

Working Translation

Ordinance redefining best practice in the application of fertiliser¹

of 26 May 2017

The Federal Ministry of Food and Agriculture decrees the following on the basis of

- section 3 subsection 4, first sentence, in conjunction with the second sentence numbers 1 and 2 and with subsection 6 no. 1, also in conjunction with section 15 subsection 6, first sentence, of the Fertiliser Act of 9 January 2009 (Federal Law Gazette I p. 54, 136), with section 3 subsections 4 and 6 amended by section 1 no. 3 letter b of the Act of 5 May 2017 (Federal Law Gazette I p. 1068), in agreement with the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety;
- Section 3 subsection 4, first sentence, in conjunction with the second sentence no. 3, with subsection 5 and with subsection 6 no. 2, also in conjunction with section 15 subsection 6, first sentence, of the Fertiliser Act of 9 January 2009 (Federal Law Gazette I p. 54, 136), with section 3 subsections 4 - 6 amended by section 1 no. 3 letter b of the Act of 5 May 2017, (Federal Law Gazette I p. 1068), in agreement with the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety;
- Section 3 subsection 4, first sentence, in conjunction with the second sentence no. 3; section 4 and section 5 subsection 2, no. 1, in each case also in conjunction with section 15 subsection 6, first sentence, of the Fertiliser Act of 9 January 2009 (Federal Law Gazette I p. 54, 136), with section 3 subsection 4 amended by section 1 no. 3 letter b of the Act of 5 May 2017, (Federal Law Gazette I p. 1068) and section 4, last amended by section 1 no. 5 of the Act of 5 May 2017 (Federal Law Gazette I p. 1068), in agreement with the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety;
- Section 5(2) and section 7 of the Fertiliser Act of 9 January 2009 (Federal Law Gazette I p. 54, 136), with

¹ Notified as per Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (OJ L 241 of 17/09/2015, p. 1).

section 7 amended by section 1 no. 3 of the Act of 15 March 2012 (Federal Law Gazette I p. 481);

Section 4 subsection 1 no 2 of the Agricultural Support Scheme Obligations Act of 2 December 2014 (Federal Law Gazette I p. 1928) in agreement with the Federal Ministry of Finance and the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety:

Section 1

Ordinance on the Application of Fertilisers, Soil Improvers, Growing Media and Plant Strengtheners according to the Principles of Good Fertilisation Practice (Fertiliser Application Ordinance (Düngeverordnung – DüV)²

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² This Ordinance shall also serve to transpose the following directives:

1. Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375 of 31/12/1991, p. 1), last amended by Regulation (EC) 1137/2008 (OJ L 311 of 21/11/2008, p. 1);
2. Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants (OJ L 309 of 27/11/2001, p. 22), last amended by Directive 2013/17/EU (OJ L 158 of 10.6.2013, S. page 193).

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Section 1

Scope of application

(1) This Ordinance shall govern:

1. good agricultural practice in the use of fertilisers, soil improvers, growing media and plant strengtheners on agricultural land;
2. the reduction of substance-related risks arising from the use of fertilisers, soil improvers, growing media and plant strengtheners on agricultural land and on other land in so far as expressly stipulated in this Ordinance.

(2) The requirements of this Ordinance shall also apply to the substances referred to in subsection 1 that may be used pursuant to section 3 subsection 1, third sentence, of the Fertiliser Act and may be marketed pursuant to section 5 subsection 1, second sentence, of the Fertiliser Act.

Section 2

Definitions

The following definitions shall apply for the purposes of this Ordinance:

1. Agricultural land:

arable land used for crop-growing, land used for horticulture, grassland and permanent pastureland, orchards, land under short-rotation forestry to produce biomass for energy, vineyards, land used for hop-growing, and tree nurseries; agricultural land also includes land temporarily

set aside in so far as it is treated with fertilisers, soil improvers, growing media or plant strengtheners;

2. Land parcel:

a uniformly managed, contiguous area of land planted with a single plant species or plant species with similar nutrient requirements or intended for that purpose;

3. Management unit:

two or more land parcels with similar local conditions, uniformly managed and used to grow a single plant species or plant species with similar nutrient requirements, or intended for that purpose;

4. Fertilisation year:

twelve-month period to which management of the majority of the agricultural land relates, in particular with regard to the associated use of fertilisers;

5. Fertilisation:

input of plant nutrients using fertilisers, soil improvers, growing media and plant strengtheners to produce crops and to preserve soil fertility;

6. Nutrient input:

the sum of the nutrients from the application of fertilisers and from non-fertiliser nutrient inputs;

7. Nutrient removal:

the quantity of nutrients removed from the agricultural land in primary-harvest produce and secondary-harvest produce or by grazing;

8. Nutrient requirement:

the quantity of nutrients needed to attain a certain yield or certain quality with due regard given to the site and soil conditions;

9. Fertiliser requirement:

quantity of nutrients needed to meet the nutrient requirement of a specific crop after deducting other available quantities of nutrients and after taking into account the soil nutrient supply;

10. Significant quantity of nutrients:

a nutrient input exceeding 50 kg nitrogen (total nitrogen) or 30 kg phosphate (P₂O₅) per hectare per year;

11. Significant nutrient content:

more than 1.5 percent dry weight total nitrogen content or more than 0.5 percent dry weight phosphate content;

12. Available nitrogen:

nitrogen dissolved in water or in 0.0125 molar calcium chloride solution;

13. Significant content of available nitrogen:
more than 10 percent content dissolved in water or in 0.0125 molar calcium chloride solution with more than 1.5 percent dry weight total nitrogen content;
14. Surface waters:
waters within the meaning of section 3 no. 1 of the Federal Water Act (Wasserhaushaltsgesetz);
15. Groundwater:
groundwater within the meaning of section 3 no. 3 of the Federal Water Act (Wasserhaushaltsgesetz);
16. Batch cultivation of vegetable crops:
staggered cultivation of the same vegetable over time during the vegetation period;
17. Farm operator:
a natural or legal person, or an association or group of persons without legal personality, that operates a farm;
18. Farm:
the entirety of units within the territory of the Federal Republic of Germany that are used for activities governed by this Ordinance and managed by the proprietor of the enterprise.

Agricultural land within the meaning of the first sentence no. 1 does not include:

1. land used for closed or offland cultivation systems;
2. land in greenhouses or under stationary plastic tubes, insofar as a leaching of nutrients is prevented by a controlled supply of water.

Section 3
Principles
for the application
of fertilisers, soil improvers,
growing media and plant strengtheners

(1) The application of fertilisers, soil improvers, growing media and plant strengtheners shall be directed towards balancing the expected nutrient requirement of the crops with the nutrient supply from the soil and from fertilising, taking account of site conditions. The time of the application and the quantity applied shall, in respect of the substances referred to in the first sentence, be selected in such a way that the nutrients that are or become available do so at a time and in quantities that meet the nutrient requirements of the crops and avoid input into surface waters and groundwater. The outcomes of regional field trials shall also be taken into account in this regard for validation purposes. Requirements for compliance with site-related soil fertility shall also be taken into account.

(2) Before spreading significant quantities of nitrogen or phosphate in the form of fertilisers, soil improvers, growing media or plant strengtheners, the farm operator shall determine the fertiliser requirement of the crop in respect of each land parcel or each management unit, in accordance with section 4. The first sentence shall not apply to land or farms referred to in section 8 (6)

or, in the case of phosphate, to land parcels that are smaller than one hectare. By way of derogation from the first sentence, multiple land parcels and management units, each smaller than 0.5 hectares, may, in respect of the cultivation of vegetable and strawberry crops, be combined in the case of nitrogen for the purposes of determining fertiliser requirement, up to a maximum area of two hectares. Furthermore, by way of derogation from the first sentence, in batch cultivation of vegetable crops, the fertiliser requirement shall be determined up to three times at intervals of a maximum of six weeks each, and in batch cultivation on combined parcels or units for at least one of the batch-grown vegetable crops.

(3) The fertiliser requirement determined in accordance with subsection 2, first sentence, shall not be exceeded during the planned fertilising operation. Staggered fertilising shall be permissible. By way of derogation from the first sentence, the fertiliser requirement determined as per the first sentence may only be exceeded when spreading fertiliser, soil improvers, growing media and plant strengtheners insofar as there is an increased fertiliser requirement on account of circumstances occurring subsequently, in particular crop development or weather conditions. In the case described in the third sentence, the farm operator is, prior to spreading the substances referred to therein,

1. to determine once again the fertiliser requirement of the crop for each parcel or each management unit, taking into account the stipulations of section 4 and
2. according to the stipulations of the authority competent under Land law.

The first sentence and subsection 2, second to fourth sentences, shall apply accordingly in the case described in the fourth sentence

(4) Fertilisers, soil improvers, growing media and plant strengtheners may only be spread if, prior to application, their quantity of total nitrogen, available nitrogen or ammoniacal nitrogen and total phosphate:

1. is known to the farm operator on account of prescribed labelling;
2. has been determined by the farm operator based on data obtained from the authority that is competent under Land law; or
3. has been established by or on behalf of the farm operator using scientifically recognised measuring methods.

With regard to determining the content, as referred to in the first sentence, no. 2, of livestock manure or fertiliser consisting of digestate from a biogas plant, the figures set out in Annex 1 Table 1 and Annex 2 Rows 5 to 9 Columns 2 and 3 are to be used as a minimum.

(5) Nitrogen utilisation shall be assumed to be as follows in the year of spreading:

1. in the case of mineral fertilisers, the full quantities of nitrogen in the fertilisers;
2. in the case of organic and organic-mineral fertilisers, the values as per Annex 3, but no less than the available nitrogen or ammoniacal nitrogen content determined as per subsection 4.

For fertilisers not listed in Annex 3, the figures to be assumed in the case of the first sentence 1 no. 2 shall be requested from the authority competent under Land law.

Deductions for spreading losses shall not exceed the figures resulting from Annex 2 Rows 5 to 9 in the case of livestock manure or fertilisers consisting of digestate from a biogas plant and shall not exceed ten percent of the total nitrogen content known, determined or established in accordance with subsection (4) in the case of other organic or organic-mineral fertilisers.

(6) On land parcels where soil analysis in accordance with section 4 (4), first sentence, no. 2 has shown the (weighted) average phosphate content to exceed 20 mg phosphate per 100 g soil using calcium-acetate-lactate (CAL) extraction, 25 mg phosphate per 100 g soil using double lactate (DL) extraction or 3.6 mg phosphorus per 100 g soil using electro-ultrafiltration (EUF), phosphate fertilisers may be applied up to a maximum of the expected phosphate removal; under crop rotation, the basis for the expected phosphate removal may not exceed a period of three years. If harmful changes to waters that result from the spreading of phosphate fertilisers, in accordance with the first sentence, are identified, the authority competent under Land law may, on a case-by-case basis, issue the farm operator with an order that, by way of derogation from the first sentence, restricts the quantity of phosphate that is permitted to be applied, or prohibits the spreading of phosphate fertilisers completely.

Section 4

Determination of the nitrogen and phosphate fertiliser requirement

(1) The nitrogen fertiliser requirement shall, in the case of arable land, be determined as a location-specific maximum limit, on the basis of the following stipulations and of tables 1 to 7 in Annex 4. The following factors, which affect the fertiliser requirement, shall be taken into account in determining this requirement:

1. the nitrogen requirement figures set out in Annex 4 Table 2 for the arable crops listed therein; these nitrogen requirement figures shall be adjusted in accordance with Annex 4 Table 3 if the average actual yield of the cultivated crops over the last three years differs from the yield given in Annex 4 Table 2;
2. the nitrogen requirement figures set out in Annex 4 Table 4 for the vegetable crops listed therein; these nitrogen requirement figures shall be adjusted in accordance with Annex 4 Table 5 if the average actual yield of the cultivated crops over the last three years differs from the yield given in Annex 4 Table 4; if crops are covered with film or fleece for crop advancement, the nitrogen requirement figures may be increased by a maximum of 20 kg nitrogen per hectare; if different crops are cultivated on parcels or units combined in accordance with section 3 (2), third sentence, an average nitrogen requirement figure may be calculated or the figures may be determined for three vegetable crops with different nitrogen requirement figures;

3. the available quantity of nitrogen in the soil determined in accordance with subsection (4);
4. the additional quantity of nitrogen that is available from the soil reserve during growth of the respective crop due to the influence of local conditions – in particular the climate, soil class and soil type – as given in Annex 4 Table 6;
5. the residual nitrogen from the application of organic or organic-mineral fertilisers in the previous year, in the form of a deduction equal to ten percent of the total nitrogen quantity applied with such fertilisers; in the case of the spreading of compost as per section 6 (4), second sentence, for the following three years in the form of an annual deduction equal to four percent of the total nitrogen quantity applied with such compost in the first year and to three percent in each of the two subsequent years;
6. for arable and vegetable crops, the residual nitrogen from previous crops and intercrops, released during growth of the respective crop as given in Annex 4 Table 7; or, for vegetable crops, the residual nitrogen from a previous crop in the same year as given in Annex 4 Table 4 Column 5.

By way of derogation from the first and second sentences, the authority competent under Land law may permit other methods or procedures for determination of the fertiliser requirement provided that they do not result in a fertiliser requirement that is higher than that determined in accordance with the first and second sentences. In the case of crops not covered by the first sentence in conjunction with the second sentence, then the first to third sentences shall apply accordingly in respect of determining the nitrogen fertiliser requirements. Use is to be made in this regard of the nitrogen requirement figures published by the authority that is competent under Land law.

(2) The nitrogen fertiliser requirement is, in the case of grassland, permanent pastures and multi-cut fodder crops, to be determined as a location-specific maximum limit on the basis of the following stipulations and Annex 4 Tables 8 to 12. The following factors, which affect the fertiliser requirement, shall be taken into account in determining this requirement:

1. the nitrogen requirement figures set out in Annex 4 Table 9: the nitrogen requirement figures are to be adjusted in accordance with Annex 4 Table 10 if the average actual yield over the last three years differs from the figures given in Annex 4 Table 9; insofar as the average actual quantity of raw protein content over the last three years is known and deviates from the figures set out in Annex 4 Table 9, the nitrogen requirement figures may also be adapted in accordance with Annex Table 10, depending on the raw protein content;
2. the residual nitrogen from the soil reserve as given in Annex 4 Table 11;
3. the residual nitrogen from legume nitrogen fixation as given in Annex 4 Table 12;
4. the residual nitrogen from the application of organic or organic-mineral fertilisers in the previous year, in the form of a deduction equal to ten percent of the quantity of total nitrogen applied.

Subsection 1, third sentence, shall apply *mutatis mutandis*.

(3) The phosphate fertiliser requirement shall be determined with reference to the following factors:

1. the phosphate requirement of the crop for the yield and quality expected given the site and growing conditions;
2. the available quantity of phosphate in the soil determined in accordance with subsection 4 and the calculated nutrient requirement.

The requirement in accordance with the first sentence may also be determined on the basis of the crop rotation.

(4) Prior to spreading significant quantities of nutrients, the farm operator is to determine the nutrient quantities available in the soil:

1. in the case of nitrogen, for each land parcel or each management unit – except grassland, permanent pastures and land under multi-cut fodder crops – for the time when the fertiliser is applied but no less than once a year;
 - a) by studying representative samples; or
 - b) in accordance with the recommendations of the authority competent under Land law or of an advisory body recommended by the competent authority;
 - aa) by using test results from similar locations; or
 - bb) by using calculation and estimation methods based on agricultural knowledge;
2. in the case of phosphate, on the basis of an examination of the representative soil samples that are to be taken, usually as part of a crop rotation but no less than every six years, for each land parcel measuring one hectare or more. This does not include land as referred to in section 8 (6) no. 2.

The first sentence, no. 1 (b) shall not apply to the cultivation of vegetable crops cultivated following a previous vegetable crop in the same year; in such cases, the available nitrogen quantity in the soil is to be determined by testing representative samples. Sampling and testing shall be conducted in accordance with the provisions of the authority competent under Land law.

