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II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DIRECTIVE

of 23 November 1976

on the marketing of straight feedingstuffs

(77/101/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Articles 43 and 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament ⁽¹⁾,

Having regard to the opinion of the Economic and Social Committee ⁽²⁾,

Whereas livestock production occupies a very important position in the agriculture of the European Economic Community; whereas satisfactory results depend to a large extent on the use of suitable, good-quality feedingstuffs;

Whereas rules governing feedingstuffs are important to an increase in agricultural productivity, in view of the role played by straight feedingstuffs in this respect;

Whereas it is necessary to lay down rules for the more important straight feedingstuffs; whereas

corresponding names must be used for those straight feedingstuffs put on the market and these must correspond to the descriptions under which they are presented;

Whereas, when rules are being laid down for the marketing of straight feedingstuffs, care should be taken to ensure that such feedingstuffs have a favourable effect on livestock production; whereas feedingstuffs must therefore always be wholesome, unadulterated and of merchantable quality; whereas they must neither represent a danger to animal or human health nor be marketed in a manner liable to mislead;

Whereas the provisions of this Directive apply only to straight feedingstuffs which are intended for use as such by livestock producers; whereas the Member States must, however, have the opportunity of extending the principles of this Directive to products and substances used for the manufacture of compound feedingstuffs;

Whereas it is necessary to provide the user with accurate and meaningful information on the composition of the straight feedingstuffs at his disposal; whereas, therefore, at least the amounts of those constituents having a direct effect on the quality of the feedingstuffs should be declared;

⁽¹⁾ OJ No C 10, 5. 2. 1972, p. 35.

⁽²⁾ OJ No C 4, 20. 1. 1972, p. 3.

Whereas, having regard to the established practice in certain Member States, provision must be made for the opportunity of requiring a more complete declaration of the composition of straight feedingstuffs; whereas, however, such additional declarations may only be required to the extent provided for in the Annex;

Whereas Member States may provide for the naming, description and labelling of straight feedingstuffs other than those listed in the Annex;

Whereas Member States should, furthermore, have the opportunity of providing for the compulsory packaging of certain straight feedingstuffs listed in the Annex;

Whereas it appears useful to make it possible for Member States to promote the production of high-quality straight feedingstuffs by recommending quality criteria in relation to their composition;

Whereas it seems necessary, in order to ensure free movement within the Community for straight feedingstuffs, to fix certain minimum compositional requirements; whereas Member States must on the other hand remain free to make these minimum requirements compulsory for the marketing of feedingstuffs in their own territories;

Whereas Member States must, however, ensure that straight feedingstuffs satisfying the provisions of this Directive shall not be subject within the Community to any marketing restrictions as regards their naming, description or labelling;

Whereas Member States must make suitable control arrangements to ensure compliance during marketing with the provisions laid down for straight feedingstuffs;

Whereas in order to facilitate the implementation of the measures envisaged and, in particular, to amend and supplement them where necessary, provision should be made for a procedure establishing close cooperation between Member States and the Commission within the Standing Committee for Feedingstuffs set up by Decision 70/372/EEC ⁽¹⁾,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive shall apply to straight feedingstuffs marketed within the Community.
2. This Directive shall apply without prejudice to the provisions on:
 - (a) additives used in feedingstuffs;
 - (b) the fixing of maximum permitted levels for undesirable substances and products in feedingstuffs;
 - (c) the fixing of maximum permitted levels for pesticide residues on or in products intended for human or animal consumption.

Article 2

For the purposes of this Directive straight feedingstuffs shall mean the various vegetable and animal products in their natural state, fresh or preserved, and their derivatives after industrial processing, as well as the various organic and inorganic substances intended, as such, for oral animal feeding.

Article 3

Member States shall prescribe that straight feedingstuffs may be marketed only if they are wholesome, unadulterated and of merchantable quality. They shall prescribe that straight feedingstuffs must not represent a danger to animal or human health and must not be presented or marketed in a manner liable to mislead.

Article 4

Member States shall prescribe that the general provisions laid down in Part A of the Annex shall apply to the marketing of straight feedingstuffs.

Article 5

1. Member States shall prescribe that the straight feedingstuffs listed in Part B, column 2, of the Annex may be marketed only under the names specified therein and on condition that they correspond to the descriptions given in Part B, column 3, of the Annex.

⁽¹⁾ OJ No L 170, 3. 8. 1970, p. 1.

2. Member States may prescribe names and descriptions for straight feedingstuffs other than those listed in Part B of the Annex.

Article 6

Member States may prescribe that the straight feedingstuffs referred to in Part B, column 7, of the Annex may be marketed only in sealed packages or containers. Member States may prescribe that the packages or containers be sealed in such a way that when a package is opened, the seal is damaged and cannot be re-used.

Article 7

1. Member States shall prescribe that the straight feedingstuffs listed in Part B, column 2, of the Annex may be marketed only if the particulars listed below — for which the producer, packer, importer, seller or distributor, established within the Community, shall be held responsible — are set out in the package or container or on a label attached thereto :

- (a) the words 'straight feedingstuff';
- (b) name as in Part B, column 2, of the Annex;
- (c) where appropriate, the particulars laid down in Part A of the Annex;
- (d) the levels of the constituents listed in Part B, column 4, of the Annex;
- (e) net weight;
- (f) name or trade name and address or registered office of the person responsible for the particulars referred to in this paragraph.

2. Member States shall prescribe that, where straight feedingstuffs are marketed in bulk, the particulars listed in paragraph 1 shall be set out in an accompanying document.

3. Member States may prescribe that the particulars listed in paragraph 1 may appear only in an accompanying document provided that the same sign, permitting the identification of the consignment, appears on the package, container or label and on the accompanying document.

4. By way of derogation from the provisions of paragraph 1, Member States may prescribe full or partial indication of the levels of the constituents listed in Part B, column 5, of the Annex.

5. Member States shall prescribe that only the following additional particulars may be put on the package, container, label or accompanying document of straight feedingstuffs in conjunction with the particulars listed in paragraph 1:

- (a) identification mark or trade mark of the person responsible for the particulars referred to in this paragraph;
- (b) batch number;
- (c) directions for use and the time limit for keeping the product;
- (d) country of production or manufacture;
- (e) price of the product;
- (f) where appropriate, the particulars specified in Article 14 (b);
- (g) in full or in part, the levels of the constituents listed in Part B, column 5, of the Annex.

6. Member States may lay down provisions similar to those of paragraphs 1 to 5 for straight feedingstuffs other than those listed in Part B of the Annex.

7. Any other information appearing on packaging, containers, labels and accompanying documents must be given separately from the particulars referred to in paragraphs 1 to 6.

Article 8

Member States may prescribe, for the marketing of straight feedingstuffs on their territories, that the requirements listed in Part B, column 6, of the Annex shall be complied with and may fix corresponding requirements for other straight feedingstuffs.

Article 9

Member States shall ensure that straight feedingstuffs are not subject, for reasons concerning the provisions included in this Directive, to marketing restrictions other than those provided for by this Directive.

Article 10

Amendments to be made to the Annex in the light of advances in scientific and technical knowledge shall

be adopted in accordance with the procedure laid down in Article 13.

Article 11

For the purposes of trade between Member States, the particulars referred to in Article 7 (1) to (6) shall be written in at least one of the national or official languages of the country of destination.

Article 12

Member States shall make all necessary arrangements for official inspection during marketing, at least by sampling, in order to ensure compliance with the requirements of this Directive.

Article 13

1. Where the procedure laid down in this Article is to be followed, the matter shall be referred without delay to the Standing Committee for Feedingstuffs (hereinafter referred to as 'the Committee') by its chairman, either on his own initiative or at the request of a Member State.

2. The votes of the Member States within the Committee shall be weighted as provided in Article 148 (2) of the Treaty. The chairman shall not vote.

3. The Commission representative shall submit a draft of the measures to be adopted. The Committee shall deliver its opinion on such measures within a time limit set by the chairman according to the urgency of the matters under examination. An opinion must receive at least 41 votes in its favour before it may be delivered.

4. The Commission shall adopt the measures and implement them forthwith where they are in accordance with the opinion of the Committee. Where they are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall without delay propose to the

Council the measures to be adopted. The Council shall adopt the measures by a qualified majority.

If the Council has not adopted any measures within three months of a proposal being submitted to it, the Commission shall adopt the proposed measures and implement them forthwith, except where the Council has voted by a simple majority against such measures.

Article 14

This Directive shall not affect the right of Member States:

- (a) also to apply the principles of this Directive to products and substances intended for animal feeding which are not considered as straight feedingstuffs within the meaning of Article 2;
- (b) to recommend quality criteria for certain straight feedingstuffs;
- (c) to refrain from applying the provisions of this Directive in respect of straight feedingstuffs marked in such a way as to establish that they are intended for export to non-member countries.

