %.

(72) As far as the distribution of NSP-degrading enzymes is concerned, Danisco holds [30 to 40]* % of the NSP-degrading enzymes distribution market in the EEA in 2002, Adisseo [0 to 10]* % and BASF [0 to 10]* % of the market. Novozymes products are distributed by Lohmann and RV & FC, which have respectively [0 to 10]* % and [20 to 30]* % of the market. At the distribution level, the parties would have a [30 to 40]* % market share (DSM/BASF [0 to 10]* % and Novozymes/RV & FC [20 to 30]* %) to be compared to the [40 to 50]* % held by Danisco and Adisseo.

(73) The Commission considers that single dominance issues in NSP-degrading enzymes are unlikely to arise because Danisco and the companies associated with it will have a stronger position at both the production and the distribution level than the group made of DSM/BASF/RV & FC/Novozymes.

(74) Since the two market leaders will have market shares of, respectively, [40 to 50]* % and around [30 to 40]* %, while the third largest competitor with [0 to 10]* % market share will be eliminated, the question of collective dominance has been examined.

(75) The notifying party claims that such a scenario is unlikely as the market is not transparent and NSP-degrading enzyme products are not homogeneous. According to the notifying party, prices are privately negotiated with a large number of customers. Although there are only a few premixers in the EEA, there are more than 500 feed compounders and integrators who purchase feed enzymes. As a consequence, distributors do not know the prices of their competitors and therefore monitoring is practically impossible. The notifying party also points to the existence of levels of excess production and distribution capacity that would jeopardise attempts at coordination.

(76) The Commission's market investigation has largely confirmed that monitoring prices and quantities on the NSP-degrading enzymes market is extremely difficult. Prices are privately negotiated once or twice a year on average and therefore only general but no precise price information can be derived from the tender negotiations. One distributor of NSP-degrading enzymes indicated that 'the only way to get detailed market price information is to ask customers, who will mostly only give an indication or are not always truthful, since they are trying to negotiate a better price'. The demand is fragmented both horizontally given the high number of feed compounders in the EEA, and vertically since NSP-degrading enzymes are sold to premixers, feed compounders and integrators. Therefore gathering relevant information on quantities sold is very difficult, if not impossible. A tacit customer or geographic sharing of the market is not possible either, since the customer base is heterogeneous and operates on several levels (pre-mixers, compounders and integrators). Some of these customers sell feed enzymes at different levels over a large geographic area. Finally, product ranges vary widely across producers and distributors which implies that one product of a given producer/distributor cannot generally be directly compared with one product of another producer/distributor but rather with several products whose performances are close, but not identical, to the product mentioned. Therefore, the Commission considers that the transaction, in its present form, does not give rise to concerns as to the creation of a collective dominant position on the market for NSP-degrading enzymes.

(77) On the basis of the foregoing, the proposed concentration would not give rise to competitive concerns on the NSP-degrading markets.

VIII. COMMITMENTS PROPOSED BY THE NOTIFYING PARTY

(78) On 9 July 2003 the notifying party submitted a revised set of undertakings (hereinafter referred to as 'undertakings' or 'commitments') in accordance with Article 8(2) of the Merger Regulation, for the purpose of achieving clearance of the concentration. The commitments are set out in the Annex to this Decision and form an integral part of it.

(79) The Commission is of the view that the commitments submitted on 9 July 2003 address and resolve in a satisfactory manner the competition concerns raised by the concentration.

Summary of the Commitments offered by the notifying party

(80) The notifying party has proposed a termination of the DSM/BASF alliance in feed enzymes and the divestment of DSM's feed enzymes business under the DSM/BASF alliance (namely, the feed enzymes phytase, NSP-degrading enzymes and α-amylase) and has undertaken to suspend the implementation of the concentration between DSM and RV & FC unless and until they have entered into a final agreement terminating the DSM/BASF alliance and final sale and licence agreements for the sale of the divested business and the Commission has approved the terms of the agreements and the purchaser.

Transfer and licence of technology and intellectual property

(81) The notifying party commits to the transfer and licence of all feed enzymes technology and intellectual property.