Section 5

Special requirements for the application of nitrogen or phosphate fertilisers, soil improvers, growing media and plant strengtheners

(1) The spreading of nitrogen or phosphate fertilisers, soil improvers, growing media or plant strengtheners shall be prohibited if the soil is flooded, waterlogged, frozen or covered in snow. By way of derogation from the first sentence, lime fertilisers with less than two percent phosphate content may be spread on frozen soil provided that there is no risk of run-off into surface waters or onto neighbouring land. Furthermore, by way of derogation from the first sentence, the substances referred to therein may be used to spread up to 60 kg total nitrogen per hectare on frozen soil if:

1. the soil becomes absorbent due to thawing on the day of spreading;

2. there is no risk of run-off into surface waters or onto neighbouring land;

3. the soil has, due to the undersowing of a winter crop or of intercrops in autumn, vegetation cover or the land concerned comprises grassland or permanent pasture; and

4. there would otherwise be a risk of soil compaction or structural damage from the passage of vehicles.

By way of derogation from the third sentence, more than 60 kg total nitrogen per hectare may, subject to the requirements in the third sentence, numbers 2 to 4, be spread with fertilisers consisting of solid dung from hooved or cloven-hooved animals or of compost.

(2) When spreading nitrogen or phosphate fertilisers, soil improvers, growing media and plant strengtheners:

1. any direct input and any run-off of nutrients into surface waters is to be avoided; and
2. it is to be ensured that there is no direct input and no run-off of nutrients onto neighbouring land, and in particular into natural habitats of conservation value.

In the case of the first sentence, no. 1, the requirement is to be met by maintaining a distance of at least 4 m, depending on the spreading method, between the edge of the application area, as determined by the spreading width, and the top of the slope leading down to the respective surface water body. By way of derogation from the first sentence, no. 1, in conjunction with the second sentence, the distance to be maintained is to be at least 1 m if the equipment used to spread the substances referred to in the first sentence has a spreading width equal to its working width or has a boundary spreading device. The spreading of substances referred to in the first sentence shall be prohibited within 1 m of the top of the slope leading down to a surface water body.

(3) To prevent run-off into surface waters, it shall be prohibited to apply nitrogen fertilisers, phosphate fertilisers, soil improvers, growing media or plant strengtheners within 5 m of the top of a slope leading down to a surface water body if the adjoining land has, within 20 m of the top of the slope, an average incline of at least ten percent (steeply sloping land). Furthermore, the substances referred to in the first sentence may only be spread on steeply sloping land at a distance of between 5 m and 20 m from the top of the slope as follows:

1. on unsown arable land, only if the spread material is immediately worked in;
2. on sown arable land
 - a) with row crops (distance between rows at least 45 centimetres) – only when using mature undersown crops or when the fertiliser is immediately worked into the soil;
 - b) with crops other than row crops under (a), only if the crop is sufficiently advanced; or

c) Following application of mulch or direct seeding.

Subsections 1 and 2 shall remain unaffected.

(4) Subsections 2 and 3 shall not apply to water bodies insofar as the latter are exempted from the provisions of the Federal Water Act (Wasserhaushaltsgesetz) by section 2 subsection 2 of that Act.

(5) Rules regarding distances and land-management practices contained in water management law that extend beyond the provisions of subsections 2 and 3 shall remain unaffected.

Section 6

Additional requirements

for the application of certain fertilisers

(1) Anyone who spreads organic or organic-mineral fertilisers, including farm manure, with significant available nitrogen or ammoniacal nitrogen content, on unsown arable land shall work the fertilisers in without delay and at the latest within four hours of the commencement of spreading. The first sentence shall not apply to:

1. solid dung of hooved or cloven-hooved animals;
2. compost; or
3. organic or organic-mineral fertilisers with an ascertained dry weight content of less than two percent.

The time limit, as per the first sentence, for working in the fertilisers may only be exceeded if it cannot be complied with because the ground is impassable due to unforeseeable weather conditions arising after spreading. In the case of the third sentence, the fertiliser must be worked in without delay once the ground is passable again.

(2) Urea as a fertiliser may, from 1 February 2020, only be spread insofar as a urease inhibitor is added to it or is worked in without delay or at the latest within four hours of spreading.

(3) From 1 February 2020, in the case of sown arable land, liquid organic and liquid organic-mineral fertilisers, including liquid farm manure, with significant available nitrogen or ammoniacal nitrogen content, may only be spread in strips on the soil or directly worked into the soil. In the case of grassland, permanent pastures and multi-cut fodder crops, the requirements of the first sentence shall apply from

1 February 2025. By way of derogation from the first and second sentences, the authority competent under Land law may permit the spreading of the substances referred to in the first sentence by other methods, provided that these other methods result in similarly low ammonia emissions to those resulting from the methods referred to in the first sentence. Furthermore, the authority competent under Land law

may permit exemptions from the requirements of the first and second sentences insofar as compliance with these requirements and spreading by other methods, as referred to in the third sentence, is impossible or unreasonable due to the specific natural or agricultural structure of the farm. There shall in particular be a case for exemption as per the fourth sentence if use of the equipment needed to comply with the requirements is ruled out for safety reasons.

(4) Nutrients from organic and organic-mineral fertilisers, including farm manure, including in mixtures, may, without prejudice to

the provisions contained in sections 3 and 4, only be applied such that the quantity of total nitrogen applied does not exceed, on average over the farm's agricultural land, the 170 kg total nitrogen per hectare per year. By way of derogation from the first sentence, the quantity of total nitrogen applied may not, in the case of compost fertiliser, exceed 510 kg total nitrogen per hectare over a three-year period, taken as an average over the farm's agricultural land. The quantity of nitrogen applied is to be determined based on the content known, determined or established as per section 3 (4); in the case of livestock manure produced on the farm, this shall include grazing and, in the case of fertilisers consisting of digestate from a biogas plant, a minimum of the figures set out in Annex 1 Table 1 and Annex 2 Rows 5 to 9 Column 2 or 3 shall be used. In the case of livestock manure produced on the farm, other figures may be used:

1. if livestock are kept that are not listed in Annex 1 Table 1 and Annex 2; or
2. if the farm operator provides evidence to the authority competent under Land law that the quantity of nitrogen applied differs – in particular as a result of special livestock management or feeding methods.

Land used for spreading in accordance with subsection (5) are to be deducted from the area that is to be included in the calculation of the average quantity per unit area prior to this calculation being made. In the case of greenhouse cultivation, the restriction in the first sentence shall only apply to nitrogen from livestock manure.

(5) For the spreading of livestock manure, the authority competent under Land law may, on application, approve exemptions from the restriction under Annex III subsection 2 paragraph 2, first sentence, of Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31.12.1991, p. 1), as last amended by Regulation (EC) 1137/2008 (OJ L 311, 21.11.2008, S. p. 1), provided that:

1. the European Commission, having regard to Directive 91/676/EEC, in particular to Annex III (2) paragraph 3 thereof, has adopted a decision authorising derogation;
2. the Federal Ministry of Food and Agriculture (the Federal Ministry) has published the decision in the Federal Gazette; and
3. the provisions of the decision are complied with in the approval.

The Federal Ministry shall publish any amendment to and any repeal of the decision in the Federal Gazette. The authority competent under Land law shall, furthermore, take into consideration the management objectives within the meaning of sections 27 to 31, 44 and 47 of the Federal Water Act (Wasserhaushaltsgesetz). The approval as per the first sentence is to be applied for annually from:

the authority competent under Land law. In the event of approval by the authority competent under Land law, the limit value under subsection 4, first sentence, shall not apply. Subsection 4, third and fourth sentences, shall apply *mutatis mutandis*.

(6) For the spreading of organic and organic-mineral fertilisers, including farm manure, consisting of digestate from a biogas plant, on arable land with perennial fodder crops, grassland or permanent pastures, the authority competent under Land law may, on application, approve exemptions from the restriction under subsection 4, first sentence, provided that there is a prevailing decision of the European Commission on authorising a derogation under subsection 5, first sentence, no. 1 and the Federal Ministry has published that decision in accordance with subsection 5, first sentence, no. 2. The quantity of total nitrogen per hectare per year that is allowed by the authority competent under Land law to be spread using the fertilisers referred to in the first sentence, taken as an average over the land referred to in the first sentence, may not exceed the quantity of total nitrogen per hectare per year allowed for livestock manure under the European Commission decision referred to in subsection (5), first sentence, or by amendment to that decision. In granting approval, the authority competent under Land law is, as far as possible, to take into account accordingly the other provisions of the European Commission decision referred to in subsection 5, first sentence, and any amendments to that decision. Subsection 5, third and fourth sentences shall apply *mutatis mutandis*.

(7) If the authority competent under Land law grants approval under subsection 6, the fertilisers referred to in subsection 6, first sentence, may only be spread in so far as the proportion of total nitrogen originating from livestock manure applied on average to the farm's agricultural land does not exceed 170 kg total nitrogen per hectare per year. The quantity of total nitrogen applied using the fertilisers referred to in subsection 6, first sentence, is to be determined using the content figures established in accordance with section 3 (4), first sentence, no. 3. In determining the proportion of the total quantity of nitrogen applied using livestock manure, subsection 4, third and fourth sentences, shall apply *mutatis mutandis*.

(8) Fertilisers with significant nitrogen content may not be spread during the following periods:

1. on arable land, from completion of the harvesting of the last main crop until midnight on 31 January;
2. on grassland and permanent pastures, and on arable land under perennial fodder crops where the crops were sown by 15 May, during the period from 1 November to midnight on 31 January.

By way of derogation from the first sentence, solid dung from hooved or cloven-hooved animals and compost may not be spread from 15 December to midnight on 15 January.

(9) By way of derogation from subsection 8, first sentence, no. 1, fertilisers with significant

nitrogen content may be spread on arable land up to the amount of the nitrogen fertiliser requirement:

1. until 1 October for intercrops, winter rape and fodder crops sown by 15 September or for winter barley following a cereal and sown by 1 October, subject however to a maximum of 30 kg ammoniacal nitrogen or 60 kg total nitrogen per hectare;
2. until 1 December for vegetable, strawberry and berry-fruit crops.

The first sentence shall not apply to the spreading of solid dung from hooved or cloven-hooved animals or to composts as per subsection 8, second sentence.

(10) The authority competent under Land law may allow the beginning and the end of the prohibition periods under subsection (8) or (9) to be postponed by up to four weeks. The length of the unbroken period during which spreading is prohibited, as stipulated in subsections 8 and 9, may not be shortened in this event. Furthermore, the authority competent under Land law may, in the case of fertilisers with an ascertained dry weight content of less than two percent, on application, approve exemptions from the prohibition periods under subsections 8 or 9 if harmful changes to waters are not to be expected and not more than 30 kg total nitrogen per hectare is spread in the approved period. Criteria for approval in accordance with the first and third sentences shall include regional conditions, including weather and the beginning and end of plant growth, and soil and water protection objectives. The competent authority may also lay down additional requirements concerning spreading and may restrict the duration of approval.

Section 7

Restrictions and Bans

(1) Applying fertilisers, soil improvers, growing media or plant strengtheners in contravention of the application restrictions that follow from the labelling of these substances in accordance with the Fertiliser Ordinance (*Düngemittelverordnung*) shall be prohibited.

(2) The application of fertilisers, soil improvers, growing media and plant strengtheners produced using bonemeal, meat and bone meal or meatmeal shall be prohibited on grassland and permanent pastures used for farming and for top-dressing vegetables or fodder crops. Anyone who applies the substances referred to in the first sentence to other agricultural land is to work them in immediately.

(3) The application of fertilisers, soil improvers, growing media and plant strengtheners produced using diatomite shall be prohibited on farmed arable land, grassland, permanent pastures, in growing fodder crops and on land intended to be used for growing vegetable crops or ground-level fruit crops. Anyone who applies the substances referred to in the first sentence to other agricultural land is to work them in immediately. The application of dry fertilisers, soil improvers, growing

media and plant strengtheners produced using diatomite shall be prohibited. The application of the substances referred to in the first and third sentences on land other than agricultural land shall be prohibited.

(4) The application of liquid livestock manure for top-dressing in vegetable growing shall be prohibited. The application of liquid livestock manure shall only otherwise be permitted in vegetable growing if the time between application and the harvesting of the vegetable crops is not less than twelve weeks.

Section 8 Nutrient Management

(1) The farm operator is, by 31 March of each year, to compile a nutrient management plan for nitrogen and phosphate for the previous fertilisation year, as set out in Annex 5, either:

1. as a balance of input and removal for the agricultural land as a whole; or
2. as a collation of the balance results for each land parcel, each management unit or an area combined in accordance with section 3 (2), third sentence

which is then to be collated as an annually updated, multiyear nutrient management plan in accordance with Annex 6.

(2) The determination of nutrient removal from the crops, as per subsection 1 in conjunction with Annex 5, is, for the nitrogen content, to be based on the figures set out in Annex 7 Tables 1 to 3. For crops not listed in Annex 7 Tables 1 to 3, the nitrogen content figures are to be requested from the authority competent under Land law. The second sentence shall also apply to the phosphate content of the crops grown. By way of derogation from the first to third sentences, if nutrient content figures are established for primary-harvest produce and secondary-harvest produce using scientifically recognised testing or measuring methods, then the nutrient removal is to be determined from these figures.

(3) By way of derogation from subsection 2, farm operators who keep the livestock species listed in Annex 1 Table 2 are to calculate nutrient removal from land under coarse fodder crops as follows:

Nutrient removal = nutrient input from
coarse fodder according to Annex 1
Table 2 per animal or stall place x
number of animals or animal stalls +
nutrient removal via coarse fodder
sent off the farm – nutrient input from
coarse fodder brought onto the farm.

To account for unused feed, the farm operator may add up to 15% for fodder crops and up to 25% for grassland and permanent pastures to the nutrient removal determined in accordance with the first sentence.

(4) To determine the nitrogen input when using livestock manure and fertiliser consisting of digestate from a biogas plant, farm operators are to apply at minimum the figures set out in Annex 1 Table 1 Columns 4 and 5 and Annex 2 Rows 5 to 9 Columns 4 and 5 and, in the case of grazing, for the

proportion relating to grazing, at minimum the figures set out in Annex 2 Rows 5 to 8 Column 6.

(5) To allow for specificities with regard to certain types of farm, to the application of certain fertilisers, to the cultivation of certain crops, to the production of certain qualities, to the management of certain livestock species, to the use of certain management practices and to harvest losses beyond the farm operator's control, the farm operator may factor in unavoidable losses and necessary additions as required by or in consultation with the authority competent under Land law. Furthermore, in determining the results of the nitrogen balance, the farm operator may, in respect of the cultivation of vegetable crops, factor in unavoidable losses amounting to 60 kg nitrogen per hectare per year. The second sentence shall not apply to land used to grow chicory roots, pumpkins, carrots, parsnips, black salsify, turnips, runner beans, rooted parsley or dry bulb onions.

(6) Subsection 1 shall not apply to:

1. land used solely for growing ornamental plants or Christmas trees, to land used for tree nurseries, vine nurseries, soft fruits, orchards, to permanent vineyards or orchards not in production, or to land under short-rotation forestry for the purpose of energy production;
2. land used solely for grazing with annual nitrogen production (nitrogen output) from commercial fertilisers of animal origin of up to 100 kg nitrogen per hectare where no additional nitrogen fertiliser is applied;
3. farms that do not apply to any of their land parcels significant quantities of nutrients from nitrogen or phosphate in the form of fertilisers, soil improvers, growing media, plant strengtheners or waste for disposal as per
section 28 of the Circular Economy Act
(Kreislaufwirtschaftsgesetz).
4. farms which:
 - a) deducting the land listed in numbers 1 and 2, manage less than 15 hectares of agricultural land;
 - b) cultivate a maximum of two hectares of vegetables, hops, wine or strawberries;
 - c) produce annual nutrient quantities from livestock manure of no more than 750 kg nitrogen per farm; and
 - d) do not accept and spread farm manure, or organic or organic-mineral fertilisers consisting of digestate from a biogas plant, produced outside of the farm.