Article 15

The Member States shall bring into force on 1 January 1979 the laws, regulations or administrative provisions necessary to comply with this Directive and shall forthwith inform the Commission thereof.

Article 16

This Directive is addressed to the Member States.

Done at Brussels, 23 November 1976.

For the Council

The President

A.P.L.M.M. van der STEE

ANNEX

PART A

GENERAL PROVISIONS

1. Designation

- 1.1. If the straight feedingstuff has undergone a process which is not indicated by the name, there must always be added to the name of the product, particulars of the process used, the method by which it had been obtained, and, if applicable, the type of presentation, e.g. 'pressed', 'rolled', 'crushed', 'ground', 'milled', 'pressed cake', 'broken cake', 'cake crumbs', 'cake meal', 'expellers', 'expeller meal' or 'oil meal'.
- 1.2. In the case of the straight feedingstuffs listed in 2.1.1 to 2.1.3 of Part B, it may be laid down that the name must be supplemented by particulars of the type or types of wheat used: common wheat, durum wheat or common wheat and durum wheat.
- 1.3. In the case of the straight feedingstuffs listed in 2.9.2 and 3.2.8 of Part B, it may be laid down that the name must be accompanied by particulars of the vegetable or animal species from which the product is derived.

2. Compulsory declarations and requirements

- 2.1. The levels indicated or to be declared as specified in Part B refer to:
 - the weight of the straight feedingstuff as such, for the purpose of columns 4 and 5,
 - the weight of dry matter contained in the straight feedingstuff, for the purpose of column 6, with the exception of items 2.6.5, 2.6.6, 2.9.2, 3.2.8 and 3.3.2.
- 2.2. Where the products referred to in column 2 of Part B of the Annex are used to denature or bind straight feedingstuffs, the following information must be given:
 - denaturing agents: nature and quantity of the products used,
 - binding agents: nature of the products used.

In the case of binding agents, the quantity of the products used may not exceed 3% of the total weight.
- 2.3. In so far as other values have not been laid down regarding certain straight feedingstuffs, the botanical purity of the products and by-products listed in Part B, under 1 and 2, must not be less than 95%.
- 2.4. Where, on official analysis pursuant to Article 12 of the Directive, the composition of a straight feedingstuff is found to depart from the declared composition in a manner such as to reduce its value, the following minimum tolerances are permitted:
 - (a) for crude protein, nitrogen, total sugars, reducing sugars and sucrose, lactose and glucose (dextrose):
 - two units for declared contents of 20% or more,
 - 10% of the declared content for declared contents of less than 20%,
 - 0.5 unit for declared contents of less than 5%;

- (b) for starch and inulin:
 - three units for declared contents of 30% or more,
 - 10% of the declared content for declared contents of less than 30%,
 - one unit for declared contents of less than 10%;
 - (c) For crude oils and fats and crude fibre:
 - 1.5 units for declared contents of 15% or more,
 - 10% of the declared content for declared contents of less than 15%,
 - 0.5 unit for declared contents of less than 5%;
 - (d) for moisture, crude ash, total phosphorus, calcium carbonate, calcium, magnesium, acidity index, oxidized fatty acids, matter insoluble in ether and unsaponifiable matter:
 - one unit for declared contents (values) of 10% (10) or more, as appropriate,
 - 10% of the declared content (value) for declared contents of less than 10% (10), as appropriate,
 - 0.2 unit for declared contents (values) of less than 2% (2), as appropriate;
 - (e) for ash insoluble in hydrochloric acid and chlorides expressed as NaCl:
 - 10% of the declared content for declared contents of 2% or more,
 - 0.2 unit for declared contents of less than 2%;
 - (f) for carotene, vitamin A and Xanthophyll:
 - 30% of the declared content;
 - (g) for methionine:
 - 20% of the declared content.
- 2.5. Without prejudice to the provisions laid down in Article 3, the content of ash insoluble in hydrochloric acid (HCl) in the straight feedingstuffs listed in Part B must not exceed 2% unless a different content is specified in column 6.
- 2.6. Considered as being botanical impurities are:
- (a) natural but innocuous impurities (e.g. straw and straw waste, seeds of other cultivated species or of weeds);
 - (b) harmless residues of other oil seeds or oleaginous fruit derived from a previous manufacturing process, the level of which does not exceed 0.5%.

PART B

SPECIAL PROVISIONS

	Name of feedingstuff	Description	Compulsory declarations	Optional declarations	Composition requirements	Packaging requirements
1	2	3	4	5	6	7
1.	OIL CAKES AND MEALS					
1.1.	Macoya (Paraguay) palm kernel expeller	By-product of oil manufacture, obtained by pressing from seeds separated from their pulp of the following species of Macoya (Paraguay) palm: <i>Acrocomia sclerocarpa</i> Mart. and <i>Acrocomia totai</i> Mart.	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein min. 29.5% Moisture max. 12 % Crude ash max. 8 %	
1.2.	Macoya (Paraguay) extracted palm kernel	By-product of oil manufacture, obtained by extraction from seeds separated from their pulp of species of Macoya (Paraguay) palm	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein min. 32 % Crude oil and fat max. 2.3% Crude ash max. 8 % Moisture max. 12 %	
1.3.	Macoya (Paraguay) palm pulp	By-product of oil manufacture, obtained by pressing from pulp of Macoya (Paraguay) palm	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein min. 11.5% Moisture max. 12 % Crude fibre max. 24 % Crude ash max. 9 %	
1.4.	Decorticated groundnut expeller	By-product of oil manufacture, obtained by pressing from decorticated groundnuts (species <i>Arachis hypogaea</i> and other species of <i>Arachis</i>)	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein min. 49 % Moisture max. 12 % Crude fibre max. 7 % Crude ash max. 7 %	

1	2	3	4	5	6	7
1.5.	Extracted decorticated groundnut	By-product of oil manufacture, obtained by extraction from decorticated groundnuts	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Crude ash Moisture	min. 52.50% max. 2.30% max. 8 % max. 7 % max. 12 %
1.6.	Partly-decorticated groundnut expeller	By-product of oil manufacture, obtained from partly-decorticated groundnuts	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 40 % max. 12 % max. 16 % max. 8 %
1.7.	Extracted, partly-decorticated groundnut	By-product of oil manufacture, obtained by extraction from partly-decorticated groundnuts	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Crude ash Moisture	min. 43 % max. 2.30% max. 16 % max. 8 % max. 12 %
1.8.	Rape seed expeller	By-product of oil manufacture, obtained by pressing from seeds of rape <i>Brassica napus</i> L. ssp. <i>oleifera</i> (Metzg.) Sinsk., of Indian sarson <i>Brassica napus</i> L. var. <i>glauca</i> (Roxb.) O. E. Schulz and of rape <i>Brassica campestris</i> L. ssp. <i>oleifera</i> (Metzg.) Sinsk.	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash Botanical purity	min. 36 % max. 12 % max. 9.50% min. 94 %
1.9.	Extracted rape seed	By-product of oil manufacture, obtained by extraction from seeds of colza, Indian sarson or rape	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture Botanical purity	min. 38.50% max. 2.30% max. 10 % max. 12 % min. 94 %
1.10.	Copra expeller	By-product of oil manufacture, obtained by pressing from copra, the dried kernel (endosperm) and outer husk (tegument) of the fruit of the coconut palm, <i>Cocos nucifera</i> L.	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash	min. 20.50% max. 12 % max. 8 %

1	2	3	4	5	6	7
1.11.	Extracted copra	By-product of oil manufacture, obtained by extraction from copra, the dried kernel (endosperm) and outer husk (tegument) of the fruit of the coconut palm	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture	min. 22.50% max. 2.30% max. 8 % max. 12 %
1.12.	Palm kernel expeller	By-product of oil manufacture, obtained by pressing from palm nuts, from which as much as possible of the hard shell has been removed, of the following species of oil palm: <i>Elaeis guineensis</i> Jacq., <i>Corozo oleifera</i> (H.B.K.) L. H. Bailey (<i>Elaeis melanococca</i>)	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash	min. 17 % max. 12 % max. 5.50%
1.13.	Extracted palm kernel	By-product of oil manufacture, obtained by extraction from palm nuts of the species of oil palm from which as much as possible of the hard shell has been removed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture	min. 18 % max. 2.30% max. 5.50% max. 12 %
1.14.	Soya expeller	By-product obtained from soya beans (the seed of the species <i>Glycine max.</i> (L.) Merr.)	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 47.50% max. 12 % max. 8 % max. 7.50%
1.15.	Extracted roasted soya	By-product obtained from soya beans by extraction and appropriate heat treatment	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Moisture Crude fibre Crude ash Urease activity Crude oil and fat	min. 50 % max. 12 % max. 8 % max. 7.50% max. 0.5 unit max. 2.30%

