# FERTILISERS AND FEEDING STUFFS

## 1955 No. 1673

## The Fertilisers and Feeding Stuffs Regulations, 1955

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| *Made* - - - - | *4th November*, 1955 |
| *Laid before Parliament* | *10th November*, 1955 |
| *Coming into Operation* | *1st January*, 1956 |

The Minister of Agriculture, Fisheries and Food and the Secretary of State for Scotland, acting jointly, in exercise of the powers vested in them by Section 23 of the Fertilisers and Feeding Stuffs Act, 1926(a), and of all other powers enabling them in that behalf, and after consultation with the advisory committee constituted under the said Section, hereby make the following Regulations:—

*Citation and Commencement*

**1.** These Regulations may be cited as the Fertilisers and Feeding Stuffs Regulations, 1955, and shall come into operation on the first day of January, 1956.

*Revocation of Previous Regulations*

**2.**—(1) The Fertilisers and Feeding Stuffs Regulations, 1932(b), and the Fertilisers and Feeding Stuffs (Amendment) Regulations, 1951(c), are hereby revoked.

(2) Section 38 of the Interpretation Act, 1889(d), shall apply as if these Regulations were an Act of Parliament and as if the Regulations revoked by these Regulations were Acts of Parliament repealed by an Act of Parliament.

*Interpretation*

**3.**—(1) In these Regulations, unless the context otherwise requires, "the Act" means the Fertilisers and Feeding Stuffs Act, 1926; "feeding stuff" means any article for use as food for cattle or poultry; "fertiliser" means any article for use as a fertiliser of the soil; "Minister" means the Minister of Agriculture, Fisheries and Food; "Secretary of State" means the Secretary of State for Scotland.

(2) The Interpretation Act, 1889, shall apply to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

*Manner of marking particulars on label in the case of sales of small quantities* (Section 1 (1) (ii))

**4.** The label of a parcel to which Section 1 (1) (ii) of the Act relates shall bear the particulars prescribed in Section 1 (1) of the Act in block capital letters and figures not less than half-an-inch in height.

(a) 16 & 17 Geo. 5. c. 45. (b) S.R. & O. 1932/658 (Rev. VII, p. 639: 1932, p. 478).
(c) S.I. 1951/1189 (1951 I, p. 688). (d) 52 & 53 Vict. c. 63.

*Limits of Variation* (Sections 2 (5) and 26 (5))

**5.** The limits of variation for the purposes of Section 2 (5) and 26 (5) of the Act shall be as follows:—

*Limits of Variation for Fertilisers*

| Article | Limits of Variation (expressed as percentages of the *whole bulk*) | | | | |
|---|---|---|---|---|---|
| | Nitrogen | Phosphoric acid soluble in water | Phosphoric acid insoluble in water | Phosphoric acid | Potash |
| 1. Calcium cyanamide ... ... | 0·5 | — | — | — | — |
| 2. Dissolved or vitriolised bone:— | | | | | |
| (i) When the total of the percentages of phosphoric acid (soluble and insoluble) stated amounts to 14 or more, then: | | | | | |
| (*a*) If the excess of the actual percentage of insoluble phosphoric acid over that stated is 1·5 or more... ... ... | 0·3 | 2·0 | — | — | — |
| (*b*) If such excess is not less than 1, but is less than 1·5 ... ... | 0·3 | 1·5 | — | — | — |
| (*c*) If such excess is not less than 0·5, but is less than 1 ... ... ... | 0·3 | 1·0 | — | — | — |
| (ii) In all other cases ... ... | 0·3 | 0·5 | 0·5 | — | — |
| 3. Dried blood for fertilising purposes ... ... ... ... | 0·5 | — | — | — | — |
| 4. Hoofs ... ... ... ... | 0·5 | — | — | — | — |
| 5. Hoofs and horns ... ... | 0·5 | — | — | — | — |
| 6. Horns ... ... ... ... | 0·5 | — | — | — | — |
| 7. Nitrate of lime ... ... ... | 0·5 | — | — | — | — |
| 8. Nitrate of potash ... ... | 0·5 | — | — | — | 2·0 |
| 9. Nitrate of soda ... ... ... | 0·5 | — | — | — | — |
| 10. Oil seed fertilisers, as described in the First Schedule to the Act | 0·5 | — | — | — | — |
| 11. Potassic nitrate of soda... ... | 0·5 | — | — | — | 0·75 |
| 12. Potassium salts used as fertilisers, as described in the First Schedule to the Act:— | | | | | |
| (*a*) If the percentage of potash stated does not exceed 15 ... | — | — | — | — | 1·0 |
| (*b*) If such percentage exceeds 15 ... ... ... ... | — | — | — | — | 2·0 |

| Article | Limits of Variation (percentages are percentages of the *whole bulk*) |
|---|---|
| 13. A product not otherwise mentioned in Part I of the First Schedule to the Act, obtained by mixing one or more of the articles mentioned in Part I of the said First Schedule with any other such article or with any other substance or substances. | Nitrogen, potash, phosphoric acid soluble in water, and phosphoric acid insoluble in water respectively,<br>(*a*) 0·5 per cent., where the amount stated does not exceed 5 per cent.;<br>(*b*) 0·75 per cent. where the amount stated exceeds 5 per cent. but does not exceed 8 per cent.;<br>(*c*) One-eighth of the amount stated, where the amount stated exceeds 8 per cent. and the quantity sampled does not exceed one ton;<br>(*d*) One-tenth of the amount stated, where the amount stated exceeds 8 per cent. and the quantity sampled exceeds one ton.<br>Provided that the variation from each amount stated shall not exceed 1·75 per cent. |
| 14. Ammonium nitrate and mixtures of ammonium nitrate with any article not mentioned elsewhere in the First Schedule to the Act. | Nitrogen, one-twentieth of the amount stated. |
| 15. Basic slag ... ... ... | Total phosphoric acid, 1 per cent; phosphoric acid soluble in citric acid, 1 per cent.; amount that will pass through a prescribed sieve, one-twentieth of the amount stated. |
| 16. Bone meal or other bone product as described in Part I of the First Schedule to the Act. | Nitrogen 0·5 per cent.; phosphoric acid 1 per cent., provided that these limits of variation shall not operate so as to permit the application of the name " bone meal " to any article containing less than 3·5 per cent. nitrogen or less than 20 per cent. phosphoric acid. |
| 17. Dicalcium phosphate ... ... | Phosphoric acid soluble in citric acid, 1 per cent. |
| 18. Fish residues or other fish product as described in Part I of the First Schedule to the Act.<br>19. Meat and bone residues as described in Part I of the First Schedule to the Act. | Nitrogen 0·5 per cent. and phosphoric acid 1 per cent.; provided that the aforesaid limits may be extended if<br>(*a*) an excess of one of the said constituents is offset by a deficiency of the other in the proportion of 0·25 per cent. nitrogen to 1 per cent. phosphoric acid, and<br>(*b*) the extension of the aforesaid limits does not exceed for nitrogen 0·75 per cent. and for phosphoric acid 3 per cent. |

| Article | Limits of Variation (percentages are percentages of the *whole bulk*) |
|---|---|
| 20. Guano as described in the First Schedule to the Act. | Nitrogen, one-fifth of the amount stated, with a minimum of 0·25 per cent. and a maximum of 1·5 per cent.; phosphoric acid, one-tenth of the amount stated, with a maximum of 2 per cent.; and potash, one-fifth of the amount stated. |
| 21. Phosphate rock, ground or otherwise. | Phosphoric acid, one-twentieth of the amount stated; amount that will pass through a prescribed sieve, one-twentieth of the amount stated. |
| 22. Precipitated bone phosphate; dicalcium bone phosphate. | Phosphoric acid soluble in citric acid 1 per cent. |
| 23. Sulphate of ammonia ... ... | Nitrogen 0·3 per cent.; free acid, one-fifth of the amount stated or 0·02 per cent. whichever is the greater. |
| 24. Superphosphate ... ... | Phosphoric acid soluble in water, one-twentieth of the amount stated. |
| 25. Triple superphosphate ... | |
| 26. Concentrated superphosphate | |
| 27. Burnt or quick lime, ground or otherwise. | Neutralising value, one-tenth of the amount stated. |
| 28. Burnt magnesian lime, ground or otherwise. | |
| 29. Calcium hydroxide; hydrated lime; slaked lime; slaked magnesian lime. | |
| 30. Mixed lime ... ... | |
| 31. Chalk, ground ... ... ... | Neutralising value, one-twentieth of the amount stated. |
| 32. Chalk, screened ... ... ... | Neutralising value, one-eighth of the amount stated. Amount that will pass through a declared British Standard Test Sieve, one-tenth of the amount stated. |
| 33. Limestone, ground; magnesian limestone, ground. | Neutralising value, one-twentieth of the amount stated; amount that will pass through a prescribed sieve, one-twentieth of the amount stated. |

*Limits of Variation for Feeding Stuffs*

| Article | Limits of Variation (percentages are percentages of the *whole bulk*) |
|---|---|
| 1. Alfalfa (lucerne) meal ...<br>2. Clover meal ... ... | Protein, one-tenth of the amount stated; fibre, one-eighth of the amount stated. |
| 3. Coconut or copra cake or meal<br>4. Cotton cakes or meals not decorticated.<br>5. Oil cakes or meals not otherwise specifically mentioned in the First Schedule to the Act which are the product of any one undecorticated substance or seed from which oil has been removed.<br>6. Palm kernel cake or meal | Oil, 0·75 per cent., or one-tenth of the amount stated, whichever is the greater; protein, one-tenth of the amount stated. |
| 7. Compound cakes or meals as described in the First Schedule to the Act. | Oil, 0·75 per cent., or one-tenth of the amount stated, whichever is the greater; protein, one-tenth of the amount stated: fibre, if the actual amount exceeds that stated, one-eighth of the amount stated; if the actual amount is less than that stated, one-half of the amount stated. |
| 8. Cotton cakes or meals from decorticated or partly decorticated cotton seed.<br>9. Maize by-products, not otherwise specifically mentioned in the First Schedule to the Act.<br>10. Oil cakes or meals not otherwise specifically mentioned in the First Schedule to the Act, which are the product of any one decorticated or partly decorticated substance or seed from which oil has been removed.<br>11. Rice bran or rice meal, or the by-product produced in milling shelled rice. | Oil, 0·75 per cent., or one-tenth of the amount stated whichever is the greater; protein, one-tenth of the amount stated; fibre, one-eighth of the amount stated. |
| 12. Dried brewery and distillery grains. | Oil, 0·75 per cent., or one-fifth of the amount stated, whichever is the greater; protein, one-fifth of the amount stated. |
| 13. Dried Grass ... ...<br>14. Dried Grass (maintenance quality).<br>15. Dried green fodder crops<br>16. Dried green roughage ... | Protein, one-tenth of the amount stated, provided that this limit of variation shall not operate so as to permit the application of the name " dried grass " to any article containing less than 13 per cent. protein or the names " dried grass (maintenance quality) " or " dried green fodder crops " to any article containing less than 10 per cent. protein. |

| Article | Limits of Variation (percentages are percentages of the *whole bulk*) |
|---|---|
| 17. Dried plain beet pulp ... ... | Fibre, one-eighth of the amount stated. |
| 18. Dried molassed beet pulp<br>19. Molasses feeds, as described in the First Schedule to the Act. | Sugar, one-tenth of the amount stated; fibre, one-eighth of the amount stated. |
| 20. Dried yeast ... ...<br>21. Feeding dried blood ... | Protein, one-twentieth of the amount stated. |
| 22. Feeding bone flour ... ... | Phosphoric acid, one-twentieth of the amount stated; protein, one-fifth of the amount stated. |
| 23. Feeding bone meal, ground bone, or any other bone product for feeding purposes. | Phosphoric acid and protein, one-tenth of the respective amounts stated. |
| 24. Feeding meat meal or any other product of meat for feeding purposes.<br>25. Feeding meat and bone meal, or any other product of meat and bone for feeding purposes. | Oil, 0·75 per cent., or one-tenth of the amount stated whichever is the greater; protein and phosphoric acid, one-tenth of the respective amounts stated; provided that these limits of variation shall not operate so as to permit the application of the names " feeding meat meal " and " feeding meat and bone meal " to articles containing less than 55 per cent. and less than 40 per cent. of protein respectively. |
| 26. Fish meal, white fish meal, or other product obtained by drying or grinding or otherwise treating fish or fish waste. | Oil, 0·75 per cent. or one-tenth of the amount stated whichever is the greater; protein, one-tenth of the amount stated; phosphoric acid, one-sixth of the amount stated; salt 0·75 per cent.; provided that these limits of variation shall not operate so as to permit the application of the name " white fish meal " to an article containing more than 6 per cent. of oil or 4 per cent. of salt. |
| 27. Linseed cakes and the meals of such cakes; extracted linseed meal.<br>28. Maize, flaked ... ...<br>29. Maize germ cake or meal<br>30. Maize gluten feed ...<br>31. Rape cake or meal ...<br>32. Soya cake or meal ... | Oil, 0·75 per cent. or one-eighth of the amount stated whichever is the greater; protein, one-eighth of the amount stated. |
| 33. Linseed meal ... ... ... | Oil, 0·75 per cent. or one-tenth of the amount stated whichever is the greater. |

| Article | Limits of Variation (percentages are percentages of the *whole bulk*) |
|---|---|
| 34. Malt culms ... ... ... | Protein, one-fifth of the amount stated; fibre, one-eighth of the amount stated. |
| 35. Oatmeal by-products ... ... | Fibre, one-eighth of the amount stated; provided that this limit of variation shall not operate so as to permit of the application of the name " oatfeed " to any article containing more than 27 per cent. of fibre. |
| 36. Treacle or molasses ... ... | Sugar, one-twentieth of the amount stated. |
| 37. Wheat offals or millers' offals ... | Fibre, if the actual amount exceeds that stated, one-eighth of the amount stated; if the actual amount is less than that stated, one-half of the amount stated. |

*Manner of taking samples* (Sections 3 (1) and (2), 4 (3), 5 (3), 6, 7 (1) and 12 (1))

**6.** The manner in which samples shall be taken and dealt with in cases where under the Act they are required to be taken in the prescribed manner shall be as follows :—

*Fertilisers and Feeding Stuffs*

(1) Where the weight of the whole quantity does not exceed 2 cwt., or the whole quantity is in one container, the sample may consist of such a portion of the quantity as is fairly representative of the whole, and the sample shall be of not less than 1½ lb. in weight.