Section 9 Assessment of the nutrient management plan

(1) The farm operator is, on demand, to submit the nutrient management plans under section 8 subsection 1 to the authority competent under Land law.

(2) The control value for nitrogen as per Annex 6 Row 10, determined as the average figure over the last three fertilisation years as part of the nutrient management plan under section 8 subsection 1, is to be as low as possible. The

farm operator is to ensure that the control value referred to in the first sentence does not exceed 60 kg of nitrogen per hectare per year and, in the fertilisation years commencing in 2018, 2019 and 2020, and in subsequent fertilisation years, does not exceed 50 kg of nitrogen per hectare per year.

(3) The average control value for phosphate as per Annex 6 Row 10, determined as the average figure over the last six fertilisation years as part of the nutrient management plan under section 8 subsection 1, is to be as low as possible. The farm operator is to ensure that the control value referred to in the first sentence does not exceed 20 kg of phosphate per hectare per year and, in the fertilisation years commencing in 2018, 2019, 2020, 2021, 2022 and 2023, and in subsequent years, does not exceed 10 kg of phosphate per hectare per year.

(4) If the authority competent under Land law determines that the permissible control value as per subsection 2, second sentence, or subsection 3, second sentence, has been exceeded, it is to order the farm operator to participate, in the year this fact is determined is made, in a fertiliser advice scheme accredited by the competent authority. The farm operator is to present proof of participation to the competent authority within two weeks of participation. The fertiliser advice scheme is to be directed at compliance with the permitted control values.

(5) If, in the year following the fertiliser advice scheme as per subsection 4, the authority competent under Land law determines that the permissible control value as per subsection 2, second sentence, or subsection 3, second sentence, has been exceeded once again, the farm operator is to present to the competent authority by March 31 for inspection the determination of the fertiliser requirement in accordance with section 3 subsection 2, first sentence, and the nutrient management plan in accordance with section 8 subsection 1.

Section 10

Records

(1) Before spreading significant quantities of nutrients in the form of fertilisers, soil improvers, growing media and plant strengtheners, farm operators are to record:

1. the fertiliser requirement determined in accordance with section 3 subsection 2 or subsection 3, fourth sentence, including the calculations made in accordance with section 4 on which this determination is based;
2. the figures in accordance with section 3 subsection 4, including the methods used to calculate them;
3. the nutrient quantities determined in accordance with section 4 subsection 4, including the methods used to calculate them.

Any cases where the requirement as per section 3 subsection 3, third sentence, is exceeded, including the reasons for the increased fertiliser requirement, are to be recorded without delay after the requirement is exceeded. farm operators are, furthermore, by 31 March of the calendar year following each fertilisation year, to record the baseline data and the results of the nutrient management plans under section 8 subsection 1 in accordance with Annexes 5 and 6. Land and farms referred to in section 8 subsection 6 shall be excluded from the first to third sentences.

(2) Furthermore, if fertilisers, soil improvers, growing

media or plant strengtheners produced using meatmeal, bonemeal or meat and bone meal are applied to agricultural land, the farm operator is, within one month of the fertilising measure, to record:

1. the land parcel to which the substances have been applied, including its name, location and size and the crop grown on it;
2. the type and quantity of the substance applied and the application date;
3. the marketer of the substance stated on the label in accordance with the Fertiliser Ordinance (Düngemittelverordnung);
4. the animal substance contained that is stated on the label in accordance with the Fertiliser Ordinance;
5. in the case of fertilisers, the type designation stated on the label in accordance with the Fertiliser Ordinance.

(3) The farm operator is to keep the records as per subsections 1 and 2 for seven years from the end of the fertilisation year and present them on demand to the authority competent under Land law.

Section 11 Requirements concerning spreading equipment

Equipment used to apply fertilisers, soil improvers, growing media and plant strengtheners must comply with generally accepted technological standards. The spreading of the substances referred to in the first sentence using equipment listed in Annex 8 shall be prohibited.

Section 12 Capacity of facilities for storing farm manure and digestate

(1) The capacity of facilities for storing farm manure and digestate from a biogas plant that is to be used as fertiliser must meet the needs of the respective farm and must meet water protection requirements. The storage capacity must be greater than that needed for the period during which the spreading of the fertilisers referred to in the first sentence on agricultural land is prohibited under section 6 (8) and (9).

(2) Without prejudice to subsection 1, first sentence, farms that produce liquid farm manure such as slurry, liquid manure or digestate as per subsection 1, first sentence, are to ensure that they can safely store at minimum the liquid farm manure or digestate produced in a six-month period. The calculation of the capacity of the storage containers is to take into account the quantities of manure produced in each occupied stall place as per Annex 9 Table 1. The calculation is also to take into account the quantities of precipitation, wastewater and silage effluents arising during storage and any residual quantities of stored liquid that cannot be pumped out. When calculating the storage capacity, periods between 1 October and 1 April of the next year during which the farm animals listed in Annex 9 Table 1 are not kept in their stalls may be taken into account by making deductions as appropriate.

(3) From 1 January 2020, farms that produce the farm manure referred to in subsection 2, first sentence, and, based on the conversion factor specified in Annex 9 Table 2, hold more than three livestock units per hectare of agricultural land, and farms that produce such

farm manure or the digestate referred to in subsection 2, first sentence, and do not have land on which to spread such manure, are to ensure that they can safely store at minimum the liquid farm manure or digestate produced in a nine-month period if they use it on the farm or provide it to others for fertilisation purposes. The second to fourth sentences of subsection (2) shall apply mutatis mutandis.

(4) Without prejudice to subsection 1, second sentence, farms that produce solid dung or compost are, from 1 January 2020, to ensure that they can safely store at minimum the quantity of the above fertilisers produced in a two-month period. The second to fourth sentences of subsection (2) shall apply mutatis mutandis.

(5) Insofar as the farm on which the substances referred to in subsections 1 to 4 are produced does not itself have the storage capacity necessary as per subsections 1 to 4, the farm operator is to ensure by written contractual agreement with a third party that the quantity of these substances that exceeds the farm's capacity is stored or used by another farm or other farms.

(6) On demand from the authority competent under Land law, farm operators of the farms referred to in subsections 2 to 5 are to furnish suitable documentary evidence of compliance with their obligations.

Section 13

Specific requirements concerning approval and other orders by competent authorities; enactment of ordinances by the governments of the Länder

(1) Where the authority competent under Land law grants authorisation or issues an order on the basis of this Ordinance, it is to take special care to ensure that soil fertility, human and animal health and the natural environment, particularly water quality, are not endangered and that there is no conflict with other stipulations of public law.

(2) The governments of the Länder shall be assigned the power, for the protection of waters against pollution caused by nitrates or phosphates, to adopt, by ordinance based on section 3 (4), first sentence, in conjunction with the second sentence, no. 3, and subsection 5, of the Fertilisation Act, deviating requirements for:

1. groundwater-body areas that are in poor chemical condition, as per section 7 of the Groundwater Ordinance (Grundwasserverordnung) of 9 November 2010 (Federal Law Gazette I p. 1513), amended by section 3 of the Act of 04 August 2016 (Federal Law Gazette I S. 1972), due to the threshold limit for nitrate as per Annex 2 of the Groundwater Ordinance being exceeded; groundwater-body areas where the nitrate content is found to have an upward trend and amount to at least three-quarters of the threshold limit for nitrate as per Annex 2 of the Groundwater Ordinance; or sub-areas where the nitrate content is found to exceed 50 mg nitrate per litre in groundwater bodies in good chemical condition as per section 7, subsection 4 of the Groundwater Ordinance; or

2. areas corresponding to the respectively affected zone, or part of the affected zone, that drains into a slow-flowing or standing surface water, in which eutrophication due to significant nutrient input, in particular phosphate, from agricultural sources was established.

Eutrophication due to phosphate as per the first sentence, no. 2, is to be assumed if, in the case of slow-flowing surface water bodies, the orthophosphate and phosphorus values as per Annex 7, no. 2.1.2 of the Surface Waters Ordinance (Oberflächengewässerverordnung) of 20 2016 (Federal Law Gazette I p. 1373) are exceeded or, in the case of standing surface waters, the total phosphorus values as per Annex 7 no. 2.2 of the Surface Water Ordinance are exceeded. The governments of the Länder may, in the case of the first sentence, no. 1, provide for an exemption from the deviating requirements referred to in the first sentence for areas corresponding to the area of a groundwater body where the nitrate content is neither found to exceed 37.5 mg nitrate per litre with an upward trend nor found to exceed 50 mg nitrate per litre. Insofar as, and while, this is necessary, the governments of the Länder shall prescribe at least three of the following requirements:

1. by way of derogation from section 3, subsection 3, third sentence, the nitrogen fertiliser requirement determined in accordance with Section 3 (2) may, on account of circumstances arising subsequently, be exceeded by a maximum of 10 percent;
2. by way of derogation from section 3 subsection 4, first sentence, farm manure and organic and organic-mineral fertilisers consisting of digestate from a biogas plant may only be spread if, before spreading, their total nitrogen, available nitrogen or ammoniacal nitrogen content and total phosphate content has been established by or on behalf of the farm operator on the basis of scientifically recognised measuring methods;
3. by way of derogation from section 3, subsection 6, second sentence, an order may, in areas as per the first sentence, no. 2, and not merely on a case-by-case basis, be issued that, by way of derogation from section 3, subsection 6, first sentence, restricts the quantities of phosphate that are permitted to be applied, or prohibits the spreading of phosphate fertilisers completely;
4. by way of derogation from section 4 subsection 4, first sentence, no. 1, before spreading significant quantities of nitrogen, the farm operator is to determine, by testing representative samples, the available nitrogen in the soil for each land parcel or each management unit – except grassland, permanent pastures and land under multi-cut fodder crops – for the point in time at which the fertiliser is applied but no less than once a year;
5. by way of derogation from
 - a) section 5 (2), first sentence, no. 1, in conjunction with the second sentence, a distance of at least 5 m shall be maintained when spreading the substances referred to therein;
 - b) section 5 (3), first sentence, substances referred to therein may not be spread within a distance of 10 m from the

top of the slope; and

- c) section 5 (3), second sentence, substances referred to therein may, at a distance of between 10 m and 20 m from the top of the slope, only be spread in the manner stipulated therein;
6. by way of derogation from section 6 subsection 1, first sentence, the fertilisers referred to therein are, with regard to spreading on unsown arable land, to be worked in without delay and at most within one hour of the commencement of spreading; section 6 subsection 1, sentences 2 and 3 shall remain unaffected;
7. by way of derogation from section 6 subsection 8, first sentence, fertilisers with a significant phosphate content may, in areas as per the first sentence, no. 2, not be spread from 15 November until midnight on 31 January; this period may, depending on the soil, climatic and site conditions, be extended by up to four weeks;
8. by way of derogation from section 6 subsection 8, first sentence, no. 2, fertilisers with a significant nitrogen content may, in areas referred to therein, not be spread from 15 November until midnight on 31 January;
9. by way of derogation from section 6 subsection 8, second sentence, dung from hoofed or cloven-hoofed animals and compost may not be spread from 15 November until midnight on 31 January; this period may, depending on the soil, climatic and site conditions, be extended for one of more of the fertilisers referred to by up to four weeks;
10. by way of derogation from section 6 subsection 9, first sentence, no. 2, the fertilisers referred to therein may only be spread up to 1 November for the crops referred to therein;
11. by way of derogation from section 8 subsection 6, no. 4, also in conjunction with section 3 subsection 2, second sentence, and section 10 subsection 1, fourth sentence, only those farms which:
- a) not counting land referred to in section 8 subsection 6, no. 1 and 2, manage less than ten hectares of agricultural land;
 - b) cultivate a maximum of one hectare of vegetables, hops, wine or strawberries;
 - c) produce annual nutrient quantities from livestock manure of no more than 500 kg nitrogen per farm; and
 - d) do not accept and spread farm manure, or organic or organic-mineral fertilisers consisting of digestate from a biogas plant, that is / are produced outside of the farm;

are exempted from the requirements under section 3 subsection 2, first sentence, section 8 subsection 1 and section 10 subsection 1, first to third sentences;

12. by way of derogation from section 9 subsection 2, second sentence, the farm operator is to ensure that the

control value referred to therein does not exceed 50 kg of nitrogen per hectare per year and, in the fertilisation years commencing in 2018, 2019, 2020 and subsequently, does not exceed 40 kg of nitrogen per hectare per year;

13. by way of derogation from section 12 subsection 2, first sentence, farms are to furnish evidence that, at minimum, the quantity of liquid farm manure or digestate produced on the farm in a seven-month period can be safely stored;
14. by way of derogation from section 12 subsection 4, farms are to ensure that, at minimum, the quantity of fertilisers referred to therein that is produced on the farm in a four-month period can be safely stored.

Insofar as requirements in an Ordinance as per the first to fourth sentences relate to the entire farm, the Land governments may also regulate their application to farms whose land does not fall completely within the scope of the Ordinance.

(3) Insofar as the Land governments issue Ordinances under subsection 2, the deviating requirements stipulated under Land law shall not apply to farms that furnish proof to the authority competent under Land law that on average over the last three fertilisation years the nutrient management plan as per section 8 subsection 1 for nitrogen as per Annex 6 Row 10 has not exceeded the control value of 35 kg nitrogen per hectare per year. In this event, the requirements of this Ordinance shall apply.

(4) The Land governments may provide in an Ordinance under subsection 2, first sentence, that the authority competent under Land law may, in response to an application, permit exemptions from the deviating requirements stipulated in the Ordinances under subsection 2, fourth sentence, for farms that participate in one or more agri-environmental programmes of the Land if this programme or these programmes:

- 1. serve(s) in particular the protection of waters from nutrient inputs from agricultural sources; and
- 2. attain(s) the same effect on the entire land of a farm within an area under subsection 2, first sentence, as the deviating requirements stipulated in the Ordinance under subsection 2, fourth sentence.

In the decision under the first sentence, the authority competent under Land law is to take into consideration the management objectives within the meaning of section 47 of the Federal Water Act (Wasserhaushaltsgesetz). The permission under the first sentence is to require renewal after any modification to provisions as per subsection 2, fourth sentence, in an ordinance as per subsection 2, first sentence, or any change in the facts and circumstances, as per the first and second sentences, on which the granting of the permission is based. If exceptional permission is granted under sentence 1, the requirements of this Ordinance shall apply.

(5) The Land governments shall be assigned the power, for areas other than the areas referred to in subsection 2, first sentence, and other than the areas referred to in subsection 2, third sentence, to provide by ordinance under section 3

subsection 4, first sentence, in conjunction with the second sentence, no. 3 and with section 5 of the Fertilisation Act that, by way of derogation from

1. section 8 subsection 6, no. 4, also in conjunction with section 3 subsection 2, second sentence, and section 10 subsection 1, fourth sentence, that farms which
 - a) not counting land as referred to in section 8 subsection 6 numbers 1 and 2, manage less than 30 hectares of agricultural land;
 - b) cultivate a maximum of three hectares of vegetables, hops, wine or strawberries;
 - c) produce annual nutrient quantities from livestock manure of no more than 110 kg total nitrogen per hectare; and
 - d) do not accept and spread farm manure, or organic or organic-mineral fertilisers consisting of digestate from a biogas plant, that is / are produced outside of the farm;

are exempted from the requirements as per section 3 subsection 2, first sentence, section 8 subsection 1, and section 10 subsection 1, first to third sentences;

2. section 12 subsection 3, first sentence, cattle farms that have sufficient grassland or permanent pastureland of their own for the proper spreading of the liquid farm manure produced on the farm, are to ensure that, at minimum, the quantity of liquid farm manure produced on the farm in a six-month period can be safely stored.

(6) The Land governments shall also be assigned the power to issue, by ordinance under section 3 subsection 4, also in conjunction with subsection 5 or under section 4 of the Fertiliser Act, provisions:

1. concerning submission, reporting and notification obligations in connection with the nutrient balances in accordance with sections 8 and 9 and with the records under section 10 subsections 1 and 2 and concerning the form of said nutrient balances and records, to the extent that this is necessary for monitoring compliance with the requirements under fertilisation law; and
2. on the duty of farm operators to combine the fertiliser requirement determined for each land parcel or each management unit into a fertiliser requirement for the whole farm and to record and comply with the fertiliser requirement for the whole farm.