1	2	3	4	5	6	7
1.16.	Extracted toasted hulled soya	By-product obtained from hulled soya beans by extraction and appropriate heat treatment	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Moisture Crude fibre Crude ash Urease activity Crude oil and fat	min. 54.5% max. 12 % max. 4 % max. 7 % max. 0.5 unit max. 2.3%
1.17.	Decorticated cotton seed expeller	By-product of oil manufacture, obtained by pressing from seeds of cotton be- longing to the genus <i>Gossypium</i> sp.p. from which the fibres and husks have been removed	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash Crude fibre	min. 45.5% max. 12 % max. 9 % max. 12.5%
1.18.	Extracted decortic- ated cotton seed	By-product of oil manufacture, obtained by extraction from seeds of cotton from which the fibres and husks have been removed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Crude ash Moisture	min. 47.5% max. 2.3% max. 13.5% max. 9 % max. 12 %
1.19.	Partly-decorticated cotton seed expeller	By-product of oil manufacture, obtained from seeds of cotton from which the fibres and part of the husks have been removed	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 34 % max. 12 % max. 22.5% max. 10 %
1.20.	Extracted, partly- decorticated cotton seed	By-product of oil manufacture, obtained by extraction from seeds of cotton from which the fibres and part of the husks have been removed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Crude ash Moisture	min. 36.5% max. 2.3% max. 22.5% max. 10 % max. 12 %

1	2	3	4	5	6	7
1.21.	Expeller or extracted niger seed	By-product of oil manufacture, obtained by pressing seeds of the niger plant (<i>Guizotia abyssinica</i> (L.f.) Cass.)	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash Ash insoluble in HCl	min. 33 % max. 12 % max. 9 % max. 3.4 %
1.22.	Decorticated sunflower seed expeller	By-product of oil manufacture, obtained by pressing from seeds of the sunflower (<i>Helianthus annuus</i> L.) from which as much as possible of the husk has been removed	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 43 % max. 12 % max. 16 % max. 9 %
1.23.	Extracted decorticated sunflower seed	By-product of oil manufacture, obtained by extraction from seeds of the sunflower from which part of the husks have been removed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Crude fibre Moisture	min. 45.5 % max. 2.3 % max. 9 % max. 16 % max. 12 %
1.24.	Partly-decorticated sunflower seed expeller	By-product of oil manufacture, obtained by pressing from seeds of the sunflower from which part of the husks have been removed	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 30.5 % max. 12 % max. 27.5 % max. 9 %
1.25.	Extracted, partly-decorticated sunflower seed	By-product of oil manufacture, obtained by extraction from seeds of the sunflower from which part of the husks have been removed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Crude ash Moisture	min. 32 % max. 2.3 % max. 27.5 % max. 9 % max. 12 %
1.26.	Linseed expeller	By-product of oil manufacture, obtained by pressing from linseed, <i>Linum usitatissimum</i> L.	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash Botanical purity	min. 34 % max. 12 % max. 8 % min. 93 %

1	2	3	4	5	6	7
1.27.	Extracted linseed	By-product of oil manufacture, obtained by extraction from linseed	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture Botanical purity	min. 36.5% max. 2.3% max. 8 % max. 12 % min. 93 %
1.28.	Babassu palm nut expeller	By-product of oil manufacture, obtained by pressing from palm nuts, from which as much as possible of the hard shell has been removed, of the Brazilian Babassu palms <i>Orbignya oleifera</i> Burr. and other species of <i>Orbignya</i>	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 22.5% max. 12 % max. 17 % max. 7.5%
1.29.	Rice germ expeller	By-product of oil manufacture, obtained by pressing from germ of rice <i>Oryza sativa</i> L. to which parts of the endosperm and tegument still adhere	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Rice husk	min. 25 % max. 10 % max. 10 % max. 1 %
1.30.	Extracted brown rice germ	By-product of oil manufacture, obtained by extraction from germ of rice to which parts of the endosperm and tegument still adhere	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude fibre Moisture Rice husk	min. 26 % max. 2.3% max. 10 % max. 12 % max. 1 %
1.31.	Sesame seed expeller	By-product of oil manufacture, obtained by pressing from seeds of the sesame plant, <i>Sesamum indicum</i> L.	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash Ash insoluble in HCl	min. 43 % max. 12 % max. 15 % max. 5 %
1.32.	Extracted sesame seed	By-product of oil manufacture, obtained by extraction from seeds of the sesame plant	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture Ash insoluble in HCl	min. 45.5% max. 2.3% max. 15 % max. 12 % max. 5 %

1	2	3	4	5	6	7
1.33.	Extracted cocoa bean (low in theobromine)	By-product of oil manufacture, obtained by extraction from dried and roasted cocoa beans (<i>Theobroma cacao</i> L.) from which as much as possible of the husk has been removed	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 22.5% max. 12 % max. 13 % max. 9 %
1.34.	Wheat germ expeller	By-product of oil manufacture, obtained by pressing from wheat germ of the species <i>Triticum aestivum</i> L., <i>Triticum durum</i> Desf. and from other cultivated species of husked wheat or from screened husked grains of spelt of the species <i>Triticum spelta</i> L., <i>Triticum dicoccum</i> Schrank, <i>Triticum monococcum</i> L., to which parts of the endosperm and tegument still adhere	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash	min. 28.5% max. 12 % max. 7 %
1.35.	Maize germ expeller (by-product of maize milling)	By-product of oil manufacture, obtained by pressing and by a dry process from maize germ (<i>Zea mays</i> L.) to which parts of the endosperm and testa still adhere	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude fibre Crude ash	min. 12.5% max. 12.5% max. 8 % max. 9 %
1.36.	Extracted maize germ (by-product of maize milling)	By-product of oil manufacture, obtained by extraction and by a dry process from maize germ to which parts of the endosperm and testa still adhere	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Moisture Crude fibre Crude ash Crude oil and fat	min. 13.5% max. 12.5% max. 8 % max. 9 % max. 2.3%
1.37.	Maize germ expeller (by-product of the starch industry)	By-product of oil manufacture, obtained by pressing and by a wet process from maize germ to which parts of the endosperm and testa still adhere	Crude protein Crude fibre Crude oil and fat	Crude ash Moisture	Crude protein Moisture Crude ash	min. 20 % max. 12.5% max. 7.5%

1	2	3	4	5	6	7
1.38.	Extracted maize germ (by-product of the starch industry)	By-product of oil manufacture, obtained by extraction and by a wet process from maize germ to which parts of the endosperm and testa still adhere	Crude protein Crude fibre	Crude ash Moisture Crude oil and fat	Crude protein Crude oil and fat Crude ash Moisture	min. 21.5% max. 2.3% max. 7.5% max. 12.5%
2.	PRODUCTS AND BY-PRODUCTS OF THE PROCESSING OF VEGETABLE SUBSTANCES					
2.1.	By-products of milling					
2.1.1.	Wheat bran	By-product of flour manufacture, obtained from screened, husked grains of wheat or spelt. It consists principally of fragments of the outer skins, and of particles of grain from which the greater part of the endosperm has been removed	Crude fibre	Crude ash Moisture	Moisture Crude fibre Crude ash	max. 14 % max. 14.5% max. 8.5%
2.1.2.	Wheat feed	By-product of flour manufacture, obtained from screened, husked grains of wheat or spelt. It consists principally of fragments of the outer skins and of particles of grain from which less of the endosperm has been removed than in wheat bran	Crude fibre	Starch Crude ash Moisture	Starch Moisture Crude fibre Crude ash	min. 21 % max. 14 % max. 11.5% max. 7.5%
2.1.3.	Wheat middlings	By-product of flour manufacture, obtained from screened, husked wheat or spelt. It consists principally of particles of endosperm with fine fragments of the outer skins and some grain waste	Crude fibre	Starch Crude ash Moisture	Starch Moisture Crude fibre Crude ash	min. 35 % max. 14 % max. 6 % max. 6.5%

1	2	3	4	5	6	7
2.1.4.	Wheat germ	By-product of milling consisting essentially of wheat germ, rolled or otherwise, to which fragments of endosperm and outer skin still adhere	Crude fibre	Crude protein Crude oil and fat Crude ash Moisture	Crude protein Crude oil and fat Moisture Crude fibre	x
2.1.5.	Rye bran	By-product of flour manufacture, obtained from screened rye (<i>Secale cereale</i> L.). It consists principally of fragments of the outer skins, and of particles of grain from which most of the endosperm has been removed	Crude fibre	Crude ash Moisture	Moisture Crude fibre Crude ash	
2.1.6.	Rye feed	By-product of flour manufacture, obtained from screened rye. It consists principally of fragments of the outer skins, and of particles of grain from which less of the endosperm has been removed than in rye bran	Crude fibre	Starch Crude ash Moisture	Starch Moisture Crude fibre Crude ash	
2.1.7.	Rye screenings (rye meal)	By-product of flour manufacture, obtained from screened rye. It consists principally of particles of endosperm, with fine fragments of the outer skins and some grain waste	Crude fibre	Starch Crude ash Moisture	Starch Moisture Crude fibre Crude ash	
2.2.	Products and by-products of the manufacture of flakes, groats and husked grain					
2.2.1.	Husked oat sharps (middlings)	By-product, rich in starch, obtained during the processing of screened, husked oats (<i>Avena sativa</i> L. and other cultivated species of oats) into oat groats or sifted oatmeal	Crude fibre Starch	Crude ash Moisture	Starch Moisture Crude fibre Crude ash	