(2) In the case of articles in packages, only unopened packages shall be selected for the purpose of the sample.

(3) Samples shall not be drawn from part of any quantity which part bears the appearance of having received damage in transit or after delivery.

(4) Notwithstanding anything in these Regulations, a sampling spear shall not be used if objection is raised thereto, prior to the taking of the sample, on the grounds that the material is unsuitable.

(5) In each case it shall be assumed that the quantity is composed of separate approximately equal parts and that the number of such parts is equivalent to (*a*) the number of packages to be selected in accordance with paragraph (7) (*a*), or (*b*) the number of portions to be taken in accordance with paragraph (7) (*b*) where the quantity is in bulk. The packages or portions shall be selected one from each part and shall be drawn from different positions in each part.

(6) In every case the sampling shall be done as quickly as is possible consistently with due care and the material shall not be exposed any longer than is absolutely necessary.

*Fertilisers*

(7) *If the fertiliser is in a state of fine division*

(*a*) *In packages.*—When the fertiliser is in packages and the quantity exceeds 2 cwt., a number of packages shall be selected as follows, viz.:—

| | If the sample is drawn by an inspector under Section 12 (1) of the Act | | If the sample is drawn by an official sampler, after delivery of the article, under Section 3 of the Act | |
|---|---|---|---|---|
| | Quantity taken for sampling | But not fewer packages than | Quantity taken for sampling | But not fewer packages than |
| | Per cent. | | Per cent. | |
| Where the quantity exceeds one package and does not exceed 20 packages ... ... ... ... | 20 | 2 | 10 | 2 |
| Where the quantity exceeds 20 packages and does not exceed 60 packages ... ... ... ... | 10 | 4 | 5 | 2 |
| Where the quantity exceeds 60 packages and does not exceed 200 packages ... ... ... ... | 7 | 6 | 4 | 3 |
| Where the quantity exceeds 200 packages and does not exceed 500 packages ... ... ... ... | 5 | 15 | 3 | 8 |
| Where the quantity exceeds 500 packages and does not exceed 1,000 packages ... ... ... ... | 4 | 25 | 2 | 13 |
| Where the quantity exceeds 1,000 packages ... ... ... ... | 3 | 40 | 1 | 20 |

When the number of packages to be selected according to either of the above percentage scales contains a fraction, this fraction shall be counted as a whole number.

Either

(i) The selected packages shall be emptied separately on a clean dry surface and worked up with a shovel and one shovelful taken from each. The shovelfuls so taken shall then be thoroughly mixed together and any lumps broken up.

or (ii) When the material is of a suitable nature, a portion shall be taken from each selected package by means of a closed sampling spear. The separate portions thus taken shall be thoroughly mixed together.

From the mixture so obtained, the sample shall be drawn in the following manner :—

Heap the material to form a "cone"; flatten the cone and quarter it. Reject two diagonally opposite quarters, mix the remainder and continue the quartering and rejection until the remainder is from about 2 lb. to 4 lb. in weight. Alternatively the reduction of the gross sample by the quartering method may be effected by the use of a mechanical quartering device known as a sample divider or riffle.

(*b*) *In bulk.*—Where the fertiliser is in bulk, a number of portions shall be taken by a shovel or a closed sampling spear as follows :—

| | Portions |
|---|---|
| Where the quantity exceeds 2 cwt., and does not exceed 1 ton ... ... ... ... ... ... ... | 4 |
| Where the quantity exceeds 1 ton and does not exceed 2 tons ... ... ... ... ... ... ... | 6 |
| Where the quantity exceeds 2 tons and does not exceed 5 tons ... ... ... ... ... ... ... | 10 |
| Where the quantity exceeds 5 tons and does not exceed 10 tons ... ... ... ... ... ... ... | 15 |
| Where the quantity exceeds 10 tons and does not exceed 25 tons ... ... ... ... ... ... ... | 25 |
| Where the quantity exceeds 25 tons and does not exceed 50 tons ... ... ... ... ... ... ... | 40 |
| Where the quantity exceeds 50 tons and does not exceed 100 tons ... ... ... ... ... ... ... | 60 |
| Where the quantity exceeds 100 tons for each additional 10 tons or part thereof ... ... ... ... ... | 2 |

The portions, according to whether they have been taken by a shovel or spear, shall be treated in the manner described in paragraph (7) (*a*) and the sample drawn in the manner also described in that paragraph.

(8) *If the fertiliser is in a coarse or lump condition,* as in the case of burnt lime, not ground, the sample shall be drawn as follows :—

(*a*) *In Packages.*—The packages, selected according to the appropriate scale in paragraph (7) (*a*), shall be emptied separately on a clean dry surface and worked up with a shovel and one shovelful taken from each. The shovelfuls so taken shall be crushed immediately and the whole passed through a sieve with meshes one and a quarter inch square. It shall be mixed thoroughly and rapidly and a sample of about 4 lb. to 6 lb. in weight drawn in the manner described in paragraph (7) (*a*).

(*b*) *In Bulk.*—Shovelfuls shall be taken according to the appropriate scale in paragraph (7) (*b*). The shovelfuls so taken shall be treated, and a sample shall be drawn, in the manner described in paragraph (7) (*a*).

(9) *When the fertiliser consists of bulky material,* uneven in character and likely to get matted together, such as shoddy, wool refuse, hair, etc.—

(*a*) *In Packages.*—The packages, selected according to the appropriate scale in paragraph (7) (*a*), shall be emptied separately on a clean dry surface and the matted portions torn up.

One shovelful shall be taken from each and the shovelfuls so taken shall be thoroughly mixed together. The sample shall be drawn from the mixture and shall be from about 2 lb. to 4 lb. in weight. If the

material separates into a fibrous part and a powdery part, the sample drawn shall consist of these two parts in approximately their relative proportions as they exist in the material.

(*b*) *In Bulk.*—Shovelfuls shall be taken according to the appropriate scale prescribed in paragraph (7) (*b*). The shovelfuls thus taken shall be treated, and a sample shall be drawn, in the manner described in paragraph (9) (*a*).

(10) *When the fertiliser consists of materials such as burnt lime or slaked lime (calcium hydroxide)* which are liable to undergo change on exposure to air and moisture, or *when the fertiliser consists of materials such as calcium nitrate, or ammonium nitrate,* which are liable to absorb moisture, or *when the material is sulphate of ammonia,* the sampling shall be carried out rapidly in a dry place and the sample divided into parts and packed immediately.

(11) *When the fertiliser is in a fluid condition*

(*a*) *In bottles or containers each containing not more than one quart :*— The number of bottles or containers to be selected shall be in accordance with the appropriate scale in paragraph (7) (*a*). The entire contents of the selected bottles or containers shall be emptied into a clean, dry, glass or glazed earthenware vessel and well mixed by stirring or shaking. From this mixture a sample of from about one quart to about half-a-gallon shall be drawn, the mixture being stirred or shaken until immediately before the sample is drawn.

(*b*) *In drums, kegs, or other containers each containing more than one quart :*—The number of containers to be selected shall be in accordance with the appropriate scale in paragraph (7) (*a*). The selected containers shall be well shaken or the contents agitated or otherwise treated to ensure uniformity. An approximately equal proportion of the fluid shall then be taken immediately from each of the selected containers, emptied into a clean, dry, glass or glazed earthenware vessel and well mixed by stirring or shaking. From this mixture a sample of from about one quart to about half-a-gallon shall be drawn, the mixture being stirred or shaken until immediately before the sample is drawn.

(12) *When stones are naturally present in a fertiliser,* they shall, if possible, be broken up and mixed with the quantity from which a sample is to be drawn. If they cannot be broken up they shall be removed from the mixture from which a sample is to be drawn and the weight of the residue of that mixture and the weight of the stones shall be ascertained and reported to the analyst.

*Feeding Stuffs*

(13) *When the feeding stuff is in the state of small lumps or meal,* it shall be sampled in the manner prescribed for a fertiliser in paragraphs (7) (*a*) or (7) (*b*).

(14) *When the feeding stuff is in the form of cake, whether in bags or in bulk,* a number of cakes shall be selected from the different parts of the whole quantity as follows:—

| | Cakes |
|---|---|
| Where the quantity exceeds 2 cwt., and does not exceed 2 tons | 5 |
| Where the quantity exceeds 2 tons and does not exceed 5 tons | 10 |
| Where the quantity exceeds 5 tons and does not exceed 50 tons | 15 |
| Where the quantity exceeds 50 tons and does not exceed 100 tons ... ... ... ... ... ... ... | 25 |
| Where the quantity exceeds 100 tons for each additional 20 tons or part thereof ... ... ... ... ... | 2 |

The selected cakes shall be broken by a cakebreaker or in some other manner so that the whole will pass through a sieve with meshes one and a quarter inch square and then shall be thoroughly mixed. From the mixture so obtained, a sample of not less than 6 lb. in weight shall be drawn in the manner described in paragraph (7) (*a*).

(15) *When the feeding stuff is in a fluid or semi-fluid condition,* packages shall be taken in accordance with the appropriate scale shown in paragraph (7) (*a*), the contents well mixed by stirring or shaking, and a similar portion taken from each. These portions shall then be mixed together, in a clean dry vessel, and from the mixture a sample of from about 2 lb. to 4 lb. in weight shall be drawn.

(16) *Where any appreciable portion of the feedingstuff appears to be mouldy,* or is otherwise apparently unsuitable for feeding purposes, separate samples shall be drawn of the unsuitable portion and of the residue of the feeding stuff respectively, and in the case of unsuitable cakes, the sample may consist of several large pieces representative thereof.

*Division of Sample*

(17) Where the sample has been taken in the prescribed manner the person taking the sample shall divide it into three parts, as nearly as possible equal, in the following manner :—

(*a*) *In the case of dry or powdered substances :* The sample, drawn as prescribed in the foregoing paragraphs, shall be thoroughly mixed on a floor covering which will adequately protect the sample from accidental contamination, and divided into three similar and approximately equal parts. Each of these parts shall be placed in a clean, dry, bottle or jar with a close-fitting stopper or lid or (except in the case of a fertiliser) a clean dry tin with a close-fitting lid (such as a lever lid), so that the original composition of the fertiliser or feeding stuff may be preserved. In the case of burnt lime, slaked lime (calcium hydroxide), calcium nitrate, ammonium sulphate and other substances likely to undergo change if not kept in an air-tight receptacle, the bottle or jar used shall have a ground-in or rubber stopper or a metal cap with inner pad or a closure of the kind used on preserving jars. Each of the said parts shall be so secured and sealed that the bottle, jar or tin containing it cannot be opened without breaking the seal ; or alternatively, the bottle, jar or tin containing the part may be placed in a stout envelope or in a linen or cotton bag, and the envelope or bag then secured and sealed in such a manner that the part of the sample cannot be removed without breaking the seal or the envelope or the bag.

(*b*) *In the case of substances in a fluid or semi-fluid condition :* The sample drawn as prescribed in the foregoing paragraphs, shall be thoroughly mixed and at once divided into similar and approximately equal parts by pouring successive portions into each of three clear glass bottles or jars, preferably with wide mouths. The bottles or jars used shall be provided with air-tight stoppers or with lids which shall be so fastened that spillage or evaporation of the contents is prevented.

(18) Each of the said parts shall be sealed and initialled by the person taking the sample. It may also be sealed or initialled by the person on whose premises the sample is taken, or his representative. Each part shall be marked with the name of the article, any mark applied to the article in compliance with the Act, the date and place of the sampling and some distinguishing number, in such a manner that the particulars so marked can be seen without breaking the seal or seals.

*Manner of marking articles and nature of marks.* (Section 4 (1))

**7.** A parcel required by Section 4 (1) of the Act to be marked shall be marked in writing, printing, stencilling or in any other appropriate manner either

(*a*) on the article itself,

(*b*) where the parcel consists of a single package, on the wrapper or container of, or on a label securely attached to or placed inside the package,

(*c*) where the parcel consists of a number of separate packages either

(i) on the wrapper or container of or on a label securely attached to or placed inside each of the packages, or

(ii) otherwise in such a manner that the mark shall be readily apparent and unequivocally associated with the parcel, or

(*d*) where the parcel consists of a number of packages themselves enclosed in a larger package or packages, on the wrapper or container of, or on a label securely attached to or placed inside

(i) each of the packages, or

(ii) such larger package, or

(iii) each of such larger packages;

provided that

(*a*) the marking shall be legible, and

(*b*) every parcel shall be marked in such a manner that it shall remain marked so long as it is on the premises where it has been marked.

*Form of Register of Marks specifying the particulars which the several marks are used as indicating.* (Section 4 (2))

**8.** Any register of marks kept in accordance with Section 4 (2) of the Act, specifying the particulars which the several marks entered in the register are used as indicating, shall be kept in such form that the particulars required by the said Section of the Act, relating to each separate parcel, shall be readily ascertainable by an inspector.

*Form of Register of Parcels delivered or consigned ex ship.* (Section 5 (2))

**9.** The register of articles delivered or consigned direct from ships or quays to purchasers, required to be kept in accordance with Section 5 (2) of the Act, shall be kept in such form that the particulars required, relating to each separate parcel or consignment, shall be readily ascertainable by an inspector.