(7) The Land governments shall notify the Federal Ministry of the initial issuance of an ordinance as per subsection 2 or 5 and of any amendment to it.

Section 14

Regulatory offences

(1) Any person shall be guilty of a regulatory offence within the meaning of section 14 subsection 2 no. 1 letter a of the Fertilisation Act who wilfully or negligently:

1. in breach of section 3 subsection 3, first sentence, also in conjunction with the fifth sentence, exceeds a fertiliser requirement referred to therein;

2. in breach of section 3 subsection 4, first sentence or subsection 6, first sentence, first clause, section 5 subsection 2, fourth sentence, or subsection 3, first or second sentences, section 6 subsection 4, first sentence, section 11, second sentence, spreads a substance referred to therein;
3. in breach of section 5 subsection 2, first sentence, no. 1, fails to prevent an input or run-off;
4. in breach of section 6 subsection 1, first sentence, or section 7 subsection 2, second sentence, or subsection 3, second sentence, fails to work in a substance referred to therein, or fails to do so in good time;
5. in breach of section 6 subsection 2, spreads a fertiliser referred to therein to which no urease inhibitor has been added, or does not work in the fertiliser, or does not do so in good time;
6. in breach of section 6 subsection 3, first sentence, also in conjunction with the second sentence, spreads on the soil or incorporates into the soil a fertiliser referred to therein;
7. in breach of section 7 subsection 1, subsection 2, first sentence, subsection 3, first, third or fourth sentences or subsection 4, applies a substance referred to therein;
8. in breach of section 9 subsection 1 or 5, fails to submit a nutrient management plan or a determination of the fertiliser requirement, or fails to do so in good time;
9. in breach of section 9 subsection 2, second sentence, or subsection 3, second sentence, fails to ensure that the control value referred to therein is not exceeded where the competent authority has issued an enforceable order against the farm operator under section 9 subsection 4, first sentence; or
10. contravenes an enforceable order under section 9 subsection 4, first sentence.

(2) Any person shall be guilty of a regulatory offence within the meaning of section 14 subsection 2 no. 1 letter b of the Fertilisation Act who wilfully or negligently:

1. in breach of section 5 subsection 1, first sentence, or section 6 subsection 8 spreads a substance referred to therein;
2. in breach of section 12 subsection 6 fails to submit proof referred to therein or fails to do so in good time.

(3) Any person shall be guilty of a regulatory offence within the meaning of section 14 subsection 2 no. 1 of the Fertilisation Act who wilfully or negligently:

1. in breach of section 10 subsection 1, first, second or third sentences, or subsection (2), fails to make a record or fails to do so correctly, completely or in good time; or
2. in breach of section 10 subsection 3, fails to keep a record or fails to do so for a minimum of seven years or fails to submit a record in good time.

Section 15

Transitional provision

For the purposes of the combination into an annually updated, multiyear nutrient management plan in accordance with section 8 subsection 1 and the determination of the control value in accordance with

section 9 subsections 2 and 3 and
section 13 subsection 3, first sentence, nutrient
management plans compiled before 2 June 2017
on the basis of the Fertilisation Ordinance as
published on 27 February 2007 (Federal
Gazette I

S. p. 221), last amended by section 5 subsection
36 of the Act of 24 February 2012 (Federal Law
Gazette I, p. 212) shall be equivalent to nutrient
management plans in accordance with section 8
subsection 1.

(to section 3 subsection 4, second sentence, section 6 subsections 4, 5 and 7, section 8 subsections 3 and 4)

Average nutrient excretion by farm animals; average nutrient intake of ruminants from coarse feed

Table 1
Average nutrient excretion by farm animals per stall place per year or per animal¹

| | Category | Production process | | Quantity of nutrients | |
|----|-------------------------|--|------------------------|--------------------------|----------------------------------|
| | | | | kg N | kg P ₂ O ₅ |
| | 1 | 2 | 3 | 4 | 5 |
| 1 | Dairy livestock farming | | | | |
| 2 | Calf rearing | | | per stall place per year | |
| 3 | | 0 to 16 weeks; 90 kg weight increase per calf; 3 throughputs | | 16.6 | 6.4 |
| 4 | Rearing of young cattle | Age of first calving 27 months; 605 kg weight increase per animal reared | | per animal per year | |
| 5 | | Grassland farm, with and without land under "nature conservation" | Conventional | 57 | 16.4 |
| 6 | | | Extensive | 54 | 16 |
| 7 | | Forage production farm | with pasture land | 48 | 15.5 |
| 8 | | | Kept in stall | 45 | 15 |
| 9 | Milk production | Performance relative to ECM (4.0 % fat, 3.4 % protein); 0.9 | | per animal per year | |
| 10 | medium and heavy breeds | Grassland farm (with pasturage) | 6 000 kg ECM | 114 | 36 |
| 11 | | | 8 000 kg ECM | 129 | 43 |
| 12 | | | 10 000 kg ECM | 143 | 47 |
| 13 | | Grassland farm (without pasturage, with hay) | 6 000 kg ECM | 109 | 37 |
| 14 | | | 8 000 kg ECM | 124 | 43 |
| 15 | | | 10 000 kg ECM | 141 | 48 |
| 16 | | | 12 000 kg ECM | 159 | 55 |
| 17 | | Forage-production farm (with pasturage) | 6 000 kg ECM | 103 | 37 |
| 18 | | | 8 000 kg ECM | 117 | 42 |
| 19 | | | 10 000 kg ECM | 134 | 47 |
| 20 | | | 12 000 kg ECM | 153 | 52 |
| 21 | | Forage-production farm (without pasturage, with hay) | 6 000 kg ECM | 100 | 36 |
| 22 | | | 8 000 kg ECM | 115 | 42 |
| 23 | | | 10 000 kg ECM | 133 | 47 |
| 24 | | | 12 000 kg ECM | 152 | 52 |
| 25 | | light breeds | Forage-production farm | 5 000 kg ECM | 76 |
| 26 | 7 000 kg ECM | | | 91 | 33 |
| 27 | 9 000 kg ECM | | | 111 | 42 |
| 28 | Cattle fattening | | | | |
| 29 | Young-cattle fattening | | | per stall place per year | |
| 30 | Production of rosé veal | Fattening from 50 to 350 kg LW; 1.3 fattening rounds p.a. | | 31.0 | 12.7 |

¹ Source: Papers by the German Agricultural Society volume 199: Balancing of nutrient excretions of farm animals ("Bilanzierung der Nährstoffausscheidungen landwirtschaftlicher Nutztiere"), 2nd edition (2014); can be purchased from DLG Verlag GmbH, Frankfurt am Main.

| | Category | Production process | | Quantity of nutrients | | |
|----|--|---|--------------------|-----------------------|----------------------------------|------|
| | | | | kg N | kg P ₂ O ₅ | |
| | | | | 1 | 2 | 3 |
| 31 | Calf fattening | 50 to 250 kg LW; 2.1 fattening rounds p.a. | | Milk replacer feed | 13.0 | 6.5 |
| 32 | | 50 to 260 kg LW; 1.9 fattening rounds p.a. | | Milk replacer feed | 15.9 | 7.3 |
| 33 | Rearing of weanlings | 80 to 210 kg LW; 2.7 fattening rounds p.a. | | Standard feed | 15.7 | 5.4 |
| 34 | | | | reduced N / | 14.6 | 4.5 |
| 35 | Bull fattening | | | | per animal per year | |
| 36 | | to 675 kg LW (19 months) | | from calf 45 kg LW | 36.6 | 14.2 |
| 37 | | to 750 kg LW | | from calf 45 kg LW | 39.1 | 14.3 |
| 38 | | | | from 80 kg LW | 40.7 | 14.7 |
| 39 | | | | from 210 kg LW | 41.3 | 14.8 |
| 40 | Suckler cow husbandry | | | | per animal per year | |
| 41 | 6 months suckling period | 500 kg LW; 0.9 calves per cow p.a.; (200 kg weaning weight) | | | 88 | 26 |
| 42 | | 700 kg LW; 0.9 calves per cow p.a.; (230 kg weaning weight) | | | 105 | 31 |
| 43 | 9 months suckling | 700 kg LW; 0.9 calves per cow p.a.; (340 kg weaning weight) | | | 114 | 33 |
| 44 | Sow husbandry: | | | | | |
| 45 | Piglet production | | | | per sow place per year | |
| 46 | Piglet rearing up to 8 kg LW | 22 piglets reared 217 kg weight increase per place p.a. | | All-purpose feed | 27.1 | 12.6 |
| 47 | | | | reduced N / | 24.0 | 11.0 |
| 48 | | | | greatly reduced N/ | 23.0 | 10.3 |
| 49 | | 25 piglets reared 239 kg weight increase per place p.a. | | All-purpose feed | 27.3 | 12.6 |
| 50 | | | | reduced N / | 24.1 | 11.2 |
| 51 | | | | greatly reduced N/ | 23.1 | 10.3 |
| 52 | | 28 piglets reared 264 kg weight increase per place p.a. | | All-purpose feed | 27.5 | 12.8 |
| 53 | | | | reduced N / | 24.2 | 11.2 |
| 54 | | | | greatly reduced N/ | 23.2 | 10.3 |
| 55 | | 22 piglets reared 656 kg weight increase per place p.a. | | All-purpose feed | 39.2 | 17.2 |
| 56 | | | | reduced N / | 35.1 | 15.3 |
| 57 | | | | greatly reduced N/ | 33.5 | 14.0 |
| 58 | 25 piglets reared 711 kg weight increase per place p.a. | | All-purpose feed | 41.1 | 17.9 | |
| 59 | | | reduced N / | 36.8 | 16.0 | |
| 60 | | | greatly reduced N/ | 35.0 | 14.7 | |
| 61 | 28 piglets reared 824 kg weight increase per place p.a. | | All-purpose feed | 42.9 | 18.6 | |
| 62 | | | reduced N / | 38.4 | 16.7 | |
| 63 | | | greatly reduced N/ | 36.6 | 15.1 | |
| 64 | Specialised piglet rearing | | | | per piglet place per year | |
| 65 | 450 g average daily increase in weight during rearing | 8 to 28 kg LW | | All-purpose feed | 3.8 | 1.4 |
| 66 | | from 8 kg / 15 kg LW | | reduced N / | 3.6 | 1.4 |
| 67 | | | | greatly reduced N/ | 3.4 | 1.1 |
| 68 | 500 g average daily increase in weight during rearing | 8 to 28 kg LW | | All-purpose feed | 4.2 | 1.6 |
| 69 | | from 8 kg / 15 kg LW | | reduced N / | 3.8 | 1.4 |
| 70 | | | | greatly reduced N/ | 3.6 | 1.4 |

| | Category | Production process | | Quantity of nutrients | |
|-----|---|--|--------------------|-------------------------|----------------------------------|
| | | | | kg N | kg P ₂ O ₅ |
| | | | | 1 | 2 |
| 71 | Gilt husbandry | | | per gilt place per year | |
| 72 | Gilt rearing | 28 to 115 kg LW 180 kg weight increase per place p.a. | All-purpose feed | 10.8 | 5.5 |
| 73 | | | reduced N / | 9.0 | 4.6 |
| 74 | Integration of gilts | 95 to 135 kg LW 240 kg weight increase per place p.a. | All-purpose feed | 15.4 | 8.5 |
| 75 | | | reduced N / | 13.3 | 7.5 |
| 76 | Pig fattening: | | | per fattening place per | |
| 77 | Fattening pig; from 28 to 118 kg LW | 700 g daily weight increase; 210 kg weight increase | All-purpose feed | 11.1 | 4.8 |
| 78 | | | reduced N / | 10.7 | 4.1 |
| 79 | | | greatly reduced N/ | 9.6 | 3.7 |
| 80 | | 750 g daily weight increase; 223 kg weight increase | All-purpose feed | 11.4 | 4.8 |
| 81 | | | reduced N / | 10.9 | 4.1 |
| 82 | | | greatly reduced N/ | 9.8 | 3.9 |
| 83 | | 850 g daily weight increase; 244 kg weight increase | All-purpose feed | 12.2 | 5.0 |
| 84 | | | reduced N / | 11.7 | 4.4 |
| 85 | | | greatly reduced N/ | 10.6 | 3.9 |
| 86 | | 950 g daily weight increase; 267 kg weight increase | All-purpose feed | 12.5 | 5.0 |
| 87 | | | reduced N / | 12.0 | 4.4 |
| 88 | | | greatly reduced N/ | 10.8 | 3.9 |
| 89 | Fattening of wild boar piglets | | | | |
| 90 | from 28 to 118 kg LW | 850 g daily increase in weight; Ratio of animal sexes: f:m 50:50 2.7 fattening rounds, 246 kg weight | All-purpose feed | 11.8 | 4.8 |
| | | | reduced N / | 11.3 | 4.4 |
| 91 | Boar husbandry | | | per boar place per year | |
| 92 | 60 kg weight increase per place p.a. | | | 22.1 | 9.6 |
| 93 | Horse keeping | | | | |
| 94 | Riding horses 500 – 600 kg LW | Kept in stable | | 51.1 | 23.4 |
| 95 | | Kept in stable / pasturage | | 53.6 | 23.4 |
| 96 | Riding ponies 300 kg LW | Kept in stable | | 34.9 | 16.5 |
| 97 | | Kept in stable / pasturage | | 33.4 | 15.3 |
| 98 | Breeding mares | Heavy horse 600 kg LW; kept in stable / pasturage; 0.5 foals | | 63.5 | 28.0 |
| 99 | | Pony 350 kg LW; kept in stable / pasturage; 0.5 foals p.a. | | 42.3 | 18.4 |
| 100 | Horses for rearing | Heavy horse; 365 kg weight increase; kept in stable / pasturage; | | 44.5 | 18.9 |
| 101 | | Pony; 150 kg weight increase; kept in stable / pasturage; 6th - | | 31.6 | 13.5 |
| 102 | Production of lamb | | | | |
| 103 | Ewe with progeny breeding | 1.5 lambs / sheep; 40 kg weight increase per lamb | | 20.1 | 6.2 |
| 104 | | 1.1 lambs / sheep; 40 kg weight increase per lamb | | 17.6 | 5.0 |
| 105 | Production of goats' milk | | | per animal per year | |
| 106 | Dairy goat with progeny | 800 kg milk/goat p.a.; 1.5 kids per goat; 16 kg weight increase/kid | | 15.2 | 5.7 |