1	2	3	4	5	6	7
2.2.2.	Oat feed	By-product obtained during the processing of screened, unhusked oats into oat groats. The quantity of husks present in the by-product must correspond to that obtained after normal processing	Crude fibre	Starch Crude ash Moisture	Moisture Crude fibre Crude ash	max. 14 % max. 30 % max. 7 %
2.2.3.	Flaked barley	Product obtained by steaming and rolling husked barley (<i>Hordeum vulgare</i> L.)	Crude fibre	Starch Moisture	Starch Moisture Crude fibre Crude ash	min. 58 % max. 14 % max. 2.3% max. 4.7%
2.2.4.	Barley feed	By-product of the processing of screened and husked barley into pearl barley or semolina or sifted barley meal	Crude fibre Starch	Crude ash Moisture	Starch Moisture Crude fibre Crude ash	min. 40.5% max. 14 % max. 11.5% max. 6.5%
2.2.5.	Flaked maize	Product obtained by steaming and rolling maize	Crude fibre	Starch Moisture	Starch Moisture Crude fibre Crude ash	min. 70 % max. 14 % max. 4.7% max. 3.5%
2.2.6.	Pea middlings (pea forage meal)	By-product obtained during the manufacture of pea-meal (<i>Pisum sativum</i> L.). It consists principally of particles of endosperm, and to a lesser extent, of skins	Crude protein Crude fibre	Crude oil and fat Crude ash Moisture	Crude protein Moisture Crude fibre	min. 23.5% max. 14 % max. 9.5%
2.2.7.	Flaked potatoes	Product obtained by drying potatoes, <i>Solanum tuberosum</i> L., whether or not peeled, which have been steamed or boiled and crushed	Crude fibre	Starch Moisture	Starch Moisture Crude ash Ash insoluble in HCl	min. 70 % max. 14 % max. 7.5% max. 1.7%

1	2	3	4	5	6	7
2.3.	By-products of maize milling					
2.3.1.	Maize feed meal	By-product, rich in starch, of the manufacture of flour or semolina from maize	Starch	Crude fibre Crude ash Crude oil and fat Moisture Crude protein	Starch Moisture Crude fibre Crude ash	min. 37 % max. 14 % max. 8 % max. 5 %
2.3.2.	Maize bran	By-product of the manufacture of flour or semolina from maize. It consists principally of outer skins and maize germ, with some endosperm particles	Crude fibre	Crude ash Moisture Crude oil and fat Crude protein	Moisture Crude fibre Crude ash	max. 14 % max. 14 % max. 5 %
2.4.	Products and by-products of rice milling					
2.4.1.	Ground fodder rice	Product obtained by grinding fodder rice (<i>Oryza sativa</i> L.) consisting either of green, chalky or unripe grains, sifted out during the milling of husked rice, or of normal husked grains which are yellow or spotted	Starch	Crude fibre Crude ash Moisture Crude oil and fat Crude protein	Starch Moisture Crude fibre Crude ash	min. 76 % max. 14 % max. 2.9% max. 3.5%
2.4.2.	Broken rice	By-product of the preparation of polished or glazed rice. It consists principally of undersized or broken grains	Starch		Botanical purity Moisture	min. 99 % max. 14 %
2.4.3.	Rice bran (brown)	By-product of the first polishing of husked rice. It consists of silvery skins, particles of the aleurone layer, endosperm and germ	Crude protein Crude fibre Crude oil and fat	Moisture Crude ash Ash insoluble in HCl	Crude protein Crude oil and fat Moisture Crude fibre Crude ash Ash insoluble in HCl Rice husks	min. 13.5% min. 13.5% max. 12 % max. 12.5% max. 13.5% max. 1.7% max. 3 %

1	2	3	4	5	6	7
2.4.4.	Rice bran (white)	By-product of the second polishing of husked rice. It consists principally of particles of endosperm, of the aleurone layer and of germ	Crude protein Crude fibre Crude oil and fat	Moisture Crude ash Ash insoluble in HCl	Crude protein Crude oil and fat Moisture Crude fibre Crude ash Ash insoluble in HCl Rice husks	min. 13.5% min. 13.5% max. 12 % max. 7 % max. 10 % max. 0.6% max. 1 %
2.5.	Products and by-products of the starch industry					
2.5.1.	Maize starch	Virtually pure maize starch	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 98 % max. 14 % max. 0.6%
2.5.2.	Puffed maize starch	Virtually pure maize starch, greatly expanded by appropriate heat treatment	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 98 % max. 10 % max. 0.6%
2.5.3.	Pre-gelatinized partially hydrolyzed maize starch	Virtually pure maize starch, largely pre-gelatinized and partially hydrolyzed	Starch Reducing sugars, expressed as glucose	Moisture Crude ash	Reducing sugars, expressed as glucose Moisture Crude ash	min. 28 % max. 10 % max. 1.1%
2.5.4.	Maize germ and bran	By-product of the manufacture of maize starch consisting of non-extracted germ, maize bran and some fragments of endosperm	Crude oil and fat Crude protein	Moisture Crude fibre Crude ash Starch	Crude oil and fat Moisture Crude fibre	min. 11 % max. 13 % max. 9 %

1	2	3	4	5	6	7
2.5.5.	Maize gluten	Dried by-product of the manufacture of maize starch. It consists principally of gluten obtained during the separation of the starch	Crude protein	Moisture Crude fibre Crude ash Crude oil and fat Xanthophyll	Crude protein Moisture Crude fibre Crude ash	min. 67 % max. 13 % max. 5 % max. 3.5%
2.5.6.	Maize gluten feed	Dried by-product of the manufacture of maize starch. It is composed of bran and of a smaller quantity of gluten. Dried residues of the steeping liquors, and germ from which the oil has been removed, may be added	Crude protein	Moisture Crude fibre Crude ash Crude oil and fat	Crude protein Moisture Crude fibre Crude ash	min. 20.5% max. 13 % max. 11.5% max. 10.5%
2.5.7.	Rice starch	Virtually pure rice starch	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 98 % max. 14 % max. 1.2%
2.5.8.	Puffed rice starch	Virtually pure rice starch, greatly expanded by appropriate heat treatment	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 94 % max. 10 % max. 1.1%
2.5.9.	Rice gluten	By-product of the manufacture of rice starch, consisting mainly of gluten	Crude protein	Moisture Crude fibre Crude ash Crude oil and fat	Crude protein Moisture Crude fibre Crude ash	min. 63 % max. 13 % max. 2.3% max. 5 %
2.5.10.	Sorghum gluten feed	Dried by-product of the manufacture of sorghum starch (<i>Sorghum bicolor</i> L. Moench). It consists of bran and a smaller quantity of gluten. Dried residues of the steeping liquors and the germ may be added	Crude protein	Moisture Crude fibre Crude ash Crude oil and fat	Crude protein Moisture Crude fibre Crude ash	min. 20.5% max. 13 % max. 11 % max. 9 %

1	2	3	4	5	6	7
2.5.11.	Wheat starch	Virtually pure wheat starch	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 98 % max. 14 % max. 0.6%
2.5.12.	Puffed wheat starch	Virtually pure wheat starch greatly expanded by appropriate heat treatment	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 91 % max. 10 % max. 0.6%
2.5.13.	Pre-gelatinized, partially hydrolyzed wheat starch	Virtually pure wheat starch, largely pre-gelatinized and partially hydrolyzed	Starch Reducing sugars, expressed as glucose	Moisture Crude ash	Reducing sugars, expressed as glucose Moisture Crude ash	min. 28 % max. 10 % max. 1.1%
2.5.14.	Wheat gluten	Dried by-product of the manufacture of wheat starch. It consists principally of gluten obtained during the separation of starch	Crude protein	Moisture Crude ash	Crude protein Moisture Crude ash	min. 80 % max. 12 % max. 1.7%
2.5.15.	Manioc starch	Virtually pure starch obtained from manioc roots (<i>Manihot esculenta</i> Crantz)	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 92 % max. 15 % max. 1.2%
2.5.16.	Puffed manioc starch	Starch obtained from manioc roots, greatly expanded by appropriate heat treatment	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 91 % max. 10 % max. 1.1%
2.5.17.	Potato starch	Virtually pure potato starch	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 98 % max. 20 % max. 1 %