(82) First, DSM commits to transfer to the purchaser the ownership of any form of intellectual property rights related to the production or development of phytase, NSP-degrading enzymes and α-amylase including, but not limited to, patents, know how and trademarks. This transfer is subject to the rights of Novozymes under its respective licence agreements with DSM and a licence back to DSM to the extent necessary to develop, make, have made, use and sell products outside the field of feed enzymes.

(83) Furthermore, DSM commits to grant the purchaser an irrevocable, exclusive royalty-free licence under the background technology ([16]) to develop, make, have made, use and sell phytase, NSP-degrading enzymes and α-amylase. This licence will be non-exclusive to develop, make, have made, use and sell other feed enzymes.

(84) Finally, DSM undertakes to divest biological materials such a strains and markers which are used in the development and production of phytase, NSP-degrading enzymes and α-amylase.

Transfer or completion of R & D projects

(85) As regards the existing research and development projects for feed enzymes, DSM commits to transfer these to the purchaser or, at the purchaser's request and upon the Commission's prior approval, to complete one specific R & D project on behalf of the purchaser. The purchaser will have the ownership of the results of the R & D projects.

Transfer of production

(86) DSM undertakes to provide the purchaser during a period of up to […]* with all necessary technical assistance in order to enable the purchaser to set up its own production of feed enzymes. To ensure that the purchaser has a secure source of supply, DSM will supply the purchaser, upon its request, under a cost-plus-toll manufacturing arrangement for a transitional period of up to […]*. Upon request of the purchaser, and upon prior approval of the Commission, such toll manufacturing agreement may be extended beyond a transitional period.

([16]) The background technology is shared between all enzyme applications (feed and others) and consists in the expression of enzymes in micro-organisms

(87) In addition, DSM commits to sell to the purchaser, at its request, or to a third party designated by the purchaser […]*.

(88) DSM/RV & FC also undertakes that for a period of […]* from the closing date of the divested business or for a period of […]* from the date of the termination of the RV & FC/Novozymes alliance, whichever is shorter, to abstain from activities in the field of development and production of phytase, NSP-degrading enzymes and α-amylase other than on basis of the existing RV & FC/Novozymes alliance.

(89) Finally, the commitments put in place several hold-separate obligations including the instalment of firewalls to prevent the flow of information between the DSM employees responsible for phytase toll manufacturing and R & D and the DSM key employees previously involved in the divested business and the RV & FC employees who are involved in the sale of these products for the duration of the transitional period. The commitment also foresees the appointment of a hold-separate manager and a monitoring trustee. Furthermore, DSM will offer incentives to DSM key employees involved in the production and R & D of feed enzymes for the purchaser and will offer incentives to DSM key employees to accept employment with the purchaser when offered.

Assessment of the Commitments offered by the notifying party

(90) The remedy proposed by the notifying party will terminate the DSM/BASF alliance and divest DSM's feed enzymes business to a suitable purchaser in order to ensure that DSM's current activities in feed enzymes (phytase, NSP-degrading enzymes and α-amylase) cease entirely and to create an independent, viable and effective competitor. This creation of an independent, viable and effective competitor is critical as the only other supplier, Novozymes/RV & FC (and DSM post-transaction), on the market would, in the event of the failure of the purchaser to provide effective competition, be left without any significant competition and competition would hence not be restored. In view of the fact that the development, production, sales and distribution of phytase have been until now intrinsically linked to that of the other existing feed enzymes, NSP-degrading enzymes and α-amylase, (see paragraphs 49 to 58 above), any remedy addressing competition concerns on the market for phytase cannot be limited to phytase alone but should also include these other feed enzymes.

(91) The remedies as proposed contain all elements necessary for a suitable purchaser to establish itself as an independent, viable and effective competitor in feed enzymes including phytase. The market investigation of the Commission has indicated that the inaccessibility of intellectual property rights has been the major barrier to successful entry into the phytase market. Under the proposed commitments the purchaser would acquire all intellectual property rights related to phytase, NSP-degrading enzymes and α-amylase (α-amylase was included, by DSM, in the package to be divested on the basis of industrial and commercial considerations) and would receive an exclusive licence to use background technology to develop, make, have made, use and sell these and would hence have access to all necessary intellectual property to produce and sell phytase, NSP-degrading enzymes and α-amylase. The latter point has been supported by the Commission's market test of the proposed commitments. The Commission's market test has also largely confirmed that feed enzymes technology can be transferred successfully and has been successfully transferred in the past.