| | Category | Production process | | Quantity of nutrients | | |
|-----|--|---|---------------|-----------------------|----------------------------------|-------|
| | | | | kg N | kg P ₂ O ₅ | |
| | | | | 1 | 2 | 3 |
| 107 | Rabbit husbandry | | | | | |
| 108 | Rabbit rearing | | | | per animal per year | |
| 109 | 52 young rabbits reared /doe hare p.a. | Rearing to 0.6 kg LW | | | 2.6 | 1.5 |
| 110 | | Rearing to 3 kg LW | | | 9.7 | 5.4 |
| 111 | Rabbit fattening | | | | per fattening place per | |
| 112 | Fattening | 0.6 to 3 kg LW; 14 kg weight increase/place | | | 0.7 | 0.4 |
| 113 | Farmed game | | | | per animal per year | |
| 114 | does | Meat production; 45 kg weight increase per production unit (1 adult animal with 0.85 young animals) | | | 21.6 | 6.2 |
| 115 | Egg production | | | | per stall place per year | |
| 116 | Pullet rearing | 3.5 kg weight increase | Standard feed | | 0.269 | 0.176 |
| 117 | | | reduced N / | | 0.252 | 0.151 |
| 118 | Laying hen husbandry | 17.6 kg egg mass /animal | Standard feed | | 0.764 | 0.396 |
| 119 | | | reduced N / | | 0.731 | 0.346 |
| 120 | Chicken fattening (without separation of the animals according to sex) | | | | per stall place per year | |
| 121 | | Fattening for 39 days; 2.6 kg weight increase / animal | Standard feed | | 0.413 | 0.208 |
| 122 | | | reduced N / | | 0.385 | 0.176 |
| 123 | | Fattening 34 to 38 days; 2.3 kg weight increase /animal | Standard feed | | 0.388 | 0.190 |
| 124 | | | reduced N / | | 0.357 | 0.174 |
| 125 | | Fattening 30 to 33 days; 1.85 kg weight increase /animal | Standard feed | | 0.328 | 0.174 |
| 126 | | | reduced N / | | 0.311 | 0.153 |
| 127 | | Fattening to 29 days; 1.55 kg weight increase / animal | Standard feed | | 0.267 | 0.142 |
| 128 | | | reduced N / | | 0.249 | 0.121 |
| 129 | Turkey fattening | | | | per stall place per year | |
| 130 | Cocks | 22.1 kg weight increase; fattening to 21 weeks (56.4 kg feed consumption per animal) | Standard feed | | 2.145 | 1.209 |
| 131 | | | reduced N / | | 1.991 | 0.941 |
| 132 | Hens | 10.9 kg weight increase; fattening for 16 weeks (26.7 kg feed consumption per animal) | Standard feed | | 1.420 | 0.774 |
| 133 | | | reduced N / | | 1.342 | 0.543 |
| 134 | Cocks from the 6th week | | Standard feed | | 2.468 | 1.372 |
| | | | reduced N / | | 2.282 | 1.044 |
| 135 | Hens from the 6th week | | Standard feed | | 1.652 | 0.923 |
| | | | reduced N / | | 1.542 | 0.726 |
| 136 | mixed-sex fattening; 50 % cocks and 50 % hens | | Standard feed | | 1.652 | 0.923 |
| | | | reduced N / | | 1.542 | 0.726 |
| 137 | Turkey-rearing to 5 weeks 20% cocks, 50% hens | | | | 0.422 | 0.289 |
| 138 | Duck fattening | | | | per stall place per year | |
| 139 | Pekin ducks | 19.5 kg weight increase/place p.a.; 6.5 throughputs (3.0 kg weight increase per animal) | | | 0.605 | 0.344 |
| 140 | Muscovy ducks | 15.4 kg weight increase/place p.a.; 4 fattening rounds; 2.7 kg female, 5.0 kg male (f:m = 1:1) | | | 0.576 | 0.367 |

| | Category | Production process | | Quantity of nutrients | |
|-----|-----------------|---|---|-----------------------|----------------------------------|
| | | | | kg N | kg P ₂ O ₅ |
| | 1 | 2 | 3 | 4 | 5 |
| 141 | Goose fattening | | | per animal | |
| 142 | | Early fattening, 5.0 kg weight increase /animal | | 0.231 | 0.133 |
| 143 | | Mid-fattening, 6.8 kg weight increase /animal | | 0.702 | 0.387 |
| 144 | | Late fattening/ fattening on pasture | | 1.074 | 0.334 |

Table 2
Average nutrient intake by ruminants from coarse fodder per stall place per year or per animal

| | Category | Production process | | Nutrient intake in kg | | |
|----|-------------------------|--|------------------------|--------------------------|-------------------------------|----|
| | | | | N | P ₂ O ₅ | |
| | Dairy livestock farming | | | per stall place per year | | |
| 1 | Calf rearing | 0 to 16 weeks; 90 kg weight increase per calf; 3 throughputs | | 5.6 | 2.0 | |
| 2 | Rearing of young cattle | Age of first calving 27 months; 605 kg weight increase per animal reared | | per animal per year | | |
| 3 | | Grassland farm, with and without land under "nature conservation" | Conventional | 58 | 17 | |
| 4 | | | Extensive | 53 | 16 | |
| 5 | | Forage-production farm | with pasture land | 48 | 15 | |
| 6 | | | Kept in stable | 43 | 14 | |
| 7 | Milk production | Performance relative to ECM (4.0 % fat, 3.4 % protein); 0.9 calves | | per animal per year | | |
| 8 | medium and heavy breeds | Grassland farm (with pasturage) | 6 000 kg ECM | 108 | 33 | |
| | | | 8 000 kg ECM | 111 | 34 | |
| | | | 10 000 kg ECM | 113 | 36 | |
| 9 | | Grassland farm (without pasturage, with hay) | 6 000 kg ECM | 98 | 31 | |
| 10 | | | 8 000 kg ECM | 98 | 31 | |
| 11 | | | 10 000 kg ECM | 101 | 33 | |
| 12 | | Forage-production farm (with pasturage) | 6 000 kg ECM | 86 | 28 | |
| 13 | | | 8 000 kg ECM | 93 | 31 | |
| 14 | | | 10 000 kg ECM | 98 | 33 | |
| 15 | | | 12 000 kg ECM | 101 | 34 | |
| 16 | | Forage-production farm (without pasturage, with hay) | 6 000 kg ECM | 77 | 27 | |
| 17 | | | 8 000 kg ECM | 84 | 29 | |
| 18 | | | 10 000 kg ECM | 89 | 31 | |
| 19 | | | 12 000 kg ECM | 94 | 32 | |
| 20 | | light breeds | Forage-production farm | 5 000 kg ECM | 68 | 22 |
| 21 | | | | 7 000 kg ECM | 75 | 25 |
| 22 | | | | 9 000 kg ECM | 80 | 27 |
| | | Cattle fattening | | | | |
| 23 | Young-cattle fattening | | | per stall place per year | | |
| 24 | Production of rosé veal | Fattening from 50 to 350 kg LW; 1.3 fattening rounds p.a. | | 7.0 | 2.9 | |

¹ Source: Papers by the German Agricultural Society volume 199: Balancing of nutrient excretions of farm animals ("Bilanzierung der Nährstoffausscheidungen landwirtschaftlicher Nutztiere"), 2nd edition (2014); can be purchased from DLG Verlag GmbH, Frankfurt am Main.

| | Category | Production process | | Nutrient intake in kg | |
|----|---------------------------|---|---------------------|-----------------------|-------------------------------|
| | | | | N | P ₂ O ₅ |
| 25 | Calf fattening | 50 to 250 kg LW; 2.1 fattening rounds p.a. | Milk replacer feed | 0.6 | 0.4 |
| 26 | | | Milk replacer feed | 0.3 | 0.1 |
| 27 | Rearing of weanlings | 80 to 210 kg LW; 2.7 fattening rounds p.a. | Standard feed | 6.0 | 2.3 |
| 28 | | | reduced N / | 6.0 | 2.3 |
| | Bull fattening | | | per animal per year | |
| 29 | | to 675 kg LW (19 months) | from calf 45 kg LW | 19.6 | 7.9 |
| 30 | | to 750 kg LW | from calf 45 kg LW | 20.2 | 8.1 |
| 31 | | to 750 kg LW | from calf 80 kg LW | 21.0 | 8.5 |
| 32 | | to 750 kg LW | from calf 210 kg LW | 22.4 | 9.0 |
| | Suckler cow husbandry | | | per animal per year | |
| 33 | 6 months suckling period | 500 kg LW; 0.9 calves per cow p.a.; (200 kg weaning weight) | | 90 | 27 |
| 34 | | 700 kg LW; 0.9 calves per cow p.a.; (230 kg weaning weight) | | 108 | 32 |
| 35 | 9 months suckling | 700 kg LW; 0.9 calves per cow p.a.; (340 kg weaning weight) | | 120 | 36 |
| | Production of lamb | | | per animal per year | |
| 36 | Ewe with progeny breeding | 1.5 lambs / sheep; 40 kg weight increase per lamb | Conventional | 18.2 | 5.3 |
| 37 | | 1.1 lambs / sheep; 40 kg weight increase per lamb | Extensive | 17.3 | 5.0 |
| | Production of goats' milk | | | per animal per year | |
| 38 | Dairy goat with progeny | 800 kg milk/goat p.a.; 1.5 kids per goat; 16 kg weight increase/kid | | 11.7 | 3.8 |
| | Farmed game | | | per animal per year | |
| 39 | does | 45 kg weight increase per production unit (1 adult animal with 0.85 young | | 21.3 | 6.1 |

Annex 2

(to section 3 subsection 4, second sentence, and subsection 5, third sentence, section 6 subsections 4, 5 and 7, section 8 subsection 4, Annexes 5 and 6)

Parameters for Proper Analysis of Nitrate Fertiliser Inputs

| Minimum values, as a percentage of the excretion of total nitrogen in livestock manure, to be included in the calculation, and other variables | | | | | | |
|--|---|---|--|--|--------------------|------------------------|
| 1 | | Spreading | | Input | | |
| 2 | | after deduction of the stall and storage losses | | after deduction of the stall, storage and spreading losses | | |
| 3 | Animal species/process | Liquid manure, digestate | solid dung, slurry, pasturage ² | Liquid manure, digestate | solid dung, slurry | pasturage ² |
| 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | Cattle | 85 | 70 | 70, from 01/01/2020: 75 | 60 | 25 |
| 6 | Pigs | 80 | 70 | 70, from 01/01/2020: 75 | 60 | 25 |
| 7 | Poultry | | 60 | | 50 | 25 |
| 8 | Other animal species (e.g. horses, sheep) | | 55 | | 50 | 25 |
| 9 | Operation of a biogas plant | 95 | | 85 | | |

¹ Basis: Nitrogen excretion minus the storage losses or determination of the nitrogen content prior to spreading.

² Grazing days are to be included proportionately. Appropriate records are to be kept about the pasturage; these are, upon request, to be presented to the authority competent under Land law.

Minimum values for the nitrogen utilisation
from organic or organic-mineral fertilisers
in the year of the spreading, consisting of the following starting materials

| Fertiliser starting material | Minimum effectiveness in the year of spreading in % of the total nitrogen content |
|---|---|
| Liquid cattle manure | 50 |
| Liquid pig manure | 60 |
| Solid dung from cattle, sheep and goats | 25 |
| Solid pig dung | 30 |
| Dry poultry manure | 60 |
| Solid poultry and rabbit dung | 30 |
| Solid horse dung | 25 |
| Cattle slurry | 90 |
| Pig slurry | 90 |
| Sludge liquid (< 15 % dry content) | 30 |
| Sludge solid (\geq 15 % dry weight) | 25 |
| Mushroom compost | 10 |
| Compost from green waste | 3 |
| Other composts | 5 |
| Biogas-plant digestate liquid | 50 |
| Biogas-plant digestate solid | 30 |

Annex 4

(to section 4 subsections 1 and 2)

Determination of the nitrogen fertiliser requirement

Table 1
Determination of fertiliser requirement for arable crops and vegetable growing

| | Factors for determining the fertiliser requirement | Table / regulation to be applied |
|----|--|---|
| 1 | Crop | Table 2 or 4 |
| 2 | Nitrogen requirement in kg N/ha | Table 2 or 4 |
| 3 | Yield level according to the table with nitrogen-requirement values in | Table 2 or 4 |
| 4 | Yield level as an average over the last three years in qt/ha | Table 3 or 5 |
| 5 | Difference in yield in qt/ha resulting from | lines 3 and 4 |
| | Additions and reductions in kg N/ha for | |
| 6 | the quantity of nitrogen available in the soil (Nmin) | Section 4 subsection 1, second sentence, no 3 |
| 7. | Yield difference | Line 5, Table 3 or 5 |
| 8 | Residual nitrogen from the soil reserve | Table 6 |
| 9 | Residual nitrogen from organic fertilisation in previous years | Section 4 subsection 1, second |
| 10 | Previous crop (arable farming/vegetable growing) | Table 7 or 3 |
| 11 | Addition in the case of covering with plastic film or fibre mats to bring | Section 4 subsection 1, second |
| 12 | Nitrogen-fertiliser requirement during vegetation in kg N/ha | Total of the values in lines 2, 6, 7, 8, 9, 10 and 11 |
| 13 | Addition due to circumstances arising subsequently, in particular stock development or climatic events | Section 3 subsection 3, third and fourth sentences |

Table 2
Nitrogen-requirement values for arable crops in relation to the yield level

Preliminary remarks and notes:

1. The nitrogen-requirement value corresponds to the nutrient requirement for nitrogen during a cultivation period.
2. The nitrogen-requirement values in the table refer to the given yield level and the quantity of available nitrogen (Nmin) which is usually to be determined at the beginning of the vegetation period at a soil depth of 0 to 90 cm.

| Crop | Yield level in qt/ha | Nitrogen requirement value in kg N/ha |
|-------------------|----------------------|---------------------------------------|
| Winter rape | 40 | 200 |
| Winter wheat A, B | 80 | 230 |
| Winter wheat C | 80 | 210 |
| Winter wheat E | 80 | 260 |
| Durum wheat | 55 | 200 |
| Winter barley | 70 | 180 |
| Winter rye | 70 | 170 |
| Winter triticale | 70 | 190 |
| Summer barley | 50 | 140 |
| Oats | 55 | 130 |
| Grain maize | 90 | 200 |
| Silage maize | 450 | 200 |
| Sugar beet | 650 | 170 |
| Potatoes | 450 | 180 |

| Crop | Yield level in qt/ha | Nitrogen requirement value in kg N/ha |
|----------------|----------------------|---------------------------------------|
| Early potatoes | 400 | 220 |
| Sunflowers | 30 | 120 |
| Oil seed flax | 20 | 100 |

Table 3
Additions and deductions due to deviating yield levels in relation to arable crops

Preliminary remarks and notes:

- The yield difference is the difference between the yield level as per table 2 and the actual average yield level over the last three years. If the actual yield level in one of the last three years deviates by more than 20% from the yield level of the respective previous year, the yield level of the respective previous year may be used to determine the yield difference instead of the actual yield level of the deviating year.
- Additions and deductions shall as a rule be based on the respective yield difference in accordance with the stipulations of columns 3 and 4. By way of derogation from this, additions of more than 40 kg N/ha shall be permissible in the case of higher yield levels, if the authority competent under Land law has approved of this. Lower yield differences may be taken into account proportionately.

| 1 | 2 | 3 | 4 |
|-------------------------|------------------------------|--|---|
| Crop | Difference in yield in qt/ha | Maximum additions in the case of higher yields in kg N/ha per unit | Minimum deductions in the case of lower yields in kg N/ha per unit as |
| Rape | 5 | 10 | 15 |
| Cereals and grain maize | 10 | 10 | 15 |
| Silage maize | 50 | 10 | 15 |
| Sugar beet | 100 | 10 | 15 |
| Potatoes | 50 | 10 | 10 |

Table 4
Nitrogen requirement values
for vegetable crops and strawberries as a function of the yield level;
Residual nitrogen from harvest residues of the previous crop for the follower crop in the same year

Preliminary remarks and notes:

- The nitrogen-requirement value corresponds to the nutrient requirement for nitrogen during a cultivation period.
- The nitrogen-requirement values in the table relate to the given yield level and the quantity of available nitrogen (Nmin) which is to be determined based on the sampling depth laid down in column 4.
- If the entire plant is removed (for example the mechanical harvesting of leeks), no deductions as per column 5 are to be made.
- If the testing of the nitrogen reserve (Nmin) of the soil is carried out at the earliest four weeks after the harvest residues of the previous crop have been worked in, the deductions as per column 5 may be reduced by up to two thirds.
- The determination of the quantity of nitrogen available in the soil is, by way of derogation from section 4 subsection 4, to be carried out in the 4th growing week for the crops denoted with "*" in column 3 and in the 6th growing week for the crops denoted with "*" in column 3.