1	2	3	4	5	6	7
2.5.18.	Pre-gelatinized potato starch (expanded)	Virtually pure potato starch, greatly expanded by appropriate heat treatment	Starch	Moisture Crude ash	Starch Moisture Crude ash	min. 96 % max. 10 % max. 1.1%
2.5.19.	Pre-gelatinized, partially hydrolyzed potato starch	Virtually pure potato starch, greatly expanded and partially hydrolyzed	Starch Reducing sugars, expressed as glucose	Moisture Crude ash	Reducing sugars, expressed as glucose Moisture Crude ash	min. 31.5% max. 20 % max. 1.5% x
2.5.20.	Potato protein	Dried by-product of starch manufacture composed mainly of protein substances obtained by the separation of starch	Crude protein	Moisture Crude ash Crude oil and fat Crude fibre	Crude protein Moisture	min. 76 % max. 14 %
2.5.21.	Dried potato pulp	Dried by-product of the manufacture of potato starch	Starch	Moisture Crude ash Crude oil and fat Crude fibre	Starch Moisture Crude fibre	min. 40.5% max. 14 % max. 21 %
2.5.22.	Dextrose (glucose)	Product of the saccharification of starch, consisting of purified, crystallized glucose (with or without water of crystallization)	Glucose	Moisture	Glucose Moisture	min. 99.5% max. 10 % x
2.5.23.	Dextrose molasses	By-product obtained during the crystallization of dextrose	Reducing sugars, expressed as glucose	Moisture Crude ash	Reducing sugars, expressed as glucose Moisture Crude ash	min. 60 % max. 40 % max. 4 % x

1	2	3	4	5	6	7
2.6.	Products and by-products of sugar manufacture					
2.6.1.	Sugar (sucrose)	Beet or cane sugar in solid form	Sucrose	Crude ash	Sucrose min. 97 %	x
2.6.2.	Dried sugar-beet slices	Product obtained by drying slices of washed sugar beet (<i>Beta vulgaris</i> L., ssp. <i>vulgaris</i> var. <i>altissima</i> Doell)	Total sugar, expressed as sucrose	Moisture Crude ash	Total sugar, expressed as sucrose Moisture Crude ash min. 57 % max. 12 % max. 7.5%	
2.6.3.	Dried partially extracted sugar-beet slices	Product obtained by drying washed, partially extracted sugar-beet slices	Total sugar, expressed as sucrose	Moisture Crude ash	Total sugar, expressed as sucrose Moisture Crude ash min. 20.5% max. 13 % max. 7 %	
2.6.4.	Dried plain sugar-beet pulp	By-product of the manufacture of sugar, consisting of pulped and dried sugar-beet slices		Crude fibre	Moisture Crude ash Ash insoluble in HCl max. 13 % max. 8 % max. 3.5%	
2.6.5.	Sugar-beet molasses	By-product consisting of the syrupy residue collected during the manufacture or refining of beet sugar	Total sugar, expressed as sucrose		Total sugar, expressed as sucrose in relation to the product as such min. 45 %	x
2.6.6.	Sugar-cane molasses	By-product consisting of the syrupy residue collected during the manufacture or refining of sugar from sugar cane (<i>Saccharum officinarum</i> L.)	Total sugar, expressed as sucrose		Total sugar, expressed as sucrose in relation to the product as such min. 50 %	x

1	2	3	4	5	6	7
2.7.	Products and by-products of malting, brewing, distilling and fruit processing; dried feed yeasts					
2.7.1.	Barley malt culms	By-product of malting, consisting of dried rootlets and shoots of germinated barley	Crude protein	Moisture Crude ash Crude fibre	Crude protein Moisture Crude fibre Crude ash min. 26.5% max. 12.5% max. 18.5% max. 8.5%	
2.7.2.	Dried yeasts	Yeasts, whether or not mixed, belonging to the families Saccharomycetaceae, Endomycetaceae and Cryptococcaceae, cultivated on the following substrates: beet or core juice or molasses, distillers' or yeast-makers' wash, lactoserum, cereals and products derived from their processing, solutions from the hydrolysis of fibrous material, the cells of which have been killed by drying	Crude protein	Moisture Crude ash Ash insoluble in HCl	Crude protein Moisture Crude ash Ash insoluble in HCl min. 49 % max. 10 % max. 9.5% max. 1.1%	x
2.7.3.	Dried brewers' grains	By-product of brewing obtained by drying residues of malted and unmalted cereals and other starchy matter	Crude protein	Moisture Crude fibre	Crude protein Moisture Crude fibre Crude ash Protein soluble by fermentation min. 23 % max. 12.5% max. 19.5% max. 6.5% min. 16 %	
2.7.4.	Dried distillers' grains	By-product of distilling obtained by drying residues of fermented grain or other starchy matter	Crude protein	Moisture Crude fibre	Crude protein Moisture Crude fibre Crude ash Protein soluble by fermentation min. 23 % max. 12.5% max. 19.5% max. 6.5% min. 16 %	

1	2	3	4	5	6	7
2.7.5.	Dehydrated citrus pulp	By-product obtained during the manufacture of citrus juice		Moisture Crude fibre	Moisture Acidity, expressed as anhydrous citric acid max. 13 % max. 4.6%	
2.8.	Artificially dried agricultural products					
2.8.1.	Dried grass meal	Product obtained by artificially drying young forage plants, the enzymes which activate oxidation being rendered virtually inactive by the drying	Crude protein	Moisture Crude ash Ash insoluble in HCl Crude fibre Carotene Crude oil and fat	Crude protein min. 16 % Carotene min. 0.01% Moisture max. 12 % Crude ash max. 15 % Ash insoluble in HCl max. 3.4 %	
2.8.2.	Dried lucerne meal	Product obtained by artificially drying lucerne <i>Medicago sativa</i> L. and <i>Medicago varia</i> Martyn, the enzymes which activate oxidation being rendered virtually inactive by the drying. This product may contain approximately 20% of grass or clover artificially dried at the same time as the lucerne	Crude protein	Moisture Crude ash Ash insoluble in HCl Crude fibre Carotene Crude oil and fat	Crude protein min. 18 % Carotene min. 0.01% Moisture max. 12 % Crude ash max. 15 % Ash insoluble in HCl max. 3.4 %	
2.8.3.	Dried clover meal	Product obtained by artificially drying young clover <i>Trifolium</i> spp., the enzymes which activate oxidation being rendered virtually inactive by the drying. This product may contain approximately 20% of grass or lucerne artificially dried at the same time as the clover	Crude protein	Moisture Crude ash Ash insoluble in HCl Crude fibre Carotene Crude oil and fat	Crude protein min. 18 % Carotene min. 0.01% Moisture max. 12 % Crude ash max. 15 % Ash insoluble in HCl max. 3.4 %	

1	2	3	4	5	6	7
2.8.4.	Dried tops and leaves of sugar beet	Product obtained by artificially drying tops and leaves of sugar beet, washed, whether or not chopped		Crude protein Total sugar, expressed as sucrose Moisture Ash insoluble in HCl Crude fibre	Moisture Ash insoluble in HCl max. 12 % max. 4 %	
2.8.5.	Jerusalem artichoke chips or Jerusalem artichoke meal	Product obtained by crushing or grinding dried, cleaned tubers of Jerusalem artichokes (<i>Helianthus tuberosus</i> L.)	Inulin	Moisture Crude ash Crude fibre Crude oil and fat Crude protein	Inulin Moisture Crude fibre Crude ash min. 63 % max. 13 % max. 6.5 % max. 4.6 %	
2.8.6.	Sweet potato chips or sweet potato meal	Product obtained by crushing or grinding dried, cleaned tubers of sweet potato (<i>Ipomoea batatas</i> (L.) Poir.)	Starch	Moisture Crude ash Crude fibre Crude oil and fat Crude protein	Starch Moisture Crude fibre Crude ash min. 57.5 % max. 13 % max. 6.5 % max. 4.6 %	
2.8.7.	Manioc meal Manioc chips Manioc flakes Manioc roots	Dried, washed manioc roots, peeled, crushed or ground as required	Starch	Moisture Crude ash Crude fibre Crude oil and fat Crude protein	Starch Moisture Crude fibre Crude ash min. 75 % max. — max. 4.6 % max. 3.5 %	
2.8.8.	Manioc meal, type 55	Unpeeled manioc roots washed, dried and ground	Starch	Moisture Crude ash Crude fibre Crude oil and fat Crude protein	Starch Moisture Crude fibre Crude ash Ash insoluble in HCl min. 63 % max. 13 % max. 9 % max. 6 % max. 3.5 %	