*Method of dealing with third part of sample.* (Section 13 (1))

**10.** In the case of a sample taken by an official sampler and divided by him into three parts in accordance with Section 13 (1) of the Act, the third part shall be delivered or sent by registered post to the last seller or his agent. In the case of a sample taken by an inspector and divided by him as aforesaid, the third part shall be delivered or sent by registered post to the person who would be liable to prosecution in the event of an offence being disclosed by the results of analysis of the sample, or to the representative of such person.

*Period for which Registers and Statutory Statements shall be preserved.* (Section 9 (1))

**11.** The period for which a register or a statutory statement shall be preserved in accordance with Section 9 (1) of the Act shall be four months.

*Period for which duplicate part of sample shall be retained by agricultural analyst.* (Section 13 (2))

**12.** The period for which an agricultural analyst shall retain one of the parts of each sample sent to him in pursuance of Section 13 (1) of the Act shall be six months from the date of the certificate of analysis relating to the sample.

*Form of Quarterly Return of Result of Analyses.* (Section 18)

**13.** The return of results of analysis of the samples submitted to the agricultural analyst for each county, county borough, burgh or other district, required to be made in accordance with Section 18 of the Act, shall be in the forms C and D set forth in the Schedule hereto or to the like effect.

*Methods of Analysis of Fertilisers*

**14.** The method in which an analysis of a fertiliser shall be made for the purposes of the Act is as follows:—

(1) *Preparation of the sample for analysis:—*

(*a*) In the case of powdered fertilisers in a dry, or moderately dry, condition, the sample shall be passed through a sieve having apertures about one millimetre square. Adventitious materials which cannot be conveniently crushed, e.g. fragments of metal in basic slag, shall be removed and allowed for.

(*b*) Other substances which are dry enough to powder, but which are not in a fine condition, shall be pulverised until the sample passes through a sieve having apertures about one millimetre square.

(*c*) Wool, hair, hoof, shoddy and similar substances shall be pulled apart and cut until in a fine condition; or, if dry, they may be passed through a shredding machine.

(*d*) Moist fertilisers which do not admit of being passed through a sieve shall be thoroughly mixed by the most suitable means.

(*e*) In the case of substances which gain or lose water during the process of pulverising or mixing, the proportion of water shall be determined in the coarse and in the powdered condition respectively, and the results of the analysis of the powdered sample shall be calculated to the water content of the original coarse substance.

(*f*) Crystalline or saline materials, such as sulphate of ammonia, nitrate of soda or potash salts, may be prepared by being well mixed and rapidly ground in a stoneware mortar, the portion finally reserved for analysis being specially finely ground.

(*g*) When the sample has been passed through the sieve and thoroughly mixed, or, if not passed through the sieve, has been thoroughly mixed, a part of it not being less than 100 grams shall be placed in a stoppered bottle and from this the portions for analysis shall be weighed.

(2) *Determination of moisture*

A weighed quantity of the sample shall be dried at 100°C and then re-weighed.

(3) *Determination of nitrogen*

The presence or absence of nitrates shall first be ascertained:—

(*a*) *Nitrogen (organic and ammoniacal) in absence of nitrates*

A weighed portion of the sample shall be transferred to a Kjeldahl digestion flask, 25 millilitres of concentrated sulphuric acid (or more if necessary) shall be added and the flask gently heated until frothing

ceases. 10 grams of potassium or sodium sulphate (anhydrous) shall then be added and the flask further heated until the colour of the clear liquid ceases to diminish. The heating shall be continued for an hour thereafter to ensure complete oxidation of the organic matter. The operation shall be accelerated by the addition of a small amount of a mercury compound or a globule of mercury to the liquid in the digestion flask.

The quantity of ammonia present in the liquid shall be determined by distillation into standard acid after liberation with alkali and with the addition also of sodium or potassium sulphide solution.

(*b*) *Nitrogen (organic, ammoniacal and nitric), when nitrates are present*

The presence or absence of more than traces of chlorides shall first be ascertained.

(i) *When chlorides are not present in more than traces* a weighed portion of the sample shall be transferred to a Kjeldahl digestion flask, 30 millilitres of ice-cold concentrated sulphuric acid, containing one gram of salicylic acid or one gram of phenol, shall be added and the flask shall be shaken so as to mix its contents without delay. The shaking shall be continued at intervals during ten minutes, the flask being kept cool, and then 10 grams of potassium or sodium sulphate (anhydrous) shall be added, together with either 5 grams of crystalline sodium thiosulphate or 2 grams of zinc dust. The flask shall be heated until the colour of the clear liquid ceases to diminish and for an hour thereafter. A further quantity of concentrated sulphuric acid may be added if necessary. Mercury compound or mercury shall be used as described in paragraph (3) (*a*).

The quantity of ammonia shall be determined as described in paragraph (3) (*a*).

(ii) *When chlorides are present in more than traces* about 2 grams of the sample, accurately weighed, and 3 grams of finely powdered Devarda metal shall be placed in a 500 millilitre Kjeldahl digestion flask, and the sides of the flask shall be washed down with 50 millilitres of water. The flask shall be closed with a rubber stopper provided with (*a*) a tap funnel and (*b*) a delivery tube connected with a U-tube (with bulbs) containing 10 millilitres of 10 per cent. volume/volume sulphuric acid. 5 millilitres of sodium hydroxide solution of 1·40 specific gravity shall be added through the tap funnel. The flask shall be allowed to stand for half an hour and then heated to just short of boiling point for a further hour. At the end of this digestion the flask shall be cooled and 20 millilitres of sulphuric acid of 1·50 specific gravity shall be added through the tap funnel in such a manner that the sides of the Kjeldahl flask shall be washed down by the acid. The rubber stopper shall now be removed and the contents of the U-tube (with bulbs) shall be washed into the Kjeldahl flask. 25 millilitres of concentrated sulphuric acid shall be added to the flask and the flask shall be heated until all the water has boiled off. 10 grams of potassium or sodium sulphate (anhydrous) shall then be added and the flask further heated until the colour of the clear liquid ceases to diminish. The digestion shall be continued for two hours thereafter to ensure complete oxidation of the organic matter. Mercury compound or mercury shall be used as described in paragraph (3) (*a*). The quantity of ammonia shall be determined as described in paragraph (3) (*a*).

(*c*) *Nitrogen in form of ammonium salts*

(i) *In absence of organic matter.*—A weighed portion of the sample shall be dissolved in water and made up to a definite bulk. An aliquot part of the solution shall be transferred to a distillation flask and the quantity of ammonia shall be determined as described in paragraph (3) (*a*).

(ii) *In presence of organic matter.*—A weighed portion of the sample shall be well shaken with water, filtered, the insoluble matter thoroughly washed, the filtrate transferred to a distillation flask, diluted with water to about 200 millilitres, 5 grams of magnesium oxide (free from carbonates) added, and the quantity of ammonia determined as described in paragraph (3) (*a*).

In the case of mixed fertilisers containing calcium carbonate with small quantities of ammonium salts, the portion taken for analysis must be dissolved in or shaken with hydrochloric acid instead of water.

(*d*) *Nitrogen in nitrates*

A weighed portion of the sample shall be dissolved in water and made up to a definite bulk. An aliquot part of the solution shall be transferred to a flask and a quantity of finely powdered Devarda metal added. The quantity of Devarda metal shall be not less than six times the weight of the sample present in the aliquot part taken. An excess of concentrated alkali shall then be added and the flask at once connected with a distillation apparatus. After standing for 30 minutes to allow the reaction to proceed, heating gently if necessary, the ammonia shall be distilled over into standard acid. Distillation shall proceed for at least one hour.

(*e*) *Control experiment in determination of nitrogen*

The materials used in any of the methods described in paragraph (3) shall be examined as to their freedom from nitrogen by means of a control experiment carried out under similar conditions with the same quantities of the reagents which have been employed in the actual analysis, in the cases of paragraph (3) (*a*) and (*b*) one gram of pure sugar being used in place of the weighed portion of the sample. The quantity of standard acid found to have been neutralised in this control experiment shall be deducted from the total quantity of acid neutralised in the distillation of the sample.

(*f*) *Absence of nitrates* may be established as follows:—

5 grams of the sample shall be shaken with about 80 millilitres of water in a 100 millilitre flask; then 1 gram of alum shall be added, the volume made up to 100 millilitres well shaken and filtered. To 1 millilitre of the filtrate diluted with 9 millilitres of water shall be added 1 millilitre of Indigo solution followed by 10 millilitres of concentrated sulphuric acid, and brought to the boiling point.

If the blue colour of the Indigo is not discharged then the sample shall be regarded as free from nitrates for the purpose of the determination.

1 millilitre of this standard Indigo = 0·1 milligram $N_2O_5$.

(*Note*:—The above filtrate may also be used for testing for chlorides as required by paragraph (3) (*b*).)

(4) *Determination of phosphoric acid*

(*a*) *Soluble phosphoric acid.*—20 grams of the sample shall be continuously agitated for 30 minutes in a litre flask with 800 millilitres of water at room temperature of about 20°C. The flask shall then be filled to the mark and shaken and the contents shall be filtered.

Either

(i) 50 millilitres of the filtrate shall be boiled with 20 millilitres of concentrated nitric acid and the phosphoric acid shall be determined by the molybdate method prescribed in paragraph (4) (*e*). In the case of fertilisers in which the proportion of phosphoric acid soluble in water is small, a larger quantity of the filtrate prepared as above shall be taken.

Or, alternatively,

(ii) 50 millilitres of the filtrate shall be boiled with 20 millilitres of concentrated nitric acid, cooled and the excess of acid neutralised with ammonia. 50 millilitres of ammonium citrate solution, prepared as described below, shall be added and the mixture raised to boiling point. Magnesia mixture shall then be added in the manner described in paragraph (4) (*e*).

(*b*) *Insoluble phosphoric acid.*—The quantity of soluble phosphoric acid as determined in paragraph (4) (*a*) shall be deducted from the quantity of phosphoric acid as determined in paragraph (4) (*c*) and the difference, if any, shall be taken as the quantity of insoluble phosphoric acid.

(*c*) *Total phosphoric acid*

Either

(i) A weighed portion of the sample shall be heated with concentrated sulphuric acid until all organic matter is destroyed and the phosphoric acid is completely in solution. After dilution the solution shall be filtered, the insoluble matter thoroughly washed and the filtrate made up to a definite bulk. The phosphoric acid shall be determined by the method described in paragraph (4) (*e*), in an aliquot part of the solution, which shall first be nearly neutralised and then acidified with nitric acid. The insoluble matter is to be washed from the filter, re-extracted with acid and any phosphoric acid present in the solution added to the main quantity.

Or, alternatively,

(ii) A weighed portion of the sample shall be incinerated or otherwise treated to destroy organic matter, if present. When direct incineration is employed, the weighed portion of the sample may be treated, before being heated, with a nitrate or other oxidising material to prevent loss of phosphoric acid during heating or subsequent treatment. The residue (or the weighed portion taken, if no organic matter is present) shall be dissolved in hydrochloric acid, with the addition, if necessary, of nitric acid, and the solution shall be evaporated to dryness or, if much calcium is present, to a syrupy consistency to fix silica. The residue shall be boiled with nitric acid and, when much iron is present, with hydrochloric acid also. After dilution the solution shall be filtered, the insoluble matter thoroughly washed and the filtrate made up to a definite bulk. The phosphoric acid shall be determined in an aliquot part of the solution by the method described in paragraph (4) (*e*). The insoluble matter is to be washed from the filter, re-extracted with acid and any phosphoric acid present in the solution added to the main quantity.

(*d*) *Citric soluble phosphoric acid (that is, phosphoric acid soluble in the prescribed citric acid solution).*—5 grams of the sample shall be transferred to a stoppered bottle of about 1 litre capacity. 10 grams of pure crystallised citric acid shall be dissolved in water, the volume shall be made up to 500 millilitres at a temperature of about 20°C. and the solution shall be added to the weighed portion of the sample in the bottle. To lessen the possibility of caking, the portion of the sample in the bottle may be moistened with 5 millilitres of alcohol or methylated spirit before the citric acid solution is added; and in that case the volume of the citric acid solution shall be 495 millilitres instead of 500 millilitres. The bottle shall be at once fitted into a mechanical shaking apparatus and shall be continuously agitated during 30 minutes, at a temperature of about 20°C. The solution shall then be filtered through a large rapid filter, the whole of the liquid being poured on the paper at once. If not clear, the filtrate shall be again poured through the same paper.

50 millilitres of the filtrate shall be taken and the phosphoric acid shall be determined forthwith by the molybdate method described in paragraph (4) (*e*).

(*e*) *Molybdate method.*—To the solution, which should contain not more than 0·4 gram of phosphoric acid ($P_2O_5$), and preferably from 0·1 to 0·3 gram, obtained as above described in paragraphs (4) (*a*) (i), (*c*) or (*d*), 100 to 150 millilitres of molybdic acid solution prepared as described below, or an excess of such solution, i.e., more than is sufficient to precipitate all the phosphoric acid present in the solution, shall be added and the vessel containing the solution shall be placed in a water bath maintained at 70°C. for 15 minutes or until the solution has reached 70°C. It shall then be taken out of the bath and allowed to cool and the solution shall be filtered, the phospho-molybdate precipitate being washed several times by decantation and finally on the paper with one per cent. nitric acid solution. The filtrate and washings shall be mixed with more molybdic acid solution and allowed to stand for some hours in a warm place in order to ascertain that the whole of the phosphoric acid has been precipitated. The phospho-molybdate precipitate shall be dissolved in cold 2 per cent. ammonia solution, prepared as described below, and about 100 millilitres of the ammonia solution shall be used for the solution and washings. The solution shall be raised to the boiling point, the beaker removed from the burner and 15 to 20 millilitres of magnesia mixture, prepared as described below, or an excess of such mixture, i.e., more than sufficient to precipitate all the phosphoric acid present, shall then be added drop by drop, with constant stirring. The stirring shall be continued at intervals until the precipitate becomes crystalline. After standing at least 4 hours with occasional stirring, the precipitate shall be filtered off, washed with 2 per cent. ammonia solution until free from chloride, dried, ignited, and finally weighed as magnesium pyrophosphate. The filtrate and washings should not exceed 200 millilitres, and are to be tested by the addition of more magnesia mixture.