| 1 | 2 | 3 | 4 | 5 |
|------------------------|-------------|----------------------------|----------------|---|
| Crop | Yield level | Nitrogen-requirement value | Sampling depth | Deductions due to residual nitrogen from the harvest residues for the |
| | in qt/ha | in kg N/ha | in cm | in kg N/ha |
| Cauliflowers | 350 | 300 | 60 | 80 |
| broccoli | 150 | 310 | 60 | 100 |
| Bush beans | 120 | 110 | 60 | 45 |
| Chicory roots | 450 | 135 | 90 | 40 |
| Chinese cabbage | 700 | 210 | 60 | 45 |
| Dill, fresh market | 200 | 85 | 30 | 5 |
| Dill, industrial goods | 250 | 105 | 30 | 25 |

| 1 | 2 | 3 | 4 | 5 |
|---------------------------------------|-------------|----------------------------|----------------|---|
| Crop | Yield level | Nitrogen-requirement value | Sampling depth | Deductions due to residual nitrogen from the harvest residues for the |
| | in qt/ha | in kg N/ha | in cm | in kg N/ha |
| Strawberries, planting | 0 | 60 | 0 – 30 | 0 |
| Strawberries, spring | 140 | 60 | 0 – 30 | 0 |
| Strawberries, post-harvest | 140 | 60 | 0 – 30 | 0 |
| Lamb's lettuce | 80 | 85 | 15 | 5 |
| Lamb's lettuce, big leaves | 130 | 110 | 15 | 5 |
| Peas | 80 | 85 | 60 | 65 |
| Kale | 400 | 200 | 60 | 35 |
| Gherkin | 800 | 210 | 30 | 50 |
| Florence fennel | 400 | 200 | 60 | 45 |
| Kohlrabi | 450 | 230 | 30 | 30 |
| Pumpkins | 400 | 140 | 60 | 50 |
| May turnip (with leaves) | 650 | 170 | 30 | 15 |
| Carrots, bunching | 600 | 115* | 60 | 10 |
| Carrots, processing | 900 | 165** | 90 | 45 |
| Carrots, wash | 700 | 125** | 60 | 30 |
| Parsnips | 400 | 140* | 60 | 50 |
| Parsley, leaf, until the 1st cut | 240 | 160* | 60 | 10 |
| Parsley, leaf, after one cut | 160 | 100 | 60 | 10 |
| Parsley, rooted | 400 | 130** | 60 | 45 |
| leek | 600 | 250 | 60 | 55 |
| Radishes, small | 300 | 110 | 30 | 5 |
| Winter radishes, bunching | 500 | 140 | 30 | 10 |
| Radishes, winter | 550 | 175 | 60 | 30 |
| Radishes, Japanese | 1 000 | 230 | 60 | 45 |
| Rhubarb 1st year | 0 | 130 | 30 | |
| Rhubarb 2nd year, before harvest | 100 | 100 | 30 | |
| Rhubarb 3rd year, before harvest | 200 | 120 | 60 | |
| Rhubarb from 4th year, before harvest | 350 | 140 | 60 | |
| Rhubarb 2nd year, after harvest | | 150 | 60 | |
| Rhubarb 3rd year, after harvest | | 170 | 90 | |
| Rhubarb from 4th year, after harvest | | 140 | 90 | |
| Brussels sprouts | 250 | 310 | 90 | 130 |
| Red beet | 600 | 250 | 60 | 50 |

| 1 | 2 | 3 | 4 | 5 |
|---|-------------|----------------------------|----------------|---|
| Crop | Yield level | Nitrogen-requirement value | Sampling depth | Deductions due to residual nitrogen from the harvest residues for the |
| | in qt/ha | in kg N/ha | in cm | in kg N/ha |
| Red cabbage | 600 | 260 | 60 | 60 |
| Arugula | 175 | 150 | 30 | 20 |
| Arugula, large leaves | 300 | 210 | 30 | 20 |
| Lettuces, Baby leaf lettuces | 140 | 90 | 30 | 0 |
| Lettuces, leafy, green (lollo, oak-leaf, | 350 | 130 | 30 | 10 |
| Lettuces, leafy, red (lollo, oak-leaf, | 300 | 115 | 30 | 10 |
| Lettuces, iceberg lettuces | 600 | 175 | 30 | 15 |
| Lettuces, endives, frisee | 350 | 150 | 60 | 15 |
| Lettuces, endives, flat-leaf | 600 | 190 | 60 | 20 |
| Lettuces, butterhead lettuces | 500 | 150 | 30 | 10 |
| Lettuces, radicchio lettuce | 280 | 140 | 60 | 30 |
| Lettuces, various types | 450 | 150 | 30 | 10 |
| Lettuces, cos | 450 | 140 | 60 | 10 |
| Lettuce, gem | 300 | 150 | 30 | 15 |
| Lettuces, sugarloaf | 600 | 190 | 60 | 20 |
| Chives, sown, until the 1st cut | 300 | 210** | 60 | 10 |
| Chives, sown, after one cut | 200 | 180 | 60 | 25 |
| Chives, planted for forcing | 280 | 240** | 60 | 55 |
| Black salsify | 200 | 75** | 90 | 25 |
| Celeriac, bunching | 600 | 205 | 30 | 10 |
| Celeriac | 650 | 220 | 60 | 40 |
| Celery | 500 | 230 | 30 | 40 |
| Asparagus 1st year | 0 | 140 | 60 | |
| Asparagus 2nd year | 20 | 160 | 90 | |
| Asparagus 3rd year | 80 | 160 | 90 | |
| Asparagus from 4th year | 100 | 80 | 90 | |
| Spinach, leaf, fresh market, Baby | 100 | 100 | 30 | 10 |
| Spinach, leaf, standard | 250 | 190 | 30 | 30 |
| Spinach, chopped, standard | 300 | 205 | 30 | 30 |
| Runner beans, standard | 250 | 100 | 60 | 70 |
| Teltow turnips (<i>Brassica rapa</i> L. subsp. | 150 | 110 | 60 | 30 |
| White cabbage, fresh market | 700 | 260 | 60 | 75 |
| White cabbage, industry | 1 000 | 320 | 90 | 75 |
| Savoy cabbage | 400 | 285 | 60 | 80 |
| Zucchini | 650 | 250 | 60 | 85 |
| Sweet corn | 200 | 160 | 90 | 60 |
| Onions, bunching | 680 | 210* | 30 | 15 |
| Onions | 600 | 155** | 60 | 30 |

Table 5
Additions and deductions due to deviating yield levels in relation to vegetable crops

Preliminary remarks and notes:

The yield difference is the difference between the yield level as per table 4 and the actual average yield level over the last three years. If the actual yield level in one of the last three years deviates by more than 20% from the yield level of the respective previous year, the yield level of the respective previous year may be used to determine the yield difference instead of the actual yield level of the deviating year.

| 1 | 2 | 3 | 4 |
|-----------------------------------|--------------------------------|--|--|
| Crop | Difference in yield in percent | Additions in the case of higher yields in kg N/ha per unit | Deductions in the case of lower yields in kg N/ha per unit as per column 2 |
| Gherkins | 20 | 40 | 40 |
| Celeriac | 20 | 40 | 40 |
| Head cabbage | 20 | 40 | 40 |
| Leeks | 20 | 40 | 40 |
| Radishes, winter | 20 | 40 | 40 |
| Brussels sprouts | 20 | 40 | 40 |
| all other crops listed in Table 4 | 20 | 20 | 20 |

Table 6
Deductions due to residual nitrogen from the soil reserve

Preliminary remarks and notes:

If the soil has a high humus content, a deduction as per column 2 must be made.

| 1 | 2 |
|--------------------|------------------------------|
| Humus content in % | Minimum deduction in kg N/ha |
| greater than 4.0 | 20 |

Table 7
Deductions according to the previous crops and intercrops

| Previous crop (main crop of the previous year) | Minimum deduction in kg N/ha |
|--|------------------------------|
| Grassland, set-aside land for permanent fallow, alfalfa, clover, clover grass, rotational set-aside with legumes | 20 |
| Rotational set-aside without legumes, sugar-beet without leaves | 10 |
| Rape, grain legumes, cabbages | 10 |
| Ley grass | 10 |
| Cereals (with and without straw), silage maize, grain maize, potatoes, vegetables without cabbages | 0 |
| Intercrop | |
| Non-legumes, winter-killed | 0 |
| Non-legumes, not winter-killed | |
| – worked in in spring | 20 |
| – worked in in autumn | 0 |
| Legumes, winter-killed | 10 |
| Legumes, not winter-killed | |
| – worked in in spring | 40 |
| – worked in in autumn | 10 |
| Fodder legumes, utilised | 10 |
| Other intercrops, utilised | 0 |

Table 8
Fertiliser requirement calculation for grassland, permanent pasture and multi-cut fodder crops

| Factors for determining the fertiliser requirement | | Table to be applied |
|--|--|--|
| 1 | Crop (grassland, permanent pasture, multi-cut fodder crops) | Table 9 |
| 2 | Nitrogen requirement value in kg N/ha | Table 9 |
| 3 | Yield level according to the nitrogen-requirement value table in qt dry weight / | Table 9 |
| 4 | Where relevant raw-protein content according to the nitrogen-requirement value table in | Table 9 |
| 5 | Yield level as an average over the last three years in qt dry weight/ha | Table 10 |
| 6 | Where relevant, raw-protein content as an average over the last three years in % of raw protein content in the dry weight, insofar as data are available | Table 10 |
| 7 | Difference in yield in qt/ha resulting from | lines 3 and 5 |
| 8 | Where relevant difference in the % of raw protein in the dry weight resulting | lines 4 and 6 |
| Additions and reductions in kg | | |
| 9 | Residual nitrogen from organic fertilisation in previous years | Section 4 subsection 2, |
| 10 | Yield difference | Line 7, table 10: |
| 11 | Where relevant difference in raw protein | Line 8, table 10: |
| 12 | Residual nitrogen from the soil reserve | Table 11 |
| 13 | Residual nitrogen from legume nitrogen fixation | Table 12 |
| 14 | Nitrogen-fertiliser requirement during vegetation in kg N/ha | Total of the values in lines 2, 9 and 10 |
| 15 | Addition due to circumstances arising subsequently, in particular stock development or climatic events | Section 3 subsection 3, third and fourth sentences |

Table 9
Nitrogen requirement calculation for grassland, permanent pasture and multi-cut fodder crops

Preliminary remarks and notes:

1. In the case of "Pasture intensive", the given values shall apply to grassland or permanent pasture sites with a fourfold to fivefold use; this takes into account nitrogen feedback from meadow excrement.
2. In the case of "Pasture extensive", the given values shall apply to grassland or permanent pasture sites with a twofold to threefold use; this takes into account nitrogen feedback from meadow excrement.
3. In the case of "ley grass (3 - 4 cuts / year)", the given values shall apply to sites that are periodically dry.

| | Yield level (net) | Raw protein content (% raw protein: 6.25 = kg N/qt) | Nitrogen-requirement value |
|--------------------------------------|---------------------|---|----------------------------|
| | in qt dry weight/ha | in % of raw protein RP | in kg N/ha |
| Grassland / permanent pasture | | | |
| Utilised, 1 cut p.a. | 40 | 8.6 | 55 |
| Utilised, 2 cuts p.a. | 55 | 11.4 | 100 |
| Utilised, 3 cuts p.a. | 80 | 15.0 | 190 |
| Utilised, 4 cuts p.a. | 90 | 17.0 | 245 |
| Utilised, 5 cuts p.a. | 110 | 17.5 | 310 |
| Utilised, 6 cuts p.a. | 120 | 18.2 | 350 |
| Pasture / mowing pasture | | | |
| Pasture intensive | 90 | 18.0 | 130 |
| Mowing pastures, 60% pasture | 94 | 17.6 | 190 |

| | Yield level (net) | Raw protein content (% raw protein: 6.25 = kg N/qt) | Nitrogen-requirement value |
|--|---------------------|---|----------------------------|
| | in qt dry weight/ha | in % of raw protein RP | in kg N/ha |
| Mowing pastures, 20 % pasture | 98 | 17.2 | 245 |
| Pasture extensive | 65 | 12.5 | 65 |
| multi-cut fodder crops | | | |
| Ley grass (5 cuts / year) | 150 | 16.6 | 400 |
| Ley grass (3 - 4 cuts / year) | 120 | 16.2 | 310 |
| Clover grass / alfalfa grass (3 - 4 cuts / year) | 120 | 18.2 | 350 |
| Red clover / alfalfa in monoculture | 110 | 20.5 | 360 |

Table 10
Additions and deductions due to deviating yield levels or raw protein content

Preliminary remarks and notes:

1. The yield difference is the difference between the yield level as per table 9 and the actual average yield level over the last three years. If the actual yield level in one of the last three years deviates by more than 20% from the yield level of the respective previous year, the yield level of the respective previous year may be used to determine the yield difference instead of the actual yield level of the deviating year.
2. The raw protein difference is the difference between the raw protein content as per table 9 and the actual average raw protein content over the last three years. It is only to be determined if the farm has test results. If the actual raw protein content in one of the last three years deviates by more than 20% from the raw protein content of the respective previous year, the raw protein content of the respective previous year may be used to determine the raw protein difference instead of the actual raw protein level of the deviating year.
3. Additions and deductions shall be based on the respective difference in accordance with the stipulations of columns 2 and 3.
4. In the case of "ley grass (3 - 4 cuts / year)", the given values shall apply to sites that are periodically dry.

| 1 | 2 | 3 |
|---|---|--|
| | Additions and deductions in kg N/ha for | |
| | per 10 qt dry weight/ha yield | per 1% raw protein in the dry weight Raw protein |
| Grassland / permanent pasture | | |
| Utilised, 1 cuts p.a. | 14 | 6 |
| Utilised, 2 cuts p.a. | 18 | 9 |
| Utilised, 3 cuts p.a. | 24 | 13 |
| Utilised, 4 cuts p.a. | 27 | 14 |
| Utilised, 5 cuts p.a. | 28 | 18 |
| Utilised, 6 cuts p.a. | 29 | 19 |
| Pasture / mowing pasture | | |
| Pasture intensive | 15 | 8 |
| Mowing pastures, 60% pasture | 20 | 11 |
| Mowing pastures, 20 % pasture | 25 | 14 |
| Pasture extensive | 10 | 5 |
| multi-cut fodder crops | | |
| Ley grass (5 cuts / year) | 27 | 24 |
| Ley grass (3 - 4 cuts / year) | 26 | 19 |
| Clover grass / alfalfa grass (3 - 4 cuts / year) with grass making up > 50% | 29 | 19 |

Table 11
Deductions due to residual nitrogen from the soil reserve

| | Minimum deductions in kg N/ha |
|--|-------------------------------|
| Grassland / permanent pasture | |
| soil in grassland or permanent pasture with low to high humus content (less than 8% organic substance) | 10 |
| soil in grassland or permanent pasture with high to very high humus content (8% to less than 15 % organic substance) | 30 |
| half-bog soil in grassland or permanent pasture (15 % to less than 30 % organic substance) | 50 |
| Bogs (30% and more organic substance)fens | |
| Upland fens | 50 |
| Lowland fens | 80 |
| multi-cut fodder crops | |
| Ley grass (without legumes) | 0 |

Table 12
Deductions for residual nitrogen from legume nitrogen fixation

| | Minimum deductions in kg N/ha |
|--|-------------------------------|
| Legumes in grassland/permanent pasture | |
| Yield percentage from legumes 5 - 10% | 20 |
| Yield percentage from legumes greater than 10 - 20 % | 40 |
| Yield percentage from legumes greater than 20 % | 60 |
| Legumes in multi-cut fodder crop cultivation | |
| Clover grass / alfalfa grass per 10% yield percentage from legumes | 30 |
| Red clover / alfalfa in monoculture | 360 |

Annex 5

(to section 8 subsections 1 - 5, section 10, subsection 1, third sentence)

Annual Nutrient Management Plan
for nitrogen (N) or phosphate (P5O5) (underline nutrient) for the fertilisation year

1. Recording of the data for the nutrient management plan

- Name uniquely identifying the farm:
- Size of the farm in hectares of land used for farming:
- Start and end dates of the fertilisation year:
- Date the plan was completed:

The nutrient management plan shall be drawn up by

- 1.1 comparing the input and removal for the agricultural land overall; ()
- 1.2 Summary of the balance results for each land parcel, each ()
() management unit or each combined area in accordance with section 3 subsection 2, third sentence.