1	2	3	4	5	6	7
2.8.9.	Manioc pulp	Waste from the manufacture of manioc starch, which has been dried and ground	Starch	Moisture Crude ash Crude fibre Crude oil and fat Crude protein	Starch Moisture Crude fibre Crude ash Ash insoluble in HCl	min. 57.5% max. 13 % max. 12.5% max. 6 % max. 2.3%
2.9.	Other products of vegetable origin					
2.9.1.	Crushed locust beans	Product obtained by crushing the dried, stoned fruit of the carob tree (<i>Ceratonia siliqua</i> L.)		Total sugar, expressed as sucrose Moisture Crude ash	Total sugar, expressed as sucrose Moisture Crude ash	min. 35 % max. 14 % max. 5 %
2.9.2.	Vegetable fat or vegetable oil	Product composed entirely or almost entirely of fat or oil of vegetable origin. On organoleptic examination there must be no rancidity		Moisture Acidity index Unsaponifiable matter	Acidity index Unsaponifiable matter in relation to the product as such	max. 12 % max. 3 %
3.	PRODUCTS OF ANIMAL ORIGIN					x
3.1.	Milk products					
3.1.1.	'Spray' skimmed-milk powder, 'hatmaker' or 'roller' skimmed-milk powder	Product obtained by drying skimmed-milk either by vaporization in a current of hot air ('spray' skimmed-milk powder) or by drying over cylinders ('hatmaker' or 'roller' skimmed-milk powder)	Crude protein	Moisture Lactose Crude oil and fat Crude ash	Crude protein Moisture Crude ash Crude oil and fat	min. 33.5% max. 5 % max. 9 % max. 1.6%

1	2	3	4	5	6	7
3.1.2.	Powdered buttermilk	Product obtained by drying buttermilk, either by vaporization in a current of hot air ('spray' powdered buttermilk) or by drying over cylinders ('hatmaker' or 'roller' powdered buttermilk)	Crude protein Crude oil and fat Lactose	Moisture Crude ash	Moisture Crude protein Crude ash	max. 6 % min. 32 % max. 10.5 %
3.1.3.	Powdered whey or whey crumbs	Products obtained by drying whey. The acid whey may be neutralized	Crude protein Lactose	Moisture Crude oil and fat Chlorides, expressed as NaCl Crude ash	Lactose Crude oil and fat Moisture Chlorides, expressed as NaCl	min. 60 % max. 3.3 % max. 8 % max. 4.9 %
3.1.4.	Low-sugar powdered whey	Product obtained by drying whey from which the lactose has been partly extracted	Lactose Crude protein	Moisture Chlorides, expressed as NaCl Crude ash Crude oil and fat	Lactose Moisture Chlorides, expressed as NaCl Crude protein Crude ash	min. 32.5 % max. 8 % max. 6.5 % min. 19.5 % max. 31.5 %
3.1.5.	Powdered whey protein Powdered milk albumin	Products obtained by drying the protein compounds extracted from whey or milk by chemical or physical treatment	Crude protein	Moisture Crude ash Crude oil and fat	Crude protein Moisture	min. 76 % max. 8 %
3.1.6.	Powdered milk casein	Product obtained by drying and precipitating milk casein by means of acids or rennet	Crude protein	Moisture Crude oil and fat	Crude protein Moisture Crude oil and fat	min. 85 % max. 12 % max. 2.3 %
3.2.	Products processed from land animals	Product obtained by drying the blood of slaughtered animals and poultry. This product should be substantially free of foreign matter	Crude protein	Moisture Crude ash	Crude protein Protein soluble by fermentation Moisture Crude ash	min. 89 % min. 80 % max. 10 % max. 5.5 %
3.2.1.	Blood meal					

1	2	3	4	5	6	7
3.2.2.	Meat and bone meal	Product obtained by drying and grinding meat pieces containing a high proportion of bone from warm-blooded land animals. The product should be substantially free of hair, bristle, feathers, horn, hoof, skin and blood and of the contents of the stomach and viscera	Crude protein	Moisture Chlorides, expressed as NaCl Total phosphorus Crude ash Methionine Nitrogen	Crude protein Protein soluble by fermentation Total phosphorus(P) Moisture Crude oil and fat Chlorides, expressed as NaCl	min. 50 % min. 43.5% max. 8 % max. 10 % max. 13.5% max. 2.2%
3.2.3.	Bone meal	Product obtained by drying and grinding bone, with the fat largely removed, from warm-blooded land animals. The product should be substantially free of hair, bristle feathers, horn, hoof, skin and blood, and of the contents of the stomach and viscera. It should also be free of splinters, and may not contain bone fragments with rough surfaces or jagged edges	Crude protein	Moisture Crude ash Total phosphorus Crude oil and fat	Crude protein Total phosphorus(P) Moisture Crude oil and fat	min. 26.5% min. 9 % max. 10 % max. 5.5%
3.2.4.	Meat meal	Product obtained by drying and grinding carcasses and parts of carcasses of warm-blooded land animals, if need be, with the fat removed by a process of extraction. It should be virtually free of hair, bristle, feathers, horn, hoof and skin and of the contents of the stomach and viscera	Crude protein Crude oil and fat	Moisture Total phosphorus Chlorides, expressed as NaCl Ash insoluble in HCl Methionine Nitrogen	Crude protein Protein soluble by fermentation Moisture Crude oil and fat Total phosphorus(P) Chlorides, expressed as NaCl Ash insoluble in HCl	min. 61 % min. 53.5% max. 10 % max. 11 % max. 5.5% max. 2.2% max. 2.2%
3.2.5.	Greaves	Product derived from residues of the manufacture of tallow and other fats of animal origin	Crude protein	Moisture Chlorides, expressed as NaCl Crude oil and fat Crude ash	Crude protein Moisture Chlorides, expressed as NaCl	min. 53.5% max. 10 % max. 2.2%

1	2	3	4	5	6	7
3.2.6.	Dried waste from poultry slaughter. Products with a fat content of more than 12% should be described as 'rich in fat'	Product obtained by drying and grinding waste from slaughtered poultry; it should be substantially free of feathers	Crude protein	Moisture Chlorides, expressed as NaCl Crude oil and fat Crude ash	Crude protein Protein soluble by fermentation Moisture Chlorides, expressed as NaCl Ash insoluble in HCl	min. 61 % min. 49 % max. 10 % max. 2-20 % max. 3-30 % x
3.2.7.	Hydrolyzed feather meal	Product obtained by hydrolyzing, drying and grinding poultry feathers	Crude protein	Moisture Ash insoluble in HCl	Crude protein Protein soluble by fermentation Moisture Ash insoluble in HCl	min. 87 % min. 65 % max. 11 % max. 3-40 % x
3.2.8.	Animal fat	Product composed of fat processed from warm-blooded land animals or from parts thereof. On organoleptic examination, there must be no rancidity	Unsaponifiable matter	Moisture Ash insoluble in HCl Oxidized fatty acids Acidity index	Unsaponifiable matter in relation to the product as such Acidity index	max. 3 % max. 30 % x
3.3.	Products derived from fish or other marine animals	Product obtained by drying and grinding whole fish, or parts thereof, of various species	Crude protein Crude oil and fat	Moisture Chlorides, expressed as NaCl Calcium carbonate Total phosphorus	Crude protein Protein soluble by fermentation Moisture Chlorides, expressed as NaCl Calcium carbonate Ash insoluble in HCl	min. 61 % min. 53-50 % max. 10 % max. 4-40 % max. 2-80 % max. 2-20 % x
3.3.1.	Fish meal (products whose chloride content expressed as NaCl is less than 2 % may be referred to as 'low in salt')					

1	2	3	4	5	6	7
3.3.2.	Cod liver oil	Oil obtained from fresh livers of fish of the cod family (Gadidae). On organoleptic examination there must be no rancidity	Vitamin A	Moisture Acidity index Matter insoluble in ether Unsaponifiable matter	Vitamin A ⁽¹⁾ Moisture Matter insoluble in ether ⁽¹⁾ Unsaponifiable matter ⁽¹⁾ Saponification index Iodine index Acidity index	x
4.	MINERAL SUBSTANCES					
4.1.	Calcium carbonate (the nature of the product (column 3) should be indicated in the name)	Precipitated calcium carbonate, ground limestone, prepared chalk, granulated chalk, ground oyster or mussel shells	Calcium Ash insoluble in HCl		Calcium Ash insoluble in HCl	x
4.2.	Calcium and magnesium carbonate	Natural mixture of calcium carbonate and magnesium carbonate CaCO ₃ + MgCO ₃	Calcium Magnesium		Calcium Magnesium Amount that will pass entirely through a 0.25 mm mesh sieve Ash insoluble in HCl	x
4.3.	Calcareous marine algae (Maerl)	Product of natural origin obtained from calcareous algae, ground or granulated	Calcium Ash insoluble in HCl		Calcium Ash insoluble in HCl	x
4.4.	Magnesium oxide	Technically pure magnesium oxide MgO	Magnesium		Magnesium	x

⁽¹⁾ Contents expressed in relation to the product as such.