(*f*) *Preparation of molybdic acid solution.*—The molybdic acid solution shall be prepared as follows:—

125 grams of molybdic acid and 100 millilitres of water shall be placed in a litre flask and the molybdic acid shall be dissolved by the addition, while the flask is shaken, of 300 millilitres of 8 per cent. ammonia solution, prepared as described below. 400 grams of ammonium nitrate shall be added, the solution shall be made up to

the mark with water and the whole added to 1 litre of nitric acid (specific gravity 1·19). The solution shall be maintained at about 35°C. for 24 hours and then filtered.

(*g*) *Preparation of magnesia mixture.*—The magnesia mixture shall be prepared as follows :—

110 grams of crystallised magnesium chloride and 140 grams of ammonium chloride shall be dissolved in 1,300 millilitres of water. This solution shall be mixed with 700 millilitres of 8 per cent. ammonia solution, prepared as described below, and the whole shall be allowed to stand for not less than three days and shall then be filtered.

(*h*) *Preparation of the ammonia solutions.*—The 8 per cent. ammonia solution shall be prepared as follows :—

One volume of ammonia solution of specific gravity 0·880 shall be mixed with three volumes of water. This solution shall then be adjusted by the addition thereto of more strong ammonia solution or water as required until the specific gravity of the solution is 0·967.

The 2 per cent. ammonia solution shall be prepared as follows :—

One volume of 8 per cent. ammonia solution shall be mixed with three voulmes of water.

(*i*) *Preparation of ammonium citrate solution.*—110 grams of pure citric acid shall be dissolved in water, the solution treated with 400 millilitres of 24 per cent. ammonia of specific gravity 0·9135 and then diluted to one litre.

(5) *Determination of potash*

Potash shall be determined by the perchloric acid method or, alternatively, by the platinum chloride method.

(1) *Perchloric acid method*

(*a*) *Salts of potash free from sulphates.*—A weighed portion of the sample equivalent in potash content to 1·5 to 2·0 grams of potash ($K_2O$) shall be dissolved in water. The solution shall be filtered if necessary and made up to 500 millilitres. The potash shall be determined in 50 millilitres of the solution by precipitation with perchloric acid as described in paragraph (5) (1) (*d*).

(*b*) *Salts of potash containing sulphates*

Either

(i) A weighed portion of the sample equivalent in potash content to 1·5 to 2·0 grams of potash ($K_2O$) shall be boiled with 300 millilitres of water to which 20 millilitres of hydrochloric acid have been added. Barium chloride solution shall be cautiously added, drop by drop, to the boiling solution in an amount slightly in excess of that previously determined in order to ensure the complete precipitation of sulphate. The liquid shall be cooled, made up to 500 millilitres and filtered. 50 millilitres of the filtrate shall be taken and evaporated to dryness and shall then be moistened with concentrated hydrochloric acid, again evaporated to dryness, treated with a little dilute hydrochloric acid and filtered if necessary. The potash shall be determined by precipitation with perchloric acid as described in paragraph (5) (1) (*d*).

If the solution contains phosphates, iron, manganese or other substances that would interfere with the determination of potash, the method described in paragraph (5) (1) (*c*) is to be used instead of the method described in paragraph (5) (1) (*d*) (i).

Or, alternatively,

(ii) A weighed portion of the sample equivalent in potash content to 1·5 to 2·0 grams of potash ($K_2O$) shall be boiled with 300 millilitres of water, cooled, made up to 500 millilitres and filtered. To 50 millilitres of the filtrate, 30 millilitres of a solution of sodium cobaltinitrite, prepared as described below, shall be added, the mixture stirred and allowed to stand for not less than two hours. It shall then be filtered and washed with water containing a small amount of the cobaltinitrite solution. The precipitate shall be dissolved in hot dilute hydrochloric acid and the solution filtered into a small porcelain dish and evaporated to dryness. The residue shall be dissolved in water and the potash determined by precipitation with perchloric acid as described in paragraph (5) (1) (*d*).

(*c*) *Potash in guanos and mixed fertilisers*

Either

(i) 10 grams of the sample shall be gently incinerated at a temperature not exceeding 500°C. in order to destroy organic matter, if present, and shall be transferred to a 500 millilitre flask with a little water and 10 millilitres of concentrated hydrochloric acid. The contents of the flask shall be warmed, gradually diluted with water to about 300 millilitres and boiled. 10 grams of pure lime (made by calcination of pure calcium carbonate in a muffle furnace) shall be made into a paste with water and shall be poured into the flask. The contents of the flask shall be again gently boiled and shall be kept heated for about half an hour with frequent shaking. The contents of the flask shall be cooled, made up to 500 millilitres, thoroughly shaken and filtered. 250 millilitres of the filtrate shall be introduced into another 500 millilitre flask and the contents shall be made just acid with hydrochloric acid and heated to boiling point. Barium chloride solution shall then be added drop by drop until there is no further precipitation of barium sulphate. The hot solution, without filtration, shall be made alkaline with ammonia, and the calcium and any excess of barium shall be precipitated by addition of ammonium carbonate and a little ammonium oxalate. The solution shall then be cooled, made up with water to 500 millilitres, thoroughly shaken and filtered. 100 millilitres of the filtrate shall be evaporated to dryness and the ammonium salts expelled by gentle heating over a low flame, the temperature being carefully kept below that of low redness. The residue shall be moistened with concentrated hydrochloric acid, evaporated to dryness, taken up with water and filtered. The potash shall be determined in the filtrate by precipitation with perchloric acid as prescribed in paragraph (5) (1) (*d*).

Or, alternatively,

(ii) 10 grams of the sample shall be gently incinerated in order to char organic matter, if present, and shall then be heated for 10 minutes with 10 millilitres of concentrated hydrochloric acid and finally boiled with 300 millilitres of water. The liquid shall be filtered into a half-litre flask and the residue washed. The solution shall be made up to 500 millilitres and 50 millilitres taken, boiled with

solution of sodium nitrite to expel ammonium salts, if present, and evaporated to dryness. The residue shall be dissolved in water containing a little hydrochloric acid and sufficient sodium citrate added to prevent precipitation of phosphates. It shall then be mixed with 30 millilitres of cobaltinitrite solution, prepared as described below, in the manner described in paragraph (5) (1) (*b*) (ii) and the precipitate treated as therein directed.

(*d*) *Precipitation of potash as potassium perchlorate.*—To the solution obtained as above described in paragraphs (5) (1) (*a*), (*b*) or (*c*) and placed in a small glass or porcelain basin, about 7 millilitres of a 20 per cent. solution of perchloric acid (Specific gravity 1·125), free from chloric acid, shall be added. The basin shall be placed on a hot plate or sand bath and the contents evaporated until white fumes are copiously evolved.

The precipitate shall be re-dissolved in hot water, a few drops of perchloric acid solution added and the whole concentrated again to the fuming stage. After cooling, the residue in the basin shall be thoroughly stirred with 20 millilitres of alcohol of specific gravity 0·816 to 0·812 (95 to 96 per cent. of alcohol by volume). The precipitate shall be allowed to settle and the clear liquid shall be poured through a filter paper, draining the precipitate as completely as possible. The precipitate on the paper and in the basin shall then be redissolved in hot water, 2 millilitres of perchloric acid added, and the whole evaporated down to the fuming stage. After cooling, the residue in the basin shall be thoroughly stirred with 20 millilitres of alcohol of specific gravity 0·816 to 0·812 (95 to 96 per cent. of alcohol by volume). The precipitate shall be allowed to settle and the clear liquid shall be poured through a weighed or counterpoised filter paper or gooch crucible, draining the precipitate as completely as possible from the liquid before adding the washing solution. The precipitate shall be washed by decantation with alcohol (as above) saturated with potassium perchlorate at the temperature at which it is used, pouring the washings through the paper or gooch crucible on which the whole of the precipitate is finally collected, dried at 100°C., and weighed. The precipitate is to be regarded as $KClO_4$, and is to be calculated to its equivalent as $K_2O$.

(*e*) *Preparation of the cobaltinitrite solution.*—The cobaltinitrite solution shall be prepared as follows:—50 grams of cobalt nitrate and 300 grams of sodium nitrite shall be dissolved in water, acidified with 25 millilitres of glacial acetic acid and diluted to a litre. The solution shall be filtered after standing 24 hours and is then ready for use. It must be kept in the dark.

(2) *Platinum chloride method*

(*a*) *Salts of potash.* A quantity of the sample about 2·5 grams in weight, accurately weighed, shall be heated nearly to boiling point with 10 millilitres of concentrated hydrochloric acid and 50 millilitres of water, breaking down with a stirring rod any crystals or lumps. It shall be diluted with water to about 100 millilitres and shall be boiled gently for a few minutes. It shall then be cooled, made up to 250 millilitres, or to such larger volume that 50 millilitres shall contain about 0·03 to 0·1 gram of $K_2O$, and filtered. The potash shall be determined in the filtrate as described in paragraph (5) (2) (*d*).

(*b*) *Potash in mixed fertilisers containing little or no organic matter.* A quantity of the sample about 2·5 grams in weight, accurately weighed, shall be boiled for 30 minutes with 125 millilitres of water and 50 millilitres of saturated ammonium oxalate solution. If necessary,

a small quantity of a potash-free anti-foaming agent may be added. It shall then be cooled, a slight excess of ammonium hydroxide added, made up to 250 millilitres, or to such larger volume that 50 millilitres shall contain about 0·03 to 0·1 gram of $K_2O$, and filtered. The potash shall be determined in the filtrate as described in paragraph (5) (2) (*d*).

(*c*) *Potash in mixed fertilisers containing organic matter.* 10 grams of the sample shall be gently incinerated at a temperature not exceeding 500°C. in order to destroy organic matter. The residues shall be boiled for 30 minutes with 125 millilitres of water and 50 millilitres of saturated ammonium oxalate solution. It shall then be cooled, a slight excess of ammonium hydroxide added, made up to 500 millilitres, or to such larger volume that 50 millilitres shall contain about 0·03 to 0·1 gram of $K_2O$, and filtered. The potash shall be determined in the filtrate as described in paragraph (5) (2) (*d*).

(*d*) *Precipitation of potash as potassium chloroplatinate.* To 50 millilitres of the filtrate, or such smaller quantity diluted to 50 millilitres as shall contain about 0·03 to 0·1 gram of $K_2O$, shall be placed in a digestion flask of capacity about 300 to 500 millilitres, together with 10 millilitres of concentrated nitric acid. If desired a small silica bead or granule weighing about one-quarter of a gram may be added to prevent bumping. This shall have been previously tared with a prepared gooch crucible or sintered glass crucible having an average pore diameter of 5 to 15 microns. The mixture shall be boiled for 2 minutes and 10 millilitres of concentrated hydrochloric acid shall be added. It shall be boiled down to approximately 25 millilitres and 5 millilitres of concentrated hydrochloric acid and an excess of platinum chloride solution over that required by the total alkalis present shall be added. The platinum chloride solution shall contain 0·5 gram of platinum in 10 millilitres. The mixture shall be boiled down to 10 to 15 millilitres rotating the flask occasionally, and 5 millilitres of concentrated hydrochloric acid added. The heat shall be reduced and the mixture boiled down to 3 to 5 millilitres (depending on the amount of precipitate) rotating the flask frequently near the end of the evaporation. The flask shall be removed from the heat and swirled to dissolve any soluble residue on the walls. It shall be cooled and 25 millilitres of 95 per cent. alcohol shall be immediately added so that it washes completely the neck of the flask. The flask shall be chilled under running water, swirled and allowed to stand for at least 5 minutes. The contents of the flask shall be decanted into the tared crucible, suction applied, and the precipitate, together with the silica bead or granule if used, shall be transferred to the tared crucible with a stream of 95 per cent. alcohol and thoroughly washed. The suction shall be reduced and the precipitate carefully washed with 2 or 3 portions of 10 millilitres each of a 20 per cent. aqueous solution of ammonium chloride saturated with potassium chloroplatinate at the temperature of washing and filtered immediately before use. Suction shall be increased and the precipitate washed 4 or 5 times with 10 millilitre portions of the wash solution. Finally the precipitate shall again be washed thoroughly with 95 per cent. alcohol. The crucible and contents shall be dried at 100°C. and weighed. The precipitate is to be regarded as $K_2PtCl_6$ and is to be calculated to its equivalent of $K_2O$ by multiplying its weight by 0·19376.

(6) *Determination of free acid in sulphate of ammonia*

20 grams of the sample shall be dissolved in about 50 millilitres of neutral distilled water and the solution filtered. The filtrate shall be made up to about 250 millilitres and then titrated with decinormal sodium

hydroxide solution, using two or three drops of methyl orange solution as indicator. The methyl orange solution shall contain 0·5 gram of methyl orange in a litre of water. The result shall be expressed as percentage by weight of sulphuric acid ($H_2SO_4$).

(7) *Determination of neutralising value in liming materials*

A portion of the sample shall be rapidly ground and passed through a sieve having apertures of about 0·2 millimetre square (British Standard Test Sieve, mesh No. 72*) and from this specially prepared portion the quantities for determination of neutralising value shall be weighed. (Precautions shall be taken to prevent the absorption of moisture by the sample during and subsequent to its preparation.)

A quantity of the sample about 0·5 gram in weight, accurately weighed, shall be transferred to a conical flask of about 300 millilitre capacity, 50 millilitres of 0·5 normal hydrochloric acid shall be added and the mixture boiled gently for 5 minutes. The mixture shall be cooled and the excess acid titrated with standard caustic soda solution using phenolphthalein as indicator. 1 millilitre of 0·5 normal hydrochloric acid (HCl) is equivalent to 0·01402 gram calcium oxide (CaO).