2. Recording of the data for the nutrient management plan as per no. 1.1 or 1.2.

Data necessary to be recorded as per no. 1.2:

- Name uniquely identifying the land parcel, the management unit or the combined area as per section 3 subsection 2, third sentence.
- Name uniquely identifying the land parcel, the management unit or the combined area as per section 3 subsection 2, third sentence:
- In respect of grassland, permanent pasture, land with multi-cut forage-crop cultivation:
 Number of utilised cuts:
 Number of grazing days on the land parcel:
 ..
 Number and type of animals put out to graze:

| | 1 | 2 | 3 | 4 |
|----|---|--------------------|---|--------------------|
| | Input (on all the land, management unit, invidual parcel, combined land) | Nutrients in kg | removal (from all the land, management unit, invidual parcel, combined land) | Nutrients in kg |
| 1 | Mineral fertilisers | | Main harvest products ¹ | |
| 2 | Livestock manure | | Secondary-harvest produce | |
| 3 | Pasturage | | Pasturage | |
| 4 | Other organic fertilisers ² | | | |
| 5 | Soil improvers | | | |
| 6 | Growing media | | | |
| 7 | Plant strengtheners | | | |
| 8 | Waste for disposal (section 28 subsections 2 or 3) | | | |
| 9 | Nitrogen fixation by means of | | | |
| 10 | Total input | | Total removal | |
| 11 | unavoidable losses and necessary additions as per section 8 subsection | | | |
| 12 | Difference between input and removal | | | |

¹ In the case of land under coarse fodder crops, the nutrient output is the result of the calculation as per section 8 subsection 3.

² In the case of organic fertilisers consisting of compost, the imported quantity of total nitrogen may be distributed over three years.

³ Detailed break-down necessary.

(to section 8 subsection 1, section 9 subsection 2, section 10
subsection 1, third sentence

Multiyear Nutrient Management Plan

rolling averages for nitrogen (3 years) and phosphate (6 Years)

| | | | |
|--|---|--|--|
| Last fertiliser or business year taken into account: Start and end dates of the fertilisation year: Name uniquely identifying the farm: Size of in hectares of the land used for farming on the farm: Method used to arrive at the figures: Date the plan was completed: | | | |
| 1 | Nutrient management plan as an average of several consecutive years as per Annex 5 | | |
| 2 | | Difference in the fertilisation year / business year kilogramme / | |
| 3 | | Nitrogen: Fertilisation year and two | Phosphate: Fertilisation year and five |
| 4 | Previous year: | – | |
| 5 | Previous year: | – | |
| 6 | Previous year: | – | |
| 7 | Previous year: | | |
| 8 | Previous year: | | |
| 9 | Fertilisation year: | | |
| 10 | Average difference per hectare per year | | |

Annex 7

(to section 8 subsection 2 Annex 5)

Nitrogen content of plant products

Table 1 Arable
crops

| 1 | 2 | 3 | 4 | 5 |
|----------------------|-------------------------------|--------------------------|------------------------|--------------------|
| Crop | Harvested product | Percentage of dry matter | HNV ¹ 1 : x | kg/N/qt fresh mass |
| Cereals, grain maize | | | | |
| Wheat | Grain (12 % RP ²) | 86 | – | 1.81 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.8 | 2.21 |
| | Grain (14 % RP ²) | 86 | – | 2.11 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.8 | 2.51 |
| | Grain (16 % RP ²) | 86 | – | 2.41 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.8 | 2.81 |
| Winter barley | Grain (12 % RP ²) | 86 | – | 1.65 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.7 | 2.00 |
| | Grain (13 % RP ²) | 86 | – | 1.79 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.7 | 2.14 |
| Rye | Grain (11 % RP ²) | 86 | – | 1.51 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.9 | 1.96 |
| | Grain (12 % RP ²) | 86 | – | 1.65 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.9 | 2.10 |
| Winter triticale | Grain (12 % RP ²) | 86 | – | 1.65 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.9 | 2.10 |
| | Grain (13 % RP ²) | 86 | – | 1.79 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.9 | 2.24 |
| Summer feed barley | Grain (12 % RP ²) | 86 | – | 1.65 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.8 | 2.05 |
| | Grain (13 % RP ²) | 86 | – | 1.79 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.8 | 2.19 |
| Brewing barley | Grain (10 % RP ²) | 86 | – | 1.38 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.7 | 1.73 |
| | Grain (11 % RP ²) | 86 | – | 1.51 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 0.7 | 1.86 |
| Oats | Grain (11 % RP ²) | 86 | – | 1.51 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 1.1 | 2.06 |
| | Grain (12 % RP ²) | 86 | – | 1.65 |
| | Straw | 86 | – | 0.50 |
| | Grain + straw ³ | – | 1.1 | 2.20 |
| Cereals | Whole crop | 35 | – | 0.56 |

| 1 | 2 | 3 | 4 | 5 |
|---|-------------------------------|--------------------------|------------------------|--------------------|
| Crop | Harvested product | Percentage of dry matter | HNV ¹ 1 : x | kg/N/qt fresh mass |
| Grain maize | Grain (10 % RP ²) | 86 | – | 1.38 |
| | Straw | 86 | – | 0.90 |
| | Grain + straw ³ | – | 1.0 | 2.28 |
| | Grain (11 % RP ²) | 86 | – | 1.51 |
| | Straw | 86 | – | 0.90 |
| | Grain + straw ³ | – | 1.0 | 2.41 |
| Annual grain legumes | | | | |
| Broad beans | Grain (30 % RP ²) | 86 | – | 4.10 |
| | Straw | 86 | – | 1.50 |
| | Grain + straw ³ | – | 1.0 | 5.60 |
| Peas | Grain (26 % RP ²) | 86 | – | 3.60 |
| | Straw | 86 | – | 1.50 |
| | Grain + straw ³ | – | 1.0 | 5.10 |
| Lupins blue | Grain (33 % RP ²) | 86 | – | 4.48 |
| | Straw | 86 | – | 1.50 |
| | Grain + straw ³ | – | 1.0 | 5.98 |
| Soybeans | Grain (32 % RP ²) | 86 | – | 4.40 |
| | Straw | 86 | – | 1.50 |
| | Grain + straw ³ | – | 1.0 | 5.90 |
| Oleaginous fruits | | | | |
| Rape | Grain (23 % RP ²) | 91 | – | 3.35 |
| | Straw | 86 | – | 0.70 |
| | Grain + straw ³ | – | 1.7 | 4.54 |
| Sunflowers | Grain (20 % RP ²) | 91 | – | 2.91 |
| | Straw | 86 | – | 1.00 |
| | Grain + straw ³ | – | 2.0 | 4.91 |
| Mustard | Grain + straw | 91 | – | 5.08 |
| | Straw | 86 | – | 0.70 |
| | Grain + straw ³ | – | 1.5 | 6.13 |
| Oil seed flax | Grain | 91 | – | 3.50 |
| | Straw | 86 | – | 0.53 |
| | Grain + straw ³ | – | 1.5 | 4.30 |
| Fibre plants | | | | |
| Flax (fibre flax) | Whole crop | 86 | – | 1.00 |
| Hemp (100 – 150 qt/ha dry weight) | Whole crop | 40 | – | 0.4 |
| Miscanthus grass (150 – 200 qt/ha dry weight) | Whole crop | 80 | – | 0.15 |
| Root crops | | | | |
| Potatoes | bulb | 22 | – | 0.35 |
| | haulm | 15 | – | 0.20 |
| | Bulb + haulm ³ | – | 0.2 | 0.39 |
| Sugar beet | Beet | 23 | – | 0.18 |
| | leaves | 18 | – | 0.40 |
| | Beet + leaves ³ | – | 0.7 | 0.46 |
| Fodder sugar beet | Beet | 15 | – | 0.18 |
| | Leaves | 16 | – | 0.30 |
| | Beet + leaves ³ | – | 0.4 | 0.30 |
| Common beet | Beet | 12 | – | 0.14 |
| | Leaves | 16 | – | 0.25 |
| | Beet + leaves ³ | – | 0.4 | 0.24 |

| 1 | 2 | 3 | 4 | 5 |
|----------------------------------|---------------------------|--------------------------|------------------------|--------------------|
| Crop | Harvested product | Percentage of dry matter | HNV ¹ 1 : x | kg/N/qt fresh mass |
| Forage crops | | | | |
| Silage maize | Whole crop | 28 | – | 0.38 |
| Red clover | Whole crop | 20 | – | 0.65 |
| Alfalfa, | Whole crop | 20 | – | 0.65 |
| Clover grass | Whole crop | 20 | – | 0.58 |
| Alfalfa grass | Whole crop | 20 | – | 0.58 |
| Ryegrass (ley grass) | Whole crop | 20 | – | 0.53 |
| Forage intercrops | Whole crop | 15 | – | 0.43 |
| Plants for propagation | | | | |
| Propagation of grass seed | Seed | 86 | – | 2.20 |
| | Straw | 86 | – | 1.50 |
| | Seed + straw ³ | – | 8.0 | 14.20 |
| Clover seed, alfalfa propagation | seed | 91 | – | 5.50 |
| | Straw | 86 | – | 1.50 |
| | Seed + straw ³ | – | 8.0 | 17.50 |

¹ Ratio between primary-harvest produce and secondary-harvest produce.

² Raw-protein content in the dry matter.

³ Nutrient content of primary-harvest produce and secondary-harvest produce relative to the primary-harvest produce.

Table 2
Vegetable crops and strawberries

| 1 | 2 | 3 |
|----------------------------|---|--|
| Crop | Nitrogen content in kg N/100 qt fresh mass entire plant | Nutrient removal in kg N/100 qt fresh mass primary-harvest produce |
| Cauliflowers | 31.4 | 28 |
| Broccoli | 37.1 | 45 |
| Bush beans | 34.7 | 25 |
| Chicory | 25.0 | 25 |
| Chinese cabbage | 16.3 | 15 |
| Dill, fresh market | 30.0 | 30 |
| Dill, industrial goods | 30.0 | 30 |
| Strawberries | | 17 |
| Lamb's lettuce | 45.0 | 45 |
| Lamb's lettuce, big leaves | 45.0 | 45 |
| Peas | 52.0 | 100 |
| Kale | 46.2 | 49 |
| Gherkin | 17.1 | 15 |
| Florence fennel | 24.3 | 20 |
| Kohlrabi | 29.8 | 28 |
| Swedes | | 26 |
| Pumpkins | 25.0 | 25 |
| May turnip (with leaves) | 17.0 | 17 |
| Carrots, bunching | 17.0 | 17 |

| 1 | 2 | 3 |
|--|---|---|
| Crop | Nitrogen content in kg N/100 qt fresh mass entire plant | Nutrient removal in kg N/100 qt fresh mass primary- harvest produce |
| Carrots, processing | 17.3 | 13 |
| Carrots, wash | 16.8 | 13 |
| Parsnips | 33.3 | 25 |
| Parsley, leaf, until the 1st cut | 45 | 45 |
| Parsley, leaf, after one cut | 43.6 | 45 |
| Parsley, rooted | 42.0 | 42 |
| Leeks | 27.0 | 25 |
| Radishes, small | 20.0 | 20 |
| Winter radishes, bunching | 17.0 | 17 |
| Radishes, winter | 17.1 | 14 |
| Radishes, Japanese | 13.1 | 10 |
| Rhubarb from start of yield | | 18 |
| Brussels sprouts | 46.9 | 65 |
| Red beet | 27.0 | 28 |
| Red cabbage | 25.6 | 22 |
| Arugula | 36.7 | 40 |
| Arugula, large leaves | 36.7 | 40 |
| Lettuces, Baby leaf lettuces | 35.0 | 35 |
| Lettuces, leafy, green (lollo, oak-leaf, cabbage lettuce) | 19.0 | 19 |
| Lettuces, leafy, red (lollo, oak-leaf, cabbage lettuce) | 19.0 | 19 |
| Lettuces, iceberg lettuces | 15.5 | 14 |
| Lettuces, endives, frisee | 25.0 | 25 |
| Lettuces, endives, flat-leaf | 20.0 | 20 |
| Lettuces, butterhead lettuces | 18.0 | 18 |
| Lettuces, radicchio lettuce | 25.0 | 25 |
| Lettuces, various types | 19.0 | 19 |
| Lettuces, cos | 20.0 | 20 |
| Lettuces, gem | 26.8 | 24 |
| Lettuces, sugarloaf | 20.0 | 20 |
| Chives, sown, until the 1st cut | 50.0 | 50 |
| Chives, sown, after one cut | 50.0 | 50 |
| Chives, planted for forcing | 50.0 | 50 |
| Black salsify | 23.8 | 23 |
| Celeriac, bunching | 27.0 | 27 |
| Celeriac | 26.7 | 25 |
| Celery | 25.0 | 25 |
| Asparagus from beginning of yield | | 26 |
| Spinach, leaf, fresh market, Baby | 45.0 | 45 |
| Spinach, leaf, standard | 40.0 | 40 |

| 1 | 2 | 3 |
|---|---|---|
| Crop | Nitrogen content in kg N/100 qt fresh mass entire plant | Nutrient removal in kg N/100 qt fresh mass primary- harvest produce |
| Spinach, chopped, standard | 36.0 | 36 |
| Runner beans, standard | 29.5 | 25 |
| Teltow turnips (<i>Brassica rapa</i> L.) | 32.5 | 45 |
| White cabbage, fresh market | 24.2 | 20 |
| White cabbage, industry | 23.3 | 20 |
| Savoy cabbage | 37.5 | 35 |
| Zucchini | 23.0 | 16 |
| Sweet corn | 31.7 | 35 |
| Onions, bunching | 20.0 | 20 |
| Onions | 22.4 | 18 |

Table 3
Grassland

| Grassland | Harvested product | Nitrogen content |
|-------------------------------|-------------------|---------------------|
| 1 use (40 qt/ha dry weight) | Whole crop | 1.38 |
| 2 uses (55 qt/ha dry weight) | Whole crop | 1.82 |
| 3 uses (80 qt/ha dry weight) | Whole crop | 2.40 |
| 4 uses (90 qt/ha dry weight) | Whole crop | 2.70 |
| 5 uses (110 qt/ha dry weight) | Whole crop | 2.80 |

Equipment for spreading fertilisers,
soil improvers, growing media or plant strengtheners
that do not correspond to the generally recognised rules of the trade

1. Solid muck spreaders without controlled muck injection to the distributor
2. slurry and liquid manure tankers with free outflow on the spreader
3. spot sprayers with upward spray
4. slurry tankers with a vertical, open spray plate to distribute slurry
5. rotary sprayers for spraying slurry.