(92) Research and development is also important in the field of feed enzymes and all existing feed enzymes R & D projects will be transferred to the purchaser. The market test has indicated that, although there are inevitably risks involved in technology transfer, a suitable purchaser would be able to complete this transfer successfully and that there have been successful transfers of R & D projects in the field of feed enzymes in the past. The market test also indicated that any completion of an ongoing R & D project by DSM would be undesirable and that an outright transfer would be preferable. Therefore, the Commission considers that the ability to complete this R & D project independently from DSM is of great importance to become a viable and competitive force.

(93) In order to allow the purchaser to start its own production, the commitments provide for assistance by DSM in establishing this production and provides for the possibility of toll manufacturing for a transitional period if requested by the purchaser. Furthermore, if requested by the purchaser, DSM commits […]*. The commitments do not include the divestment of any (feed) enzyme fermentation production assets and therefore access to independent production capacity is important for the purchaser to become an independent, viable and competitive force. This has been confirmed by the market test. In addition the market test indicated that any continued toll manufacturing by DSM beyond a transitional period would be undesirable. If the purchaser has sufficient access to independent (feed) enzyme production capacity, the Commission considers that toll manufacturing by DSM for parts of the purchaser's requirements beyond a transitional period is unlikely to create competition problems. Any such toll manufacturing after a transitional period would be subject to the Commission's prior approval. The market investigation and market test have identified several potential or actual (feed) enzyme producers. The market test has further confirmed that there has been successful transfer of feed enzyme production in the past.

(94) As the transferability and viability of the divested business and hence the restoration of effective competition on the market depend to a large extent on the identity of the purchaser, the notifying party has undertaken to suspend the implementation of the concentration between DSM and RV & FC unless and until they have entered into a final agreement terminating the DSM/BASF alliance and final sale and licence agreements for the sale of the divested business and the Commission has approved the terms of the agreements and the purchaser.

(95) The Commission considers that, in order to ensure the immediate restoration of effective competition and to be approved by the Commission, the purchaser must be viable and independent of and unconnected to DSM/RV & FC. It must have the financial resources, proven expertise and incentive to maintain and develop the divested business as a viable and competitive force in competition with DSM/RV & FC and other competitors. It must not be likely to create, in the light of the information available to the Commission, prima facie competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed. In its assessment of the purchaser the Commission will take into account the market characteristics and structure.

IX. **CONCLUSION**

(96) It must accordingly be concluded that the commitments as proposed by the notifying party modify the notified concentration to such an extent that the serious doubts of the Commission as to the compatibility of that concentration with the common market are removed. The concentration should, therefore, be declared compatible with the common market pursuant to Article 8(2) of the Merger Regulation and with the EEA Agreement pursuant to Article 57 thereof, subject to compliance with the commitments set out in the Annex,

HAS ADOPTED THIS DECISION:

Article 1

The notified operation whereby DSM NV acquires sole control of Roche Vitamins and Fine Chemicals Division within the meaning of Article 3(1)(b) of Regulation (EEC) No 4064/89 is declared compatible with the common market and with the EEA Agreement.

Article 2

Article 1 is subject to compliance with the conditions set out in sections B, C (except paragraphs 23 and 24), D and E of the Annex.

Article 3

Article 1 is subject to compliance with the obligations set out in paragraphs 23 and 24 of section C, and sections F (monitoring trustee) and G (the review clause) of the Annex.

Article 4

This Decision is addressed to:

DSM NV
Het Overloon 1
6401 JH Heerlen
The Netherlands

Done at Brussels, 23 July 2003.

For the Commission
Mario MONTI
Member of the Commission

ANNEX

The full original text of the conditions and obligations referred to in Articles 2 and 3 may be consulted on the following Commission website:

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