(8) *Determination of magnesium in lime and ground limestone*

A weighed quantity of about one gram of the finely ground sample shall be boiled with 50 millilitres of 0·5 normal hydrochloric acid for three minutes. 2 millilitres of 20 volume hydrogen peroxide solution shall be added and the liquid reboiled. The liquid shall be cooled and 0·33 gram of ammonium chloride, a slight excess of 8 per cent. ammonia and 0·1 gram of ammonium persulphate added. The excess of ammonia shall be removed by boiling. The precipitate, if any, shall be filtered on a small paper and washed with two portions each of 10 millilitres of hot water, the filtrate and washings being retained. The precipitate shall be washed off the filter paper, using not more than 50 millilitres of water, and boiled with 50 millilitres of 0·5 normal hydrochloric acid. The solution shall be cooled and 0·33 gram of ammonium chloride, a slight excess of 8 per cent. ammonia and 0·1 gram ammonium persulphate added. The excess of ammonia shall be removed by boiling and the precipitate filtered on a paper and washed with hot water. All filtrates and washings shall be cooled and bulked to 200 millilitres.

If in the above operation no precipitate forms on the addition of the ammonia and ammonium persulphate no filtration is necessary. The excess ammonia shall be removed by boiling, 2 grams of ammonium chloride added and the solution cooled and bulked to 200 millilitres. If the amount of the precipitate is small the re-precipitation shall be omitted but two grams of ammonium chloride shall be added to the filtrate and washings before cooling and bulking to 200 millilitres.

20 millilitres of the solution shall be diluted with 30 millilitres of water and 3 millilitres of 8 per cent. ammonia added. 0·2 gram of the solid Solochrome Black and sodium chloride indicator, prepared as described below, shall be added and the resulting solution titrated with one twentieth normal disodium ethylenediamine tetracetate solution, prepared as described below, to a blue end point.

A further 20 millilitres of the solution shall be diluted with 30 millilitres of water and 7 millilitres of normal sodium hydroxide solution added. 0·2 gram of the solid Murexide and sodium chloride indicator,

* British Standard for Test Sieves, No. 410/1943.

prepared as described below, shall be added and the resulting solution titrated with one twentieth normal disodium ethylenediamine tetracetate solution to a violet end point.

The difference between the titrations shall be regarded as an index of the magnesium content of the solution from which the magnesium content of the sample shall be calculated. 1 millilitre of disodium ethylenediamine tetracetate is equivalent to 0·608 milligram of magnesium (Mg).

*Preparation of Solochrome Black and sodium chloride indicator*

0·2 gram of Solochrome Black and 50 grams of pure sodium chloride shall be uniformly mixed and ground to pass a No. 52 B.S.S. Sieve.

*Preparation of Murexide and sodium chloride indicator*

0·2 gram of Murexide and 100 grams of pure sodium chloride shall be uniformly mixed and ground to pass a No. 52 B.S.S. Sieve. This mixture should be protected from light.

*Preparation and Standardisation of one twentieth normal disodium ethylenediamine tetracetate solution*

Ten grams of disodium ethylenediamine tetracetate dihydrate shall be dissolved in 800 millilitres of water containing 55 millilitres of normal sodium hydroxide solution. This solution must have been recently prepared.

20 millilitres of standard calcium solution, prepared as described below, shall be diluted with 30 millilitres of water. One millilitre of buffer solution, prepared as described below, and 0·2 gram of the Solochrome Black and sodium chloride indicator shall be added and the resulting solution titrated with the sodium ethylenediamine tetracetate solution to a blue end point. The solution of disodium ethylenediamine tetracetate shall be adjusted by dilution so that one millilitre is equivalent to 2·4 milligrams of calcium carbonate ($CaCO_3$).

*Preparation of Standard Calcium solution*

1·25 grams of pure calcium carbonate shall be dissolved in 60 millilitres of 0·5 normal hydrochloric acid and diluted to 500 millilitres.

*Preparation of Buffer solution*

6·75 grams of ammonium chloride, 57 millilitres of concentrated ammonia, 0·062 gram of magnesium sulphate ($MgSO_4 7H_2O$) and 0·093 gram of disodium ethylenediamine tetracetate dihydrate shall be dissolved and diluted to 100 millilitres with water.

(9) *The prescribed sieve and method of sieving*

(*a*) The sieve to be used for the purpose of the statement as to fineness of grinding of basic slag, phosphate rock, ground limestone and ground magnesian limestone, and for the purpose of the implied definitions of ground limestone and ground magnesian limestone in Part I of the Fourth Schedule to the Act shall be the British Standard Test Sieve, mesh number 100*.

(*b*) The sieving of a sample shall be carried out as follows:—

The sample shall be mixed and an adequate quantity shall be dried at 100°C. and 20 grams thereof shall then be transferred to the sieve with the lower receiver attached. The sieve shall then be shaken for 10 minutes with occasional tapping of the sides of the sieve. At the

* British Standard for Test Sieves, No. 410/1943.

end of 10 minutes, the material which has passed through into the lower box shall be carefully brushed out into a suitable vessel and weighed. The receiver shall be replaced and the shaking repeated for another 10 minutes, when the sifted matter shall again be removed, mixed with the first portion and weighed. The process shall be repeated until not more than 0·2 per cent. is sifted during 10 minutes.

Soft lumps which can be caused to crumble by application of the fibres of a bristle brush shall be broken down after each shaking period, but in such manner that the hard parts of the brush do not come into contact with the sieve. The brush shall not be used in any way to brush particles through the sieve.

*Methods of Analysis of Feeding Stuffs*

**15.** The method in which an analysis of a feeding stuff shall be made for the purposes of the Act is as follows:—

(1) *Preparation of the sample*

(*a*) If the sample is in a fine condition and passes through a sieve having apertures about one millimetre square, it shall be thoroughly mixed and a portion not less than 100 grams in weight shall be placed in a stoppered bottle. From this portion the quantities for analysis shall be taken.

(*b*) If the sample does not wholly pass through a sieve having apertures about one millimetre square and wholly passes through a sieve having apertures from two to three millimetres square, it shall be thoroughly mixed and a portion for the determination of the moisture shall be at once taken.

(*c*) If the sample is in a coarse condition, as, for example, pieces of broken cake, it shall be carefully pulverised until the whole passes through a sieve having apertures from two to three millimetres square. It shall then be thoroughly mixed and a portion for the determination of the moisture shall be at once taken.

(*d*) From the mixed sample as in (*b*) above, or from the coarsely crushed sample as in (*c*) above, a portion not less than 100 grams in weight shall be taken and further powdered and passed through a sieve having apertures about one millimetre square. The portion of the sample so prepared shall be placed in a stoppered bottle and from it the quantities for analysis shall be taken.

(*e*) If the original sample is appreciably moist, or if for any reason the operations of pulverisation and mixing are likely to result in loss or gain of moisture, the moisture in the bottled portion shall be determined as well as in the portion taken for that purpose under (*b*) or (*c*) above in order that the results of the analysis may be corrected to correspond with the sample in its original condition as regards moisture.

(*f*) Materials which cannot be conveniently pulverised or passed through a sieve shall be thoroughly mixed by the most suitable means.

(2) *Determination of moisture*

A weighed quantity of the sample shall be dried at 100°C. and then re-weighed.

(3) *Determination of oil*

A weighed quantity of the sample shall be placed in an extraction thimble, which shall then be placed in an extraction apparatus and extracted with petroleum spirit b.pt.40-60°C. At the end of three to four hours the thimble shall be removed from the apparatus, dried and its

contents finely ground, preferably with sand, in a small mortar previously rinsed with petroleum spirit. The substance shall then be returned to the thimble, the mortar being washed out with petroleum spirit, and the extraction continued for another hour. The extract should be free from suspended matter. After evaporation of the solvent, the oil shall be dried at 100°C.

(4) *Determination of protein*

The percentage of protein shall be ascertained by multiplying the percentage of nitrogen, other than nitrogen present as ammoniacal or nitric nitrogen, by 6·25. The presence of nitrogen in these latter forms shall be tested for and the quantity so present, if any, shall be determined and deducted from the total nitrogen. (See methods for determination of ammoniacal nitrogen and nitric nitrogen in presence of organic matter under Methods of Analysis of Fertilisers, paragraph (3).)

The determination of total nitrogen in the absence of nitrates shall be as follows:—

A weighed portion of the sample shall be transferred to a Kjeldahl digestion flask, 25 millilitres of concentrated sulphuric acid (or more if necessary) shall be added and the flask gently heated until frothing ceases. Ten grams of potassium or sodium sulphate (anhydrous) shall then be added and the flask further heated until the colour of the clear liquid ceases to diminish. The heating shall be continued for an hour thereafter to ensure complete oxidation of the organic matter. The operation shall be accelerated by the addition of a small amount of a mercury compound or a globule of mercury to the liquid in the digestion flask.

The quantity of ammonia present in the liquid shall be determined by distillation into standard acid after liberation with alkali, and with the addition also of sodium or potassium sulphide solution.

The materials used shall be examined as to their freedom from nitrogen by means of a control experiment carried out under similar conditions with the same quantities of the re-agents which have been employed in the actual analysis, one gram of pure sugar being used in place of the weighed portion of the sample. The quantity of standard acid found to have been neutralised in this control experiment shall be deducted from the total quantity of acid neutralised in the distillation of the sample.

If nitrates are present, the digestion and subsequent distillation must be carried out as in Methods of Analysis of Fertilisers, paragraph (3) (*b*).

(5) *Determination of phosphoric acid*

A weighed portion of the sample shall be heated with concentrated sulphuric acid until all organic matter is destroyed and the phosphoric acid is completely in solution. After dilution, the solution shall be filtered, the insoluble matter thoroughly washed and the filtrate made up to a definite bulk. The phosphoric acid shall be determined by the method described in Methods of Analysis of Fertilisers, paragraph (4) (*e*), in an aliquot part of the solution, which shall first be nearly neutralised and then acidified with nitric acid.

(6) *Determination of fibre*

Two or three grams, accurately weighed, shall be extracted with petroleum spirit b.pt. 40–60°C. in an extraction apparatus, or at least three times by stirring, settling and decantation, and the dry residue transferred to a conical 1,000 millilitre flask. The material must not be further ground during extraction. A volume of 200 millilitres of a solution containing

1·25 grams of sulphuric acid ($H_2SO_4$) per 100 millilitres measured at ordinary temperature and brought to boiling point, shall be added to the flask and heated. The contents of the flask must come to boiling within 1 minute and the boiling throughout must be gentle and continuous for exactly 30 minutes, the original volume being maintained. The flask shall be rotated every few minutes in order to mix the contents and remove particles from the sides. At the end of 30 minutes the flask shall be removed and the contents poured at once into the shallow layer of hot water remaining in a funnel fitted with a pump-plate or alternatively into the similar layer remaining in a Buchner funnel. The funnel shall be prepared by cutting a piece of cotton cloth or filter paper to cover the holes, so as to serve as a support for a disc of ordinary filter paper; boiling water shall be poured into the funnel and allowed to remain until the funnel is hot, whereupon suction is applied. The experiment shall be discarded if the time of filtration of the bulk of the 200 millilitres exceeds 10 minutes. The residue shall be washed with boiling water until the washings are free from acid. The residue shall then be washed from the filter paper back into the flask with a volume of 200 millilitres of a solution of sodium hydroxide, containing 1·25 grams of sodium hydroxide (NaOH) per 100 millilitres free or nearly free from sodium carbonate, measured at ordinary temperature, and brought to boiling point. The contents of the flask shall be boiled for exactly 30 minutes, the precautions given for the treatment with acid being observed. At the end of 30 minutes the flask shall be removed and its contents immediately filtered through an ordinary filter paper. The residue collected on the filter paper shall be washed with boiling water, then with a solution of 1 per cent. hydrochloric acid and again with boiling water until free from acid. The residue shall then be washed twice with 95 per cent. alcohol, and three times with ether. The residue shall then be transferred to a dried weighed ashless filter paper, dried at about 100°C in an oven and weighed in its weighing bottle until constant in weight. The ash of the paper and contents shall be determined by incineration at a dull red heat. The weight of ash shall be subtracted from the increase of weight found on the paper and the difference shall be reported as fibre.

(7) *Determination of sugar*

(*a*) *When the substance is in solid form.*—About 10 grams of the sample or a larger quantity if the percentage of sugar is low, accurately weighed, shall be ground up with water in a mortar and transferred to a 250 millilitre flask, using in all about 200 millilitres of cold water. The flask shall be shaken at intervals during 30 minutes. If it is necessary to use a clearing agent zinc ferro-cyanide shall be employed. The liquid in the flask shall then be made up to 250 millilitres and filtered. The sugar shall be determined in 50 millilitres of the filtrate by the method described in paragraph (7) (*c*).

(*b*) *When the substance is in liquid form.*—The prepared portion of the sample shall be thoroughly mixed immediately before weighing out the quantity for sugar determination. About 10 grams of the sample, accurately weighed, shall be washed into a 250 millilitre flask with about 200 millilitres of water and the solution cleared, if necessary, with zinc ferro-cyanide. The liquid in the flask shall then be made up to 250 millilitres and filtered. The sugar shall be determined in 25 millilitres of the filtrate by the method described in paragraph (7) (*c*).

(*c*) The aliquot part of the filtrate obtained as described in paragraph (7) (*a*) or (*b*) shall be measured into a 100 millilitre flask, diluted to 75 millilitres with water and the sugar inverted as follows:—10 millilitres

of 6·34 N hydrochloric acid shall be added slowly while rotating the flask. The flask shall be placed in a waterbath adjusted to 70°C and when the temperature of the solution reaches 67°C (which should occupy 2½ to 3 minutes) the heating shall be continued for a further 5 minutes, by which time the temperature should have reached approximately 69°C. It shall then be cooled at once, just neutralised to litmus paper, made up to 100 millilitres and filtered.