1	2	3	4	5	6	7
4.5.	Kieserite	Natural magnesium sulphate $MgSO_4 \cdot H_2O$	Magnesium		Magnesium min. 15 %	x
4.6.	Dicalcium phosphate (the manufacturing process may be indicated in the name)	Technically pure dicalcium phosphate	Total phosphorus Chlorides, expressed as NaCl	Calcium	Total phosphorus min. 16 % Chlorides, expressed as NaCl max. 1 %	x
4.7.	Natural phosphate (products whose fluorine content is not more than 0.1 % may be referred to as 'defluorinated')	Product obtained by grinding natural phosphates, if necessary purified and de- fluorinated to a greater or lesser degree	Total phosphorus	Calcium	Total phosphorus min. 14 %	x
4.8.	De-gelatinized bone meal	De-gelatinized, sterilized, ground bones from which the fat has been removed	Total phosphorus Ash insoluble in HCl	Moisture Calcium	Total phosphorus min. 14.5 % Moisture max. 10 % Ash insoluble in HCl max. 3.3 % Amount that will pass through a 1 mm mesh sieve min. 90 % Nitrogen max. 1.7 %	x
4.9.	Monocalcium phosphate	Virtually technically pure monocalcium phosphate	Total phosphorus	Calcium	Total phosphorus min. 22 % Calcium min. 16 % Chlorides, expressed as NaCl max. 1 %	x

COMMISSION

COMMISSION DIRECTIVE

of 30 November 1976

adapting to technical progress Council Directive 70/220/EEC of 20 March 1970 on the approximation of the laws of the Member States relating to measures to be taken against air pollution by gases from positive-ignition engines of motor vehicles

(77/102/EEC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

air pollution by exhaust gases from positive-ignition engines;

Having regard to the Treaty establishing the European Economic Community,

Having regard to Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers ⁽¹⁾, as amended by the Act of Accession ⁽²⁾, and in particular Articles 11, 12 and 13 thereof,

Having regard to Council Directive 70/220/EEC of 20 March 1970 on the approximation of the laws of the Member States relating to measures to be taken against air pollution by gases from positive-ignition engines ⁽³⁾, as amended by the abovementioned Act of Accession, and in particular Article 5 thereof,

Whereas the programme of action of the European Communities on the environment adopted on 22 November 1973 provides for amendments to Directives adopted so as to take into account the latest scientific progress, with particular reference to

Whereas the technical progress made in the construction of positive-ignition engines since Council Directive 70/220/EEC laid down the permissible limits for carbon monoxide and unburnt hydrocarbon emissions from these engines, which limits were made more stringent by Council Directive 74/290/EEC of 28 May 1974 ⁽⁴⁾, also enables permissible limits to be laid down for nitrogen oxide emissions;

Whereas it is essential that emissions of this latter pollutant from motor vehicles should be restricted with immediate effect in order to establish a basis for coherent Community action to reduce the limits for the three pollutants which are the subject of the EEC type-approval procedure for these vehicles; whereas in order to protect public health and the environment it is advisable to envisage a further reduction of the limits of these pollutants as soon as the work now in progress has given concrete results;

Whereas the measures provided for in this Directive are in accordance with the opinion of the Committee on the Adaptation to Technical Progress

⁽¹⁾ OJ No L 42, 23. 2. 1970, p. 1.

⁽²⁾ OJ No L 73, 27. 3. 1972, p. 115.

⁽³⁾ OJ No L 76, 6. 4. 1970, p. 1.

⁽⁴⁾ OJ No L 159, 15. 6. 1974, p. 61.

of the Directives on the Removal of Technical Barriers to Trade in the Motor Vehicle Sector,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Annexes I and III to Council Directive 70/220/EEC on the approximation of the laws of the Member States relating to measures to be taken against air pollution by gases from positive-ignition engines of motor vehicles, as amended by Council Directive 74/290/EEC of 28 May 1974, are hereby amended in accordance with the Annex to this Directive.

Article 2

1. From 1 April 1977, the Member States shall neither, on grounds relating to air pollution by gases from an engine:

- refuse to grant EEC type-approval, or to issue the documents referred to in the second indent of Article 10 (1) of Directive 70/156/EEC, or to grant national type-approval of a type of motor vehicle;
- nor prohibit the entry into service of such vehicles;

where the level of gaseous pollutants emitted from this type of motor vehicle or from such vehicles meets the requirements of Directive 70/220/EEC, as last amended by this Directive.

2. From 1 October 1977, Member States:

— shall no longer issue the document provided for in the second indent of Article 10 (1) of Directive 70/156/EEC in respect of a type of motor vehicle which emits gaseous pollutants at levels which do not meet the requirements of Directive 70/220/EEC, as last amended by this Directive;

— may refuse national type-approval of a type of motor vehicle which emits gaseous pollutants at levels which do not meet the requirements of Directive 70/220/EEC, as last amended by this Directive.

3. From 1 October 1980, Member States may prohibit the entry into service of vehicles which emit gaseous pollutants at levels which do not meet the requirements of Directive 70/220/EEC, as last amended by this Directive.

4. By 1 January 1977, Member States shall put into force the requirements needed in order to comply with this Directive and shall forthwith inform the Commission thereof.

Article 3

This Directive is addressed to the Member States.

Done at Brussels, 30 November 1976.

For the Commission

Finn GUNDELACH

Member of the Commission

ANNEX

Amendments to the Annexes to Directive 70/220/EEC

ANNEX I: DEFINITIONS, APPLICATION FOR EEC TYPE-APPROVAL AND TEST SPECIFICATIONS

Item 1.4 shall be replaced by the following:

'1.4. Gaseous pollutants

"Gaseous pollutants" means carbon monoxide, hydrocarbons and nitrogen oxides, the latter expressed as nitrogen dioxide (NO₂) equivalents.'

The second sentence of item 3.2.1.1.4 shall be replaced by the following:

'In each test, the mass of the carbon monoxide, the mass of the hydrocarbons and the mass of the nitrogen oxides obtained must be less for a vehicle of given reference weight, than the amounts shown in the table below:'

For the table a fourth column shall be added as follows:

Mass of nitrogen oxides expressed as NO ₂ equivalent (per test in g) L ₃
10
10
10
12
14
14.5
15
15.5
16

New item 3.2.1.1.4.1 shall be added after item 3.2.1.1.4:

'3.2.1.1.4.1. However, until 1 October 1979, for application to vehicles other than those of category M₁ and to vehicles equipped with automatic transmissions the limits for nitrogen oxide emissions given in the table of item 3.2.1.1.4 shall be multiplied by a factor 1.25.'

Existing item 3.2.1.1.4.1 shall become item 3.2.1.1.4.2.

Items 3.2.1.1.5.1 and 3.2.1.1.5.2.

The words 'both the pollutants' shall be replaced by 'three pollutants'.

Item 5.1.1.1.

For the table a fourth column shall be added as follows:

Mass of nitrogen oxides expressed as NO₂ equivalent
(per test in g)
L₃

12
12
12
14.4
16.8
17.4
18
18.6
19.2

New item 5.1.1.1.1 shall be added after item 5.1.1.1:

'5.1.1.1.1. However, until 1 October 1979, for application to vehicles other than those of category M₁ and to vehicles equipped with automatic transmissions the limits for nitrogen oxide emissions given in the table of item 5.1.1.1 shall be multiplied by a factor 1.25.'

ANNEX III: TYPE I TEST

The first sentence of item 3.2.1 shall be replaced by:

'the connecting tubes shall be made of stainless steel and shall, so far as possible, be provided with rigid connections.'

Item 3.2.3.

The words 'and with the reduction to a minimum of condensation on the sides of the sampling bag or bags' shall be deleted.

New items 3.2.4 and 3.2.5 shall be added after item 3.2.3:

'3.2.4. A cooling condenser shall be located between the exhaust pipe of the engine and the inlet of the bag(s) in such a way that gas temperature t_G at the exit of the condenser is maintained within the following limits:

$$5^{\circ}\text{C} \leq t_G \leq 17^{\circ}\text{C}$$

The cooling system must be designed in such a way as to avoid any entrainment of condensed water by the gases flowing through it. This will enable the humidity of the gases in the sampling bag to be maintained at less than 83 % at 20 °C.

3.2.5. The total volume of the collecting system, excluding the bag, shall not exceed 0.08 m³. The volume of the bag spreader pipe shall be less than 0.03 m³.'

Existing items 3.2.4 and 3.2.5 become new items 3.2.6 and 3.2.7.