The total reducing sugar in the filtrate shall then be determined, the total copper-reducing power being calculated in terms of cane sugar ($C_{12}H_{22}O_{11}$).

(8) *Determination of salt*

Five grams of the sample shall be mixed with 1 gram of pure sodium carbonate and thoroughly wetted with a little water. The mixture shall be dried and heated at a temperature not exceeding 500°C. in order to destroy organic matter. The residue shall be extracted with water, the volume made up to 250 millilitres and the solution filtered. The chlorine shall be determined in an aliquot portion of the filtrate and the result expressed in terms of NaCl.

(9) *Determination of sand, silicious matter or other insoluble mineral matter*

(*a*) A weighed quantity of the sample, from 2 to 5 grams, shall be incinerated and the weight of the ash shall be taken.

(*b*) The ash shall be moistened with hydrochloric acid and evaporated to dryness and shall then be repeatedly extracted with hot dilute hydrochloric acid (one part of concentrated hydrochloric acid to four parts of water). The solution shall be filtered and the insoluble matter washed, incinerated and weighed. The quantity obtained shall be taken as sand and silicious matter.

(*c*) Where the quantity of sand and silica-free ash is so high as to raise a presumption that mineral material has been added, the nature and quantity of such added substances shall, if possible, be determined.

*Qualifications to be possessed by Agricultural Analysts and Deputy Agricultural Analysts*

**16.** Every person appointed as agricultural analyst or deputy agricultural analyst shall furnish proof to the satisfaction of the Minister or the Secretary of State that he has competent knowledge of (*a*) chemistry, and (*b*) chemical analysis and microscopy as applied to fertilisers and feeding stuffs. Such proof shall in every case comprise documentary evidence that such person holds a certificate or diploma attesting his possession of the requisite knowledge and given by a recognised competent body. All such documentary evidence shall be submitted to the local authority making the appointment and shall be forwarded to the Minister or the Secretary of State by the local authority when applying for approval of the appointment. The Minister or the Secretary of State shall call for further evidence if required in any particular case.

*Forms of Certificate of Agricultural Analyst*

**17.** The certificate of an agricultural analyst shall be in such one of the forms A and B set forth in the Schedule hereto as may be applicable to the case.

*Variations of the Schedules*

**18.** The Schedules to the Act are hereby varied by substituting for the same the following Schedules:—

FIRST SCHEDULE Sections 1, 2, 3, 4, 5, 8, 10, 12.

ARTICLES TO WHICH ALL THE PROVISIONS OF THE ACT ARE APPLICABLE

PART I

FERTILISERS

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Ammonium nitrate and mixtures of ammonium nitrate with any article not mentioned elsewhere in this Schedule. | Amount of nitrogen. |
| A product, not otherwise mentioned in this Part of this Schedule, obtained by mixing one or more of the articles mentioned in this Part of this Schedule with any other such article or with any other substance or substances. | Amounts, if any, of nitrogen, potash, phosphoric acid soluble in water, and phosphoric acid insoluble in water respectively. |
| Basic slag ... ... ... ... ... | Total amount of phosphoric acid. Amount of phosphoric acid soluble in citric acid. Amount of the article that will pass through a prescribed sieve. |
| Bone meal, or other product not otherwise mentioned in this Part of this Schedule, obtained by grinding or otherwise treating bone, used for fertilising purposes. | Amounts of nitrogen and phosphoric acid respectively. |
| Calcium cyanamide ... ... ... | Amount of nitrogen. |
| Concentrated superphosphate ... ... | Amount of phosphoric acid soluble in water. |
| Dicalcium phosphate ... ... ... | Amount of phosphoric acid soluble in citric acid. |
| Dissolved or vitriolised bone ... ... | Amounts of nitrogen, phosphoric acid soluble in water, and phosphoric acid insoluble in water respectively. |
| Dried blood for fertilising purposes ... | Amount of nitrogen. |
| Fish residues or other product obtained by drying and grinding or otherwise treating fish or fish waste, used for fertilising purposes. | Amounts of nitrogen and phosphoric acid respectively. |
| Guano, including Peruvian and other raw guanos, but excluding poultry manure. | Amounts of nitrogen, phosphoric acid and potash respectively. |
| Hoofs ... ... ... ... ... | Amount of nitrogen. |
| Hoofs and horns ... ... ... ... | Amount of nitrogen. |
| Horns ... ... ... ... ... | Amount of nitrogen. |
| Meat and bone residues, or any product not specifically mentioned elsewhere in this Part of this Schedule, obtained by drying and grinding or otherwise treating bone, flesh, flesh fibre (including whale meat) and other slaughterhouse residues, used for fertilising purposes. | Amounts of nitrogen and phosphoric acid respectively. |
| Nitrate of lime ... ... ... ... | Amount of nitrogen. |
| Nitrate of potash ... ... ... ... | Amounts of nitrogen and potash respectively. |
| Nitrate of soda ... ... ... ... | Amount of nitrogen. |

FIRST SCHEDULE—*contd.*

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Oil seed fertilisers, including castor meal, rape meal, or any residue other than mowrah meal, which is obtained by the removal of oil from seeds. | Amount of nitrogen. |
| Phosphate rock, ground or otherwise ... | Amount of phosphoric acid. Amount that will pass through a prescribed sieve. |
| Potassic nitrate of soda ... ... ... | Amounts of nitrogen and potash respectively. |
| Potassium salts used as fertilisers, including kainit, sylvinite, potash manure salt, muriate of potash, sulphate of potash and sulphate of potash-magnesia. | Amount of potash. |
| Precipitated bone phosphate; dicalcium bone phosphate. | Amount of phosphoric acid soluble in citric acid. |
| Sulphate of ammonia ... ... ... | Amount of nitrogen. Amount of free acid if in excess of 0·025 per cent. |
| Superphosphate ... ... ... ... | Amount of phosphoric acid soluble in water. |
| Triple superphosphate ... ... ... | Amount of phosphoric acid soluble in water. |

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The provisions of this Part of this Schedule shall apply to any article described therein under whatever name it may be sold or offered for sale and notwithstanding that it contains a substance not mentioned in this Part of this Schedule.

The amount in each case is to be stated as a definite percentage of the weight of the article, and not as a range of percentages.

Nitrogen is to be stated in terms of nitrogen.

Phosphoric acid, soluble phosphoric acid and insoluble phosphoric acid are to be stated in terms of phosphoric anhydride ($P_2O_5$).

Potash is to be stated in terms of potassium oxide ($K_2O$).

Free acid is to be stated in terms of sulphuric acid ($H_2SO_4$).

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## PART II

### FEEDING STUFFS

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Barley meal ... ... ... ... ... | None. |
| Barley meal, Grade II ... ... ... | None. |
| Bean meal ... ... ... ... ... | None. |
| Coconut or copra cake or meal ... ... | Amounts of oil and protein respectively. |
| Compound cakes or meals, that is to say, any cakes or meals (other than molasses feeds and dried molassed beet pulp) consisting of a mixture of one or more of the articles mentioned in this Part of this Schedule or in Part II of the Second Schedule with any other such article or with any other substance or substances. | Amounts, if any, of oil, protein and fibre respectively. |
| Cotton cakes or meals, not decorticated ... | Amounts of oil and protein respectively. |
| Cotton cakes or meals from decorticated or partly decorticated cotton seed. | Amounts of oil, protein and fibre respectively. |

FIRST SCHEDULE—*contd.*

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Dari or durra meal ... ... ... | None. |
| Dried plain beet pulp ... ... ... | Amount of fibre. |
| Dried molassed beet pulp ... ... ... | Amounts of sugar and fibre respectively. |
| Feeding bone flour... ... ... ... | Amounts of phosphoric acid and protein respectively. |
| Feeding bone meal, ground bone, or any other bone product for feeding purposes. | Amounts of phosphoric acid and protein respectively. |
| Feeding meat and bone meal, or any other product of meat (including whale meat) and bone for feeding purposes. | Amounts of oil, protein and phosphoric acid respectively. |
| Feeding meat meal, or any other product of meat (including whale meat) for feeding purposes. | Amounts of oil, protein and phosphoric acid respectively. |
| Fish meal, white fish meal, or other product obtained by drying and grinding or otherwise treating fish or fish waste, | Amounts of oil, protein, phosphoric acid and salt respectively. |
| Ground oats ... ... ... ... | None. |
| Linseed cakes and the meals of such cakes; extracted linseed meal. | Amounts of oil and protein respectively. |
| Linseed meal ... ... ... ... | Amount of oil. |
| Locust bean meal ... ... ... ... | None. |
| Maize by-products not otherwise specifically mentioned in this Schedule. | Amounts of oil, protein and fibre respectively. |
| Maize, flaked ... ... ... ... | Amounts of oil and protein respectively. |
| Maize germ cake or meal ... ... ... | Amounts of oil and protein respectively. |
| Maize gluten feed ... ... ... ... | Amounts of oil and protein respectively. |
| Maize meal; Indian meal... ... ... | None. |
| Molasses feeds (other than dried molassed beet pulp) including any feeding stuffs, composed of treacle or molasses with an absorbent, containing not less than 10 per cent. of sugar. | Amounts of sugar and fibre respectively. |
| Oatmeal by-products ... ... ... | Amount of fibre. |
| Oil cakes or meals not otherwise specifically mentioned in this Schedule which are the product of any one undecorticated substance or seed from which oil has been removed. | Amounts of oil and protein respectively. |
| Oil cakes or meals not otherwise specifically mentioned in this Schedule which are the product of any one decorticated or partly decorticated substance or seed from which oil has been removed. | Amounts of oil, protein and fibre respectively. |
| Palm kernel cake or meal ... ... ... | Amounts of oil and protein respectively. |
| Pea meal ... ... ... ... ... | None. |
| Rape cake or meal... ... ... ... | Amounts of oil and protein respectively. |
| Rice bran or rice meal, or the by-product produced in milling shelled rice. | Amounts of oil, protein and fibre respectively, |
| Soya cake or meal ... ... ... ... | Amounts of oil and protein respectively. |

FIRST SCHEDULE—*contd.*

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Treacle or molasses ... ... ... | Amount of sugar. |
| Wheat meal... ... ... ... ... | None. |
| Wheat offals or millers' offals ... ... | Amount of fibre. |

The provisions of this Part of this Schedule shall apply to any article described therein under whatever name it may be sold or offered for sale and notwithstanding that it contains a substance not mentioned in this Part of this Schedule.

The amount, in each case, is to be stated as a definite percentage of the weight of the article, and not as a range of percentages.

Phosphoric acid is to be stated in terms of phosphoric anhydride ($P_2O_5$).

The amount of protein means the amount of nitrogen, other than ammoniacal or nitric nitrogen, if present, multiplied by 6·25.

## SECOND SCHEDULE

Sections 1, 2, 3, 12.

ARTICLES TO WHICH SOME ONLY OF THE PROVISIONS OF THE ACT ARE APPLICABLE

### PART I

FERTILISERS

| *Article* | *Particulars to be contained in Statutory Statement* |
|---|---|
| Burnt or quick lime, ground or otherwise | Neutralising value. |
| Burnt magnesian lime, ground or otherwise. | Neutralising value. |
| Calcium hydroxide; hydrated lime; slaked lime; slaked magnesian lime. | Neutralising value. |
| Chalk ... ... ... ... ... | None. |
| Chalk, ground ... ... ... ... | Neutralising value. |
| Chalk, screened ... ... ... ... | Neutralising value. Amount that will pass through a declared British Standard Test Sieve. |
| Limestone, ground; magnesian limestone, ground. | Neutralising value. Amount that will pass through a prescribed sieve. |
| Mixed lime ... ... ... ... ... | Neutralising value. |
| Shoddy ... ... ... ... ... | None. |

The provisions of this Part of this Schedule shall apply to any article described therein under whatever name it may be sold or offered for sale, and notwithstanding that it contains a substance not mentioned in this Part of this Schedule.

The amount, in each case, is to be stated as a definite percentage of the weight of the article, and not as a range of percentages.

Neutralising value is to be expressed in terms of calcium oxide (CaO).

SECOND SCHEDULE—*contd.*

PART II

FEEDING STUFFS

| *Article* | | *Particulars to be contained in Statutory Statement* |
|---|---|---|
| Alfalfa (lucerne) meal ... ... ... | | Amounts of protein and fibre respectively. |
| Clover meal... ... ... ... ... | | Amounts of protein and fibre respectively. |
| Dried brewery and distillery grains ... | | Amounts of oil and protein respectively. |
| Dried grass;<br>Dried grass (maintenance quality);<br>Dried green fodder crops;<br>Dried green roughage | as defined in the Fourth Schedule | Amount of protein. |
| Dried yeast ... ... ... ... ... | | Amount of protein. |
| Feeding dried blood ... ... ... | | Amount of protein. |
| Malt culms ... ... ... ... ... | | Amounts of protein and fibre respectively. |

The provisions of this Part of this Schedule shall apply to any article described therein under whatever name it may be sold or offered for sale and notwithstanding that it contains a substance not mentioned in this Part of this Schedule.

The amount, in each case, is to be stated as a definite percentage of the weight of the article, and not as a range of percentages.

The amount of protein means the amount of nitrogen, other than ammoniacal or nitric nitrogen, if present, multiplied by 6·25.

## THIRD SCHEDULE

Sections 1, 2, 20.

INGREDIENTS IN FEEDING STUFFS THE PRESENCE OF WHICH MUST BE DECLARED

(*a*) Husks, chaff, glumes, shudes, hulls, nutshells or skins of nuts, from any source, whether ground or unground, treated or untreated, when used as separate ingredients or artificial mixtures in the manufacture of feeding stuffs.

Where the kernels naturally associated in seeds with one or other of the above materials are present in a feeding stuff along with the materials with which they are so associated, regard shall be had to the proportion of the above materials that might reasonably be expected to accompany such kernels, when the seed from which they are derived is in its natural condition, provided that feeding in this condition is regarded as a common practice in the feeding of livestock.

(*b*) Peat, peat moss, spent hops or sugar cane pith, treated or untreated, ground or otherwise.

(*c*) Wheat or rye straw, ground or otherwise.

(*d*) Sawdust or any other form of wood, treated or untreated.

## FOURTH SCHEDULE Section 2

DEFINITIONS IMPLIED ON THE SALE OF ARTICLES UNDER CERTAIN NAMES

### PART I

FERTILISERS

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Ammonium nitrate ... ... | Ammonium nitrate for fertilising purposes. |
| Basic slag ... ... ... | A by-product, containing phosphorus, obtained in the manufacture of steel and to which no addition has been made at the time of leaving or after it has left the furnace. |
| Bone meal ... ... ... | Commercially pure bone, raw or degreased, which has been ground or crushed, and which contains not less than 3·5 per cent. nitrogen and not less than 20 per cent. phosphoric acid. |
| Bone meal, Grade II ... ... | Commercially pure bone, raw or degreased, which has been ground or crushed, and which contains less than 3·5 per cent. nitrogen or less than 20 per cent. phosphoric acid. |
| Burnt magnesian lime, ground or otherwise. | Commercial calcium and magnesium oxides containing more than 5·5 per cent. of magnesium (Mg.). |
| Burnt or quick lime, ground or otherwise. | Commercial calcium oxide containing not more than 5·5 per cent. of magnesium (Mg.). |
| Calcium cyanamide ... ... | Commercial calcium cyanamide. |
| Calcium hydroxide; hydrated lime; slaked lime. | The product obtained by slaking burnt lime. |
| Castor meal ... ... ... | The residue which is obtained by the removal of oil from commercially pure castor seed. |
| Chalk ... ... ... | Cretaceous limestone. |
| Chalk, ground... ... ... | Cretaceous limestone which has been reduced in size so that it will pass through a sieve of ¼ in. square apertures. |
| Chalk, screened ... ... | Cretaceous limestone that will pass through a sieve having apertures not exceeding 3 in. square. |
| Compound fertiliser; mixed fertiliser; fertiliser mixture. | A product, not otherwise mentioned in this Part of this Schedule, containing two or three of the elements nitrogen, phosphorus and potassium, and obtained by mixing one or more of the articles mentioned in Part I of the First Schedule with any other such article or with any other substance or substances. |
| Concentrated superphosphate | Phosphate rock which has been treated with sulphuric acid and phosphoric acid. |
| Dicalcium phosphate ... | Dicalcium phosphate for fertilising purposes. |
| Dissolved or vitriolised bone... | Commercially pure bone which has been treated with sulphuric acid. |
| Dried blood ... ... ... | Blood which has been dried, to which no other matter has been added. |
| Fish guano; fish manure ... | A product obtained by drying and grinding or otherwise treating fish or fish waste, to which no other matter has been added. |
| Hoofs ... ... ... ... | The product obtained by crushing or grinding hoof, to which no other matter has been added. |

FOURTH SCHEDULE—*contd.*

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Hoofs and horns ... ... | A mixture of hoof and horn, crushed or ground, to which no other matter has been added. |
| Horns ... ... ... ... | The product obtained by crushing or grinding horn, to which no other matter has been added. |
| Limestone, ground ... ... | Sedimentary rock consisting largely of calcium carbonate but containing not more than 3 per cent. of magnesium (Mg.), which has been reduced in size so that 100 per cent. will pass through a sieve of 3/16 in. square apertures, not less than 95 per cent. will pass through a sieve of $\frac{1}{8}$ in. square apertures and not less than 40 per cent. will pass through a prescribed sieve. |
| Magnesian limestone, ground | Sedimentary rock consisting largely of the carbonates of calcium and magnesium but containing more than 3 per cent. of magnesium (Mg.), which has been reduced in size so that 100 per cent. will pass through a sieve of 3/16 in. square apertures, not less than 95 per cent. will pass through a sieve of $\frac{1}{8}$ in. square apertures and not less than 40 per cent. will pass through a prescribed sieve. |
| Meat and bone meal; meat meal; carcase meal; meat and bone tankage. | The product of drying and grinding or otherwise treating bone, flesh, flesh fibre (including whale meat) and other slaughterhouse residues, to which no other matter has been added. |
| Mixed lime ... ... ... | A product, not being a by-product or a mixture of by-products from manufacturing or other processes, obtained by mixing two or more of the forms of liming materials defined in this Schedule. |
| Muriate of potash ... ... | Potassium chloride for fertilising purposes. |
| Nitrate of lime ... ... | Calcium nitrate for fertilising purposes. |
| Nitrate of potash ... ... | Potassium nitrate for fertilising purposes. |
| Nitrate of soda ... ... | Sodium nitrate for fertilising purposes. |
| Phosphate rock, ground or otherwise. | The substance obtained from mineral calcium phosphate deposits, to which no other matter has been added. |
| Potassic nitrate of soda ... | A mixture of sodium nitrate and potassium nitrate for fertilising purposes. |
| Rape meal ... ... ... | The residue which is obtained by the removal of oil from commercially pure rape seed. |
| Precipitated bone phosphate; dicalcium bone phosphate. | An insoluble calcium phosphate prepared by treating commercially pure bone with acid and precipitation of phosphate from the solution. |
| Raw guano ... ... ... | The excrement and remains of any birds except poultry, containing both nitrogen and phosphorus, prepared for use by screening where necessary, but to which no addition has been made. |
| Shoddy manure; wool waste; woolcombings; woolmanure; flock dust. | Waste of wool, or of wool mixed with fibrous materials such as are associated with wool in the textile industries, including cotton and similar non-wool materials, to which no other matter has been added. |
| Slaked magnesian lime ... | The product obtained by slaking burnt magnesian lime. |

FOURTH SCHEDULE—*contd.*

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Steamed bone flour; steamed bone meal. | Commercially pure bone from which nitrogen has been removed by steam. |
| Sulphate of ammonia ... | Ammonium sulphate for fertilising purposes. |
| Sulphate of potash ... ... | Potassium sulphate for fertilising purposes. |
| Superphosphate ... ... | Phosphate rock which has been treated with sulphuric acid. |
| Triple superphosphate ... | Phosphate rock which has been treated with phosphoric acid only. |

## PART II

### FEEDING STUFFS

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Alfalfa (lucerne) meal ... | Alfalfa (lucerne), as grown, dried and ground, to which no other matter has been added. |
| Barley meal ... ... ... | The meal obtained by grinding barley, as grown, which shall be the whole grain together with only such other substances as may reasonably be expected to have become associated with the grain in the field and which contains not less than 96 per cent. pure barley. |
| Barley meal, Grade II ... | The meal, other than barley meal as defined above, obtained by grinding barley, as grown, which shall be the whole grain together with only such other substances as may reasonably be expected to have become associated with the grain in the field and which contains not less than 90 per cent. pure barley. |
| Bean meal ... ... ... | The meal obtained by grinding commercially pure beans of the species (1) Vicia Faba (synonym Faba vulgaris) or any of its varieties, commonly known as "horse bean" "field bean" or "broad bean"; or (2) Phaseolus vulgaris, the "true haricot bean" or any of its varieties, white or coloured. |
| Clover meal ... ... .. | Whole clover, as grown, dried and ground, to which no other matter has been added. |
| Compound cakes or meals ... | Cakes or meals (other than molasses feeds and dried molassed beet pulp) consisting of a mixture of one or more of the articles mentioned in Part II of the First Schedule or in Part II of the Second Schedule with any other such article or with any other substance or substances. |
| Cotton cakes or meals not decorticated. | The residue resulting from the removal of oil from commercially pure cotton seed, not decorticated. |
| Cotton cakes or meals from decorticated or partly decorticated cotton seed. | The residue resulting from the removal of oil from commercially pure cotton seed from which the cortex, in whole or in part, has been removed. |
| Dari meal; durra meal ... | The meal obtained by grinding commercially pure dari or durra seed. |

FOURTH SCHEDULE.—*contd.*

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Dried brewery grains ... | The article produced by drying the residue of malted and unmalted cereals used in brewing, to which no other matter has been added. |
| Dried distillery grains ... | The article produced by drying the residues from distillery mash-tuns, to which no other matter has been added. |
| Dried grass ... ... ... | Any product which<br>(*a*) is obtained by artificially drying any of the following:—grass, clover, lucerne, sainfoin, green cereals, or any mixture consisting of any of them, and<br>(*b*) is otherwise as grown (that is to say including any growths harvested therewith but with no other substance added thereto), and contains not less than 13 per cent. protein calculated on the assumption that it contains 10 per cent. moisture. |
| Dried grass (maintenance quality). | Dried grass as defined in this Schedule except that it may contain less than 13 per cent. but not less than 10 per cent. protein calculated on the assumption that it contains 10 per cent. moisture. |
| Dried green fodder crops ... | Any product which<br>(*a*) is obtained by artificially drying any green crop or crops suitable for use as dried fodder for cattle or poultry, and<br>(*b*) is otherwise as grown (that is to say, including any growths harvested therewith but with no other substance added thereto), and contains not less than 10 per cent. protein calculated on the assumption that it contains 10 per cent. moisture,<br>but is not dried grass or dried grass (maintenance quality). |
| Dried green roughage ... | Any product which contains less than 10 per cent. protein calculated on the assumption that it contains 10 per cent. moisture, but which in all other respects complies with the definition of dried grass or dried green fodder crops. |
| Dried plain beet pulp ... | The article produced by drying the sugar beet residue produced in the manufacture of sugar from sugar beet, with or without the addition of molasses, to give less than 10 per cent. of sugar. |
| Dried molassed beet pulp ... | The article produced by drying the sugar beet residue produced in the manufacture of sugar from sugar beet, with the addition of molasses, to give 10 per cent. or more of sugar. |
| Dried yeast ... ... ... | An article produced by drying yeast or yeast residues, to which no other matter has been added. |
| Extracted linseed meal ... | The residue resulting from the removal of oil from commercially pure linseed by means of a solvent. |
| Feeding bone flour ... ... | The product obtained by grinding commercially pure steamed bone. |

FOURTH SCHEDULE.—*contd.*

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Feeding bone meal; ground bone. | Commercially pure bone, raw or degreased, which has been ground or crushed. |
| Feeding dried blood ... ... | Blood which has been dried, to which no other matter has been added. |
| Feeding meat and bone meal... | The product, containing not less than 40 per cent. of protein and not more than 4 per cent. of salt, obtained by drying and grinding animal carcases or portions thereof (excluding hoof and horn) and bone, to which no other matter has been added, but which may have been preliminarily treated for the removal of fat. |
| Feeding meat meal ... ... | The product, containing not less than 55 per cent. of protein and not more than 4 per cent. of salt, obtained by drying and grinding animal carcases or portions thereof (excluding hoof and horn) to which no other matter has been added but which may have been preliminarily treated for the removal of fat. |
| Fish meal; fish residue meal... | A product obtained by drying and grinding or otherwise treating fish or waste of fish, to which no other matter has been added. |
| Flaked maize ... ... ... | The product obtained by cooking and flaking commercially pure maize or Indian corn, either as grown or from which the germ, in whole or in part, has been removed. |
| Ground oats ... ... ... | The meal obtained by grinding commercially pure oats, as grown. |
| Linseed cakes or the meals of such cakes. | The residue resulting from the removal of oil from commercially pure linseed. |
| Linseed meal ... ... ... | The meal obtained by grinding or crushing commercially pure linseed. |
| Locust bean meal ... ... | The meal obtained by grinding or crushing commercially pure locust beans. |
| Maize germ cake or meal ... | A meal or cake resulting from the grinding of maize germs or from maize germs from which the oil has been removed in whole or in part. |
| Maize gluten feed ... ... | A by-product resulting from the removal of starch and germ from maize, to which no other matter has been added. |
| Maize meal; Indian meal ... | The meal obtained by grinding commercially pure maize or Indian corn, as grown. |
| Malt culms ... ... ... | The rootlets and shoots arising from the screening of malt, to which no other matter has been added. |
| Molasses feeds ... ... | Any mixture (other than dried molassed beet pulp) containing not less than 10 per cent. of sugar, of an absorbent material and treacle or molasses. |
| Nut cakes or meals, including coconut, copra, palm kernel and ground nut cakes and meals. | The residue resulting from the removal of oil from commercially pure nut kernels. |
| Oatfeed ... ... ... | The by-product of oatmeal milling consisting of hulls, floury materials, mealy matter, scree dust, all finely ground, and containing not more than 27 per cent. of fibre. |

FOURTH SCHEDULE—*contd.*

| *Name under which Article sold* | *Implied Definition* |
|---|---|
| Pea meal ... ... ... | The meal obtaining by grinding commercially pure peas, as grown, of varieties of " Pisum sativum " or " Pisum arvense ". |
| Rape cake or meal ... ... | The residue resulting from the removal of oil from commercially pure rape seed. |
| Rice bran; rice meal ... | The by-product produced in milling shelled rice, to which no other matter has been added. |
| Soya cake or meal ... ... | The residue resulting from the removal of oil from commercially pure soya beans. |
| Sugar beet treacle; sugar beet molasses. | A concentrated syrup product obtained in the manufacture of sugar from sugar beet, to which no other matter has been added. |
| Sugar cane treacle; sugar cane molasses. | A concentrated syrup product obtained in the manufacture of sugar from sugar cane, to which no other matter has been added. |
| Wheat meal ... ... ... | The meal obtained by grinding commercially pure wheat, as grown. |
| Wheat offals; millers' offals... | A product of wheat separated in the process of milling and containing not more than 4 per cent. of vegetable substances, other than wheat, extracted from wheat in the process of cleaning by the maker of the offals in the production of flour. |
| White fish meal ... ... | A product (containing not more than 6 per cent. of oil and not more than 4 per cent. of salt) obtained by drying and grinding or otherwise treating white fish or waste of white fish, to which no other matter has been added. |

In the case of every article mentioned in this Schedule the definition of which includes the expression " commercially pure ", it is implied that no other matter may be added.