The first sentence of item 3.3.2 shall be replaced by:

‘The carbon monoxide and hydrocarbon analysers shall be of the non-dispersive type with absorption in the infra-red.’

New items 3.3.3 to 3.3.3.3 shall be added after item 3.3.2:

‘3.3.3. The nitrogen oxides shall be analysed as follows:

3.3.3.1. The gases contained in the bag shall pass through a converter which reduces the nitrogen dioxide (NO_2) to nitric oxide (NO).

3.3.3.2. The nitric oxide (NO) content of the gases emerging from the converter shall be determined by means of a chemiluminescence analyser.

3.3.3.3. No gas-drying device (ice-trap) must be used upstream of the analyser.’

New item 3.5.7 shall be added after item 3.5.6:

‘3.5.7. The converter must be least 90 % efficient.’

Existing items 3.5.7 and 3.5.8 shall become items 3.5.8 and 3.5.9.

Item 4.5 shall be replaced by the following:

‘4.5. Conditioning of bag(s).’

In the first sentence of item 4.5.1 the words ‘the bags shall...’ shall be replaced by ‘the bag(s) shall...’.

New item 4.5.3 shall be added after item 4.5.2:

‘4.5.3. Air must be blown into the bag(s) before each test in order to remove any residual moisture.’

Items 4.6.1 to 4.6.1.3 shall be added after item 4.6:

‘4.6.1. Check on converter efficiency
The efficiency of the NO_2 -NO converter shall be checked by one of the following two methods:

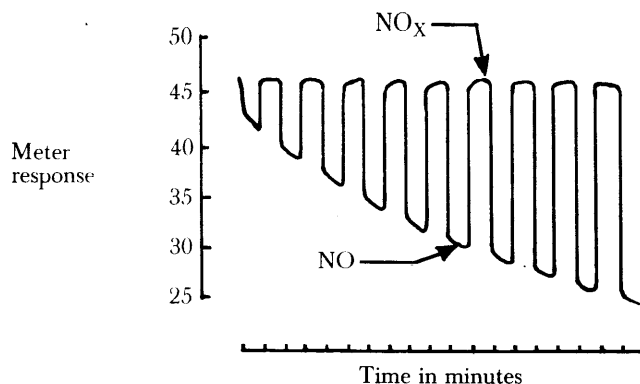
4.6.1.1. Method “A”

4.6.1.1.1. A sampling bag which has not already been used to collect samples of exhaust gases shall be filled with air (or oxygen) and NO reference gas, which will be metered in such a way as to enable a mixture lying within the measuring range of the analyser to be obtained. Enough oxygen shall be added to enable a good proportion of the NO to be converted into NO_2 .

4.6.1.1.2. The bag shall be shaken briskly and be immediately connected to the sample feed device on the analyser. The NO and NO_x concentrations shall be measured

in turn at one-minute intervals by alternately passing the sample through the converter and through the bypass tube. After several minutes the presence of NO and NO_x will be recorded as shown in the diagram below if the converter is functioning properly. Although the quantity of NO₂ will be increasing, the sum NO_x = NO + NO₂ should remain constant. A reduction in the amount of NO_x as the operations proceed would be a sign that the efficiency of the converter was decreasing and the cause would have to be determined before the device was used.

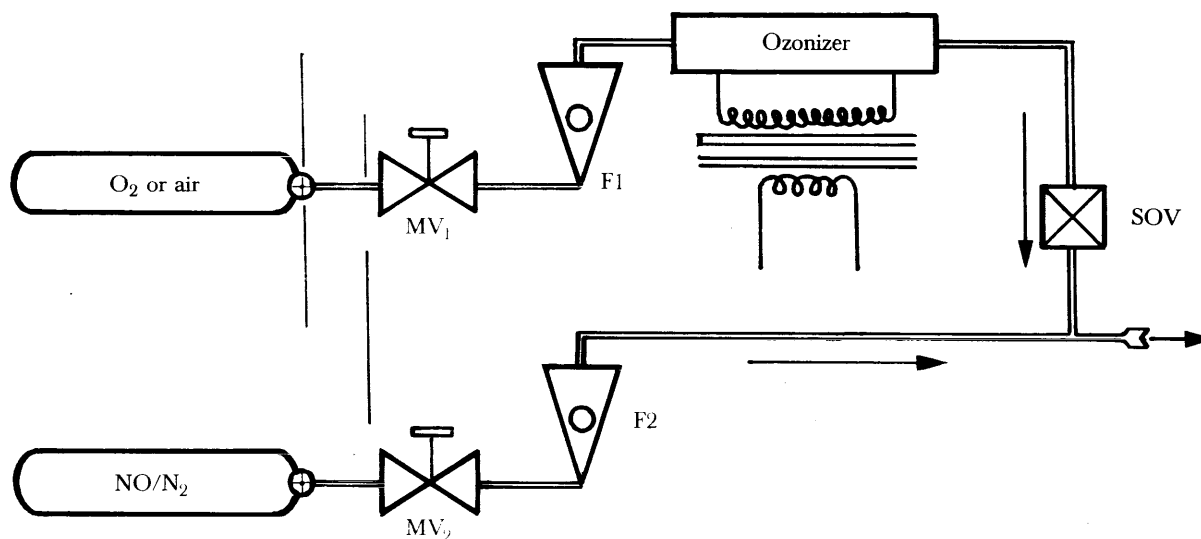
Response rate of the check on converter efficiency



4.6.1.2. Method "B"

The efficiency of the converter can be verified with the aid of an ozonizer in accordance with the diagram and method set out below:

Device for measuring converter efficiency



- 4.6.1.2.1. The NO analyser shall be connected to a T tube receiving on one side a supply of the calibration gas (mixture of NO in N₂ in a proportion corresponding to about 80% of the full-scale value of the instrument) and from the other side a supply of ozonized oxygen or air (depending on the NO concentration). The inlet pipe for the supply of O₂ shall be provided with a shut-off valve (SOV) and each of the inlet pipes shall also be connected to a metering valve (MV) and a flowmeter (F).

- 4.6.1.2.2. At the beginning of the check the SOV shall be closed and MV2 set in such a way as to obtain a steady reading from the chemiluminescent instrument set to "bypass". The device shall be spanned and calibrated in such a way that it correctly indicates the concentration of the gas sample used. Note reading (A).
- 4.6.1.2.3. With the ozonizer off the SOV shall be opened and the O₂ flow rate regulated in such a way as to reduce the figure indicated by the analyser by about 10%. This figure (B) shall be noted. The ozonizer shall be switched on and its voltage regulated so that the instrument reading falls to about 20% of the initial value obtained with the non-diluted gas. The figure indicated (C) shall be noted.
- 4.6.1.2.4. The analyser shall be switched to "convert" and the reading (D) shall again be noted. The ozonizer shall be switched off and the new reading (E) noted. The SOV shall be closed and the new reading (F) of the instrument noted. The latter reading must be identical with the initial value (A) unless the gas sample contains NO₂, in which case the figure indicated will be higher.
- 4.6.1.2.5. The efficiency of the converter (expressed as a percentage) shall be given by
- $$\frac{D - C}{E - C} \times 100.$$
- 4.6.1.3. The efficiency of the converter must be checked at least once a week and preferably once a day.'

Items 4.6.1 and 4.6.2 shall become items 4.6.2 and 4.6.3.

The following sentence shall be added to item 7.1:

'For the purpose of determining corrected volume V' in the case of nitrogen oxides, value PH shall be taken to be equal to O.'

New item 7.2 shall be added after item 7.1:

7.2. Correction of "nitrogen dioxide" content

- 7.2.1. The nitrogen dioxide content of the gases shall be corrected by means of following formula:

$$C_c = \frac{1}{1 - 0.0329 (H - 10.7)} C_M$$

C_M = the measured nitrogen dioxide content.

C_c = the corrected nitrogen dioxide content.

H = the absolute humidity expressed in grams of water per kilogram of dry air.

Absolute humidity H is given by the following formula:

$$H = \frac{6.2111 R_a \times P_d}{P_B - P_d \times \frac{R_a}{100}}$$

R_a = the relative humidity of the ambient air in %.

P_d = the saturated-water-vapour pressure at ambient temperature measured with a dry-bulb thermometer.

P_B = the barometric pressure.

Pressures P_d and P_B shall be expressed in the same units.'

Existing item 7.2 shall be replaced by new item 7.3:

'7.3. Mass of gaseous pollutants contained in each bag

The mass of the gaseous pollutants contained in each bag shall be determined by means of the product of $d \times C \times V$ where C is the content per unit volume, d the density of the gaseous pollutants under consideration and V the corrected volume. V shall be replaced by V' in the case of nitrogen oxides.

For carbon monoxide, d = 1.250.

For hydrocarbons, d = 3.844 (hexane).

For nitrogen oxides, d = 2.05 (NO_2).'

Existing item 7.3 shall become new item 7.4.