## FIFTH SCHEDULE

Section 7

DELETERIOUS INGREDIENTS IN FEEDING STUFFS

(*a*) Salts soluble in water, if present in a feeding stuff in proportion likely to be injurious to the health of animals.

(*b*) All poisonous substances except those naturally present in the material or materials from which the feeding stuff is derived.

(*c*) Sand, silicious matter or other insoluble mineral matter not naturally associated with ingredients of the feeding stuff which do not fall within the scope of this Schedule, or which, even if naturally so associated, are present in greater proportion than the maximum that may be expected to be due to such natural association.

For the purposes of this paragraph the term " insoluble " shall imply insolubility as determined by a prescribed method; the term " natural association " shall be construed as applying to average commercial samples of the feeding material with which it may be claimed that a particular mineral ingredient is associated.

In Witness whereof, the Official Seal of the Minister of Agriculture, Fisheries and Food is hereunto affixed this fourth day of November, nineteen hundred and fifty-five.

(L.S.) *D. Heathcoat Amory.*

Given under the Seal of the Secretary of State for Scotland, this fourth day of November, nineteen hundred and fifty-five.

(L.S.) *James Stuart.*

## SCHEDULE

### FORM A

*Certificate for Fertiliser* (1)

I, the undersigned, agricultural analyst for the (2) ,
in pursuance of the provisions of the Fertilisers and Feeding Stuffs Act, 1926, hereby certify that I received on the day of 19 , from (3)
two parts of a sample of (4) for analysis;
which parts were duly sealed and fastened up and marked (5)
and were accompanied by the annexed (6) and also by a signed statement that the sample was taken in the prescribed manner:
and that one of the said parts has been analysed by me, or under my direction, and I declare the results of the analysis to be as follows:—

| | | |
|---|---|---|
| (7) Nitrogen ... ... ... ... ... ... ... ... | | per cent. |
| (8) Phosphoric acid ($P_2O_5$) | Total ... ... ... ... ... | per cent. |
| | Soluble in water ... ... ... | per cent. |
| | Insoluble in water ... ... ... | per cent. |
| | Soluble in citric acid ... ... ... | per cent. |
| (9) Potash ($K_2O$) ... ... ... ... ... ... ... | | per cent. |
| (10) Neutralising value expressed in terms of calcium oxide (CaO) ... | | per cent. |
| Free acid, as sulphuric acid ($H_2SO_4$), in sulphate of ammonia ... | | per cent. |
| Amount that will pass through a prescribed sieve ... ... | | per cent. |
| Amount (of screened chalk) that will pass through a declared British Standard Test Sieve ... ... ... ... ... | | per cent. |

(11)
and I am of opinion that (12)

The analysis was made in accordance with the Fertilisers and Feeding Stuffs Regulations, 1955.

As witness my hand this day of 19 .

(Signature and address of analyst)

(1) Statements made in certificates are to be confined to matters which either are necessary to be stated for the purposes of the Act or are voluntarily stated by the seller. They may extend to relevant matters of analysis, such as moisture content, but not to unrelated matters such as price.

(2) Here insert the name of the county, county borough, burgh or other district.

(3) Here insert the name of the inspector or official sampler who delivered the sample and, if so, " by post ".

(4) Here insert the name of the article as stated in the statutory statement, warranty or particulars marked on or indicated by a mark applied to the article.

(5) Here insert the distinguishing mark on the sample.

(6) Here insert either " statutory statement ", " copy of statutory statement ", " warranty ", " copy of warranty ", " copy of particulars marked on the article " or " copy of particulars indicated by a mark applied to the article " as the case may be. The document annexed should be initialled by the analyst for purposes of indentification.

(7) Nitrogen is to be stated in terms of nitrogen (N).

(8) Phosphoric acid is to be stated in terms of phosphoric anhydride ($P_2O_5$).

(9) Potash is to be stated in terms of potassium oxide ($K_2O$).

(10) Neutralising value is to be expressed in terms of calcium oxide (CaO).

(11) Here insert the names and percentages of other chemical or other ingredients or particulars as to the fineness of grinding, when any such statement is made in any written document (other than the statutory statement) descriptive of the article.

(12) Here enter information as follows:—

(*a*) if the article was sold under a name mentioned in the first column of the Fourth Schedule, state whether it accords with the definition contained in the second column; and, if not, in what respect.

(*b*) If the composition of the article agrees with or does not differ by more than the limits of variation from the statement of particulars contained in the statutory statement, or warranty, or the particulars marked on or indicated by a mark applied to the article, state that the particulars are correct within the limits of variation.

(*c*) If the composition of the article differs by more than the limits of variation from the statement of particulars contained in the statutory statement, or warranty, or the particulars marked on or indicated by a mark applied to the article, state the difference between the amount found and the amount stated, and that the difference is in excess of the limits of variation; and in what respect, if any, the difference is to the prejudice of the purchaser.

## FORM B

### *Certificate for Feeding Stuff* (1)

I, the undersigned, agricultural analyst for the (2) , in pursuance of the provisions of the Fertilisers and Feeding Stuffs Act, 1926, hereby certify that I received on the day of 19 , from (3) two parts of a sample of (4) for analysis; which parts were duly sealed and fastened up and marked (5) and were accompanied by the annexed (6) and also by a signed statement that the sample was taken in the prescribed manner: and that one of the said parts has been analysed by me, or under my direction, and I declare the results of the analysis to be as follows:—

| | |
|---|---|
| Oil ... ... ... ... ... ... ... ... ... | per cent. |
| Protein ... ... ... ... ... ... ... ... ... | per cent. |
| Fibre ... ... ... ... ... ... ... ... ... | per cent. |
| Sugar... ... ... ... ... ... ... ... ... | per cent. |
| (7) Salt (NaCl) ... ... ... ... ... ... ... ... | per cent. |
| Sand and other silicious matter ... ... ... ... ... ... | per cent. |
| (8) Phosphoric acid ($P_2O_5$) ... ... ... ... ... ... | per cent. |
| (9) | |

and I am of opinion that (10)

The analysis was made in accordance with the Fertilisers and Feeding Stuffs Regulations, 1955.

As witness my hand this day of 19

(Signature and address of analyst)

(1) Statements made in certificates are to be confined to matters which either are necessary to be stated for the purposes of the Act or are voluntarily stated by the seller. They may extend to relevant matters of analysis, such as moisture content, but not to unrelated matters such as price.

(2) Here insert the name of the county, county borough, burgh or other district.

(3) Here insert the name of the inspector or official sampler who delivered the sample and, if so, " by post ".

(4) Here insert the name of the article as stated in the statutory statement, warranty or particulars marked on or indicated by a mark applied to the article.

(5) Here insert the distinguishing mark on the sample.

(6) Here insert either " statutory statement ", " copy of statutory statement ", " warranty ", " copy of warranty ", " copy of particulars marked on the article " or " copy of particulars indicated by a mark applied to the article " as the case may be. The document annexed should be initialled by the analyst for purposes of identification.

(7) Salt is to be stated in terms of sodium chloride (NaCl).

(8) Phosphoric acid is to be stated in terms of phosphoric anhydride ($P_2O_5$).

(9) Here insert the names and percentages of other nutritive or other ingredients, when any such statement is made in any written document (other than the statutory statement) descriptive of the article.

([19]) Here enter information as follows:—

(*a*) If the article was sold under a name mentioned in the first column of the Fourth Schedule, state whether it accords with the definition contained in the second column; and, if not, in what respect.

(*b*) If the composition of the article agrees with or does not differ by more than the limits of variation from the statement of particulars contained in the statutory statement, or warranty, or the particulars marked on or indicated by a mark applied to the article, state that the particulars are correct within the limits of variation.

(*c*) If the composition of the article differs by more than the limits of variation from the statement of particulars contained in the statutory statement, or warranty, or the particulars marked on or indicated by a mark applied to the article, state the difference between the amount found and the amount stated, and that the difference is in excess of the limits of variation; and in what respect, if any, the difference is to the prejudice of the purchaser.

(*d*) Whether the article is suitable for feeding purposes for cattle (as defined by the Act) or for poultry, as the case may be; and, if not, in what respects.

(*e*) Whether the article contains any ingredient included in the Third Schedule to the Act not expressly stated in the statutory statement; and, if so, the name of such ingredient and, if possible, the estimated percentage.

(*f*) Whether the article contains any ingredient deleterious to cattle (as defined in the Act) or poultry having regard to Section 7 (2) and the Fifth Schedule to the Act; and, if so, the name of such ingredient and, if possible, the estimated percentage.

## FORM C

*Fertilisers and Feeding Stuffs Act*, 1926

Name of County, County Borough, Burgh or other District.....

RETURN TO THE MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (OR THE DEPARTMENT OF AGRICULTURE FOR SCOTLAND) FOR THE QUARTER ENDED.....

*Fertilisers*

| Serial No. of Sample | Date of Receipt | Name of Fertiliser | *Submitted by Inspector (I) or by Official Sampler (O.S.) | †Origin of Sample | Quantity (of compound or mixed fertiliser) sampled | | Results of Analysis (percentages) | | | | | | | | | | | ‡ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Moisture | Nitrogen | Phosphoric acid ($P_2O_5$) | | | | Potash ($K_2O$) | Neutralising value as CaO | Amount (of screened chalk) that will pass through a declared British Standard Test Sieve | Acidity as $H_2SO_4$ | Fineness of grinding | |
| | | | | | | | | | Total | Soluble in water | Insoluble in water | Soluble in citric acid | | | | | | |
| | | | | | | Guaranteed<br>Found | | | | | | | | | | | | |

* Where an officer holds appointments as both inspector and official sampler, " I " should be inserted if the sample was taken in his capacity as inspector and " O.S." if the sample was taken in his capacity as official sampler.

† Insert in this column either (*a*) In the case of formal sample taken by inspector on premises of manufacturer or merchant—name and address of person on whose premises sample was taken; (*b*) In the case of formal sample taken by inspector on premises of farmer—the word " Farmer "; (*c*) In the case of formal sample taken by official sampler (or inspector acting in capacity of official sampler)—name and address of seller; or (*d*) In the case of informal sample taken by inspector under Section 12 (2) or otherwise taken informally—the word " informal ".

‡ In this column should be given any further information relating to the composition or condition of the sample.

NOTE.—If no samples have been analysed, a " nil " return should be rendered.

Signature .....

Date .....

## FORM D

*Fertilisers and Feeding Stuffs Act*, 1926

Name of County, County Borough, Burgh or other District.....

RETURN TO THE MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (OR THE DEPARTMENT OF AGRICULTURE FOR SCOTLAND) FOR THE QUARTER ENDED.....

*Feeding Stuffs*

| Serial No. of Sample | Date of Receipt | Name of Feeding Stuff | *Submitted by Inspector (I) or by Official Sampler (O.S.) | †Origin of sample | | Results of Analysis (percentages) | | | | | | | | ‡ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Moisture | Oil | Protein | Fibre | Sugar | Salt (NaCl) | Sand and other silicious matter | Phosphoric acid ($P_2O_5$) | |
| | | | | | Guaranteed<br>Found | | | | | | | | | |

* Where an officer holds appointments as both inspector and official sampler, " I " should be inserted if the sample was taken in his capacity as inspector and " O.S." if the sample was taken in his capacity as official sampler.

† Insert in this column either (*a*) In the case of formal sample taken by inspector on premises of manufacturer or merchant—name and address of person on whose premises sample was taken; (*b*) In the case of formal sample taken by inspector on premises of farmer—the word " Farmer "; (*c*) In the case of formal sample taken by official sampler (or inspector acting in capacity of official sampler)—name and address of seller; or (*d*) In the case of informal sample taken by inspector under Section 12 (2) or otherwise taken informally—the word " informal ".

‡ In this column should be stated whether the sample contained any deleterious ingredient or any substance included in the Third Schedule and any other particulars as to the composition or condition of the sample. If estimated, percentages should be given.

NOTE.—If no samples have been analysed, a " nil " return should be rendered.

Signature .....

Date .....

## EXPLANATORY NOTE

*(This Note is not part of the Regulations, but is intended to indicate their general purport.)*

These Regulations consolidate with amendments previous Regulations made under the Fertilisers and Feeding Stuffs Act, 1926. By the Act the Minister of Agriculture, Fisheries and Food and the Secretary of State for Scotland, acting jointly, are authorised to make Regulations prescribing various matters to give effect to the Act.

The principal changes involve certain alterations of the limits within which mis-statements of quality and content are not actionable (Regulation 5), of the manner of taking samples (Regulation 6), and of the methods of analysis of samples of fertilisers (Regulation 14) and feeding stuffs (Regulation 15). The First, Second and Fourth Schedules to the Act have been varied by the alteration of the particulars required to be given by a seller in respect of certain articles, the alteration of the definitions implied on the sale of certain articles and by the inclusion of additional items, being fertilisers and feeding stuffs which have come into general use since the making of the earlier Regulations (Regulation 18).

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# FIRE SERVICES

## CONDITIONS OF SERVICE

## 1955 No. 1460

## The Fire Services (Appointments and Promotion) Regulations, 1955

| | |
|---|---|
| *Made* - - - - | *19th September*, 1955 |
| *Laid before Parliament* | *23rd September*, 1955 |
| *Coming into Operation* | *1st October*, 1955 |

In pursuance of the powers conferred on me by subsection (1) of section eighteen of the Fire Services Act, 1947(**a**), I hereby make the following Regulations :—

**1.** In sub-paragraph (*a*) of paragraph (1) of Regulation 5 of the Fire Services (Appointments and Promotion) Regulations, 1950(**b**), the words " and the written technical examination specified in sub-paragraph (*b*) of paragraph (4) of Regulation 3 of these Regulations " shall be omitted.

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(**a**) 10 & 11 Geo. 6, c. 41. (**b**) S.I. 1950/619 (1950 I, p. 691).