Annex 9
(to section 12)

Quantities of manure produced in livestock husbandry
Conversion factor to determine livestock units (LU)

Table 1
Quantities of manure produced in livestock husbandry in t/animal or m³/animal

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | |
|----|--|---|---|--------------------|--|------------------------------|------------------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Dairy livestock farming | | | kg fresh mass/anim | t/animal place | m ³ /animal place | m ³ /animal place |
| 1 | Calf rearing | 0 to 16 weeks; 90 kg weight increase per calf; 3 throughputs p.a. | | 3.0 | 1.84 | 1.5 | 0.2 |
| 2 | Rearing of young cattle Age of first calving 27 months; 605 kg weight | Grassland farm, with and without land under "nature | Conventional | 3.0 | 4.0 | 4.65 | 1.2 |
| 3 | | | Extensive | 3.0 | 4.0 | | |
| 4 | | Forage-production farm | with pasture | 3.0 | 4.0 | | |
| 5 | | | Kept in stall | 3.0 | 4.0 | | |
| 6 | Milk production Output relative to ECM (4.0 % fat, 3.4 % protein); 0.9 calves | Grassland farm (with pasturage) | 6 000 kg ECM | 4.0 | 7.2 | 9.5 | 3.0 |
| 7 | | | 8 000 kg ECM | 4.0 | 7.5 | 10.0 | 3.2 |
| 8 | | | 10 000 kg ECM | 5.0 | 8.0 | 10.5 | 3.4 |
| 9 | | Grassland farm (without pasturage, with hay) | 6 000 kg ECM | 4.0 | 7.2 | 9.5 ⁴ | 3.0 ⁴ |
| 10 | | | 8 000 kg ECM | 4.0 | 7.5 | 10.0 ⁴ | 3.2 ⁴ |
| 11 | | | 10 000 kg ECM | 5.0 | 8.0 | 10.5 ⁴ | 3.4 ⁴ |
| 12 | | | 12 000 kg ECM | 6.0 | 8.5 | 11.0 ⁵ | 3.6 ⁵ |
| 13 | | | Forage-production farm (with pasturage) | 6 000 kg ECM | 4.0 | 7.2 | 9.5 |
| 14 | | 8 000 kg ECM | | 4.0 | 7.5 | 10.0 | 3.2 |
| 15 | | 10 000 kg ECM | | 5.0 | 8.0 | 10.5 | 3.4 |
| 16 | | 12 000 kg ECM | | 6.0 | 7.2 | 11.0 ⁵ | 3.6 ⁵ |
| 17 | | Forage-production farm (without pasturage, with hay) | | 6 000 kg ECM | 4.0 | 7.5 | 9.5 |
| 18 | 8 000 kg ECM | | | 4.0 | 8.0 | 10.0 | 3.2 |
| 19 | 10 000 kg ECM | | | 5.0 | 8.5 | 10.5 | 3.4 |
| 20 | 12 000 kg ECM | | | 6.0 | 8.5 | 11.0 ⁵ | 3.6 ⁵ |
| 21 | Light breeds | Forage-production farm | | 5 000 kg ECM | 3.0 ⁶ | 6.9 | 9.25 ⁶ |
| 22 | | | 7 000 kg ECM | 4.0 ⁶ | 7.4 | 9.75 ⁶ | 3.1 ⁶ |
| 23 | | | 9 000 kg ECM | 5.0 ⁶ | 7.9 | 10.25 ⁶ | 3.3 ⁶ |
| | Cattle fattening | | | kg fresh mass/anim | t/animal place | m ³ /animal place | m ³ /animal place |
| 24 | Production of rosé veal | 50 to 350 kg LW; 1.3 fattening rounds p.a. | | 0.5 ⁴ | 0.169 | 2.0 ⁶ | 0.25 ⁶ |
| 25 | Calf fattening | 50 to 250 kg LW | Milk replacer feed | 0.5 | 0.94 | 1.25 | 0.30 |
| 26 | | 50 to 260 kg LW | Milk replacer feed | 0.5 ⁴ | 0.94 | 1.25 ⁴ | 0.30 ⁴ |
| 27 | Rearing of young bulls | 80 to 210 kg LW | Standard feed | 0.5 | 2.3 | 2.75 | 0.25 |
| 28 | | | reduced N / | 0.5 | 2.3 | 2.75 | 0.25 |

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | |
|----|--|--|--------------------------|-----------------------|--|---------------------------------|---------------------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29 | Bull fattening | to 625 kg LW (19 months) | from calf 45 kg LW | 1.0 | 2.3 | 3.35 | 1.2 |
| 30 | | to 700 kg LW | from calf 45 kg LW | 1.0 | 2.3 | 3.65 | 1.5 |
| 31 | | | from 80 kg LW | 1.0 | 2.3 | 3.35 | 1.5 |
| 32 | | | from 210 kg LW | 1.0 | 2.3 | 3.85 | 1.5 |
| | Suckler cow husbandry | | | kg fresh mass/anim | t/animal place | m ³ /animal place | m ³ /animal place |
| 33 | 6 months suckling period | 500 kg LW; 0.9 calves per cow p.a.; (200 kg weaning weight) | | 4.0 | 6.0 | 8.0 | 2.75 |
| 34 | | 700 kg LW; 0.9 calves per cow p.a.; (230 kg weaning weight) | | 5.0 | 7.9 | 10 | 3.0 |
| 35 | 9 months suckling period | 700 kg LW; 0.9 calves per cow p.a.; (340 kg weaning weight) | | 5.0 | 7.9 | 10 ⁴ | 3.0 ⁴ |
| | Pig farming | | | kg fresh mass/anim | t/animal place | m ³ /animal place | m ³ /animal place |
| 36 | Piglet rearing up to 8 kg LW | 22 piglets reared 217 kg weight increase per place p.a. | Standard feed | 2.0 | 1.75 | 2.0 | 0.6 |
| 37 | | | reduced N / reduced P | | | | |
| 38 | | | Severe discolouration | | | | |
| 39 | | 25 piglets reared 239 kg weight increase per place p.a. | Standard feed | 2 | 1.8 | 2.1 ⁵ | 0.65 ⁵ |
| 40 | | | reduced N / reduced P | | | | |
| 41 | | | Severe discolouration | | | | |
| 42 | Piglet rearing up to 8 kg LW | 28 piglets reared 264 kg weight increase per place p.a. | Standard feed | 2 | 1.85 | 2.2 ⁵ | 0.7 ⁵ |
| 43 | | | reduced N / reduced P | | | | |
| 44 | | | Severe discolouration | | | | |
| 45 | Piglet rearing up to 28 kg LW | 22 piglets reared 656 kg weight increase per place p.a. | Standard feed | 3 | 2.4 | 3.0 | 1.1 |
| 46 | | | reduced N / reduced P | | | | |
| 47 | | | Severe discolouration | | | | |
| 48 | | 25 piglets reared 711 kg weight increase per place p.a. | Standard feed | 3 | 2.6 | 3.25 ⁵ | 1.2 ⁵ |
| 49 | | | reduced N / reduced P | | | | |
| 50 | | | Severe discolouration | | | | |
| 51 | 28 piglets reared 824 kg weight increase per place p.a. | Standard feed | 3 | 2.75 | 3.5 ⁵ | 1.3 ⁵ | |
| 52 | | reduced N / reduced P | | | | | |
| 53 | | Severe discolouration | | | | | |
| 54 | Specialised piglet rearing Average daily increase in weight of 450 g during the | from 8 to 28 kg LW | Standard feed | 0.2 | 0.185 | 0.3 | 0.15 |
| 55 | | from 8 kg / 15 kg | reduced N / reduced P | | | | |
| 56 | | from 8 to 28 kg LW | Severe discolouration | | | | |

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | | |
|----|--|--|--|------------------------------|--|------------------------------|------------------------------|------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 57 | Specialised piglet rearing Average daily increase in weight of 500 g during the | from 8 to 28 kg LW | Standard feed | 0.2 | 0.185 | 0.3 ⁴ | 0.15 ⁴ | |
| 58 | | from 8 kg / 15 kg LW | reduced N / reduced P | | | | | |
| 59 | | from 8 to 28 kg LW | Severe discolouration reduced N / | | | | | |
| 60 | Gilt rearing | 28 to 115 kg LW | Standard feed | 0.5 | 0.69 | 0.9 | 0.3 | |
| 61 | | 180 kg weight increase per place p.a. | reduced N / reduced P | | | | | |
| 62 | Integration of gilts | 95 to 135 kg LW | Standard feed | 1.0 | 0.93 | 1.25 | 0.5 | |
| 63 | | 240 kg weight increase per place p.a. | reduced N / reduced P | | | | | |
| 64 | Pig fattening; from 28 to 118 kg LW | Daily increase in weight of 700g; 210 kg weight increase | Standard feed | 0.5 | 0.54 | 0.75 | 0.3 | |
| 65 | | | reduced N / reduced P | | | | | |
| 66 | | | Severe discolouration reduced N / | | | | | |
| | | Daily increase in weight of 750 g; 223 kg weight increase | Standard feed | 0.5 | 0.54 | 0.75 ⁴ | 0.3 ⁴ | |
| | | | reduced N / reduced P | | | | | |
| | | | Severe discolouration reduced N / | | | | | |
| 67 | | | Daily increase in weight of 850 g; 244 kg weight increase | Standard feed | 0.5 | 0.54 | 0.75 ⁴ | 0.3 ⁴ |
| 68 | | | | reduced N / reduced P | | | | |
| 69 | | | Severe discolouration reduced N / | | | | | |
| 70 | | | Standard feed | 0.5 | 0.54 | 0.75 ⁴ | 0.3 ⁴ | |
| 71 | reduced N / reduced P | | | | | | | |
| 72 | Daily increase in weight of 950 g; 267 kg weight increase | Severe discolouration reduced N / | | | | | | |
| 73 | Wild-boar piglet fattening; from 28 to 118 kg LW | Daily increase in weight of 850g; Ratio of animal sexes: f:m M 50.50: 2.7 fattening rounds 246 kg weight | Standard feed | 0.5 | 0.54 | 0.75 ⁴ | 0.3 ⁴ | |
| | | | reduced N / reduced P | | | | | |
| 74 | Boar husbandry | 60 kg weight increase per place p.a. | | 1.0 | 1.23 | 1.80 | 0.75 | |
| | Horse keeping | | | kg fresh mass/animal and day | t/animal place | m ³ /animal place | m ³ /animal place | |
| 75 | Riding horses 500 – 600 kg LW | Kept in stall | | 6.0 | 5.6 | – ³ | – ³ | |
| | | Kept in stable / pasturage | | | | | | |
| 76 | Riding ponies 300 kg LW easy work | Kept in stable | | 4.0 | 3.4 | – ³ | – ³ | |
| | | Kept in stable / pasturage | | | | | | |
| 77 | Breeding mares | Heavy horse 600 kg LW; kept in stable; 0.5 foals p.a. | | 6.0 | 5.6 | – ³ | – ³ | |

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | |
|----|--|---|-----------------------|------------------------------------|--|------------------------------|------------------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 78 | Horses for rearing | Pony 350 kg LW; kept in stable; 0.5 foals p.a. | | 6.0 | 3.4 | — ³ | — ³ |
| 79 | Horses for rearing | Heavy horse; 365 kg weight increase; kept in stable; 6th - 36th month | | 2.0 | 3.4 | — ³ | — ³ |
| 80 | Breeding pony | Pony; 150 kg weight increase; kept in stable; 6th - 36th month | | 3.0 | 1.7 | — ³ | — ³ |
| | Sheep farming | | | kg fresh mass/animal place and day | t/animal place | m ³ /animal place | m ³ /animal place |
| 81 | Ewe with progeny breeding | 1.5 lambs / sheep; 40 kg weight increase per lamb | Conventional | 0.6 | 0.55 | — ³ | — ³ |
| 82 | | 1.1 lambs / sheep; 40 kg weight increase per lamb | Extensive | 0.6 | 0.55 | — ³ | — ³ |
| 83 | Goat farming | | | kg fresh mass/animal place and day | t/animal place | m ³ /animal place | m ³ /animal place |
| 84 | Dairy goat with progeny breeding | 800 kg milk/goat p.a.; 1.5 kids per goat; 16 kg weight increase/kid | | 0.6 | 0.5 | — ³ | — ³ |
| | Egg production | | | kg fresh mass/animal place and day | t/animal place | m ³ /animal place | m ³ /animal place |
| 85 | Pullet rearing | 3.3 kg weight increase 3-phase feeding | Standard feed | 0.071 | 0.00198 | 0.043 | — ³ |
| | Rabbit husbandry | | | kg fresh mass/animal place and day | t/animal place | m ³ /animal place | m ³ /animal place |
| 86 | Rabbit rearing; 52 young rabbits reared /doe hare p.a. | Rearing to 0.6 kg LW | | 75 | 0.1395 | 0.1020 | — ³ |
| | | Rearing to 3 kg LW | | 320 | 0.6076 | 0.4476 | — ³ |
| 87 | Rabbit fattening | 0.6 to 3 kg LW 14 kg weight increase/place | | 30 | 0.0563 | 0.0413 | — ³ |
| | Farmed game | | | | | | |
| 88 | does | Meat production; 45 kg weight increase per production unit (1 adult animal with 0.85 young animals) | | — | — ³ | — ³ | — ³ |
| | Egg production | | | kg fresh mass/ 1000 animal places | t/1000 animal places | m ³ /animal place | m ³ /animal place |
| 89 | Pullet rearing | 3.5 kg weight increase per place p.a.; 3-phase feeding | Standard feed | 710 | 3.5 | — ³ | — ³ |
| | | | reduced N / reduced P | | | | |
| 90 | Laying hen husbandry | 17.6 kg egg mass /animal; 2-phase feeding | Standard feed | 1 220 | 11 | — ³ | — ³ |
| 91 | | | reduced N / reduced P | | | | |

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | |
|-----|---|--|-----------------------|--------------------------------------|--|------------------------------|------------------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Chicken fattening | | | kg fresh mass/ 1000 animal places | t/1000 animal places | m ³ /animal place | m ³ /animal place |
| 92 | Chicken for fattening | Fattening for 39 days; 2.6 kg weight increase | Standard feed | 570 | 5.9 | — ³ | — ³ |
| 93 | | | reduced N / reduced P | | | | |
| 94 | | Fattening for 34 to 38 days; 2.3 kg weight increase /animal | Standard feed | 500 | 5.55 | — ³ | — ³ |
| | | | reduced N / reduced P | | | | |
| 95 | | Fattening until 30 to 33 days; 1.85 kg weight increase /animal | Standard feed | 380 | 5.00 | — ³ | — ³ |
| | | | reduced N / reduced P | | | | |
| 96 | Fattening to 29 days; 1.55 kg weight increase / | Standard feed | 330 | 4.65 | — ³ | — ³ | |
| 97 | | reduced N / reduced P | | | | | |
| | Turkey fattening | | | kg fresh mass /animal places | t/1000 animal places | m ³ /animal place | m ³ /animal place |
| 98 | Cocks | 22.1 kg weight increase by 21 weeks; Fattening (56.4 kg feed) | Standard feed | 7.00 | 24.2 | 0.127 | — ³ |
| 99 | | | reduced N / reduced P | | | | |
| 100 | Hens | 10.9 kg weight increase 17 weeks (26.7 kg feed) | Standard feed | 5.25 | 25.2 | — ³ | — ³ |
| 101 | | | reduced N / reduced P | | | | |
| 102 | Cocks from the 6th week | | Standard feed | 6.00 | 30.5 | — ³ | — ³ |
| 103 | | | reduced N / reduced P | | | | |
| 104 | Hens from the 6th week | | Standard feed | 4.25 | 30.0 | — ³ | — ³ |
| 105 | | | reduced N / reduced P | | | | |
| 106 | Mixed-sex fattening; 50% cocks and 50% hens | | Standard feed | 5.00 | 24.7 | — ³ | — ³ |
| 107 | | | reduced N / reduced P | | | | |
| 108 | Turkey-rearing to 5 weeks; 50 % cocks, 50% hens | | Standard feed | 1.00 | 6.6 | — ³ | — ³ |
| | Duck fattening | | | kg fresh mass /animal | t/animal place | m ³ /animal place | m ³ /animal place |
| 109 | Pekin ducks | 19.5 kg weight increase/place p.a.; 6.5 fattening rounds (3.0 kg weight increase per animal) fattening to 26 | | 2.0 | 0.0288 | — ³ | — ³ |
| 110 | Muscovy ducks | 15.4 kg weight increase/place p.a.; 4 fattening rounds (2.7 kg female, 5.0 kg male) (f:m= 1 1) | | 2.0 ⁴ | 0.0230 | — ³ | — ³ |
| | Goose fattening | | | kg fresh mass /animal | t/animal place | m ³ /animal place | m ³ /animal place |
| 111 | Early fattening, 5.0 kg weight increase /animal | | | 3.15 | 0.0083 | — ³ | — ³ |

| | Category | Production process | | Litter | Quantity per occupied animal place * 6 | | |
|-----|---|--------------------|---|--------|--|----------------|---------------------|
| | | | | | Fresh dung ¹ | Liqui | Slurry ² |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 112 | Mid-fattening, 6.8 kg weight increase /animal | | | 5.6 | 0.0187 | — ³ | — ³ |
| 113 | Late fattening/ fattening on pasture; 7.8 kg weight | | | 11.2 | 0.0303 | — ³ | — ³ |

¹ Also calculates liquid manure + litter – slurry in the case of straw-litter quantities as detailed.

² In the case of medium straw-litter quantities (6 - 8 kg/LU per day), the given slurry production is to be halved; in the case of high straw-litter quantities (> 11 kg/LU per day) no slurry is produced.

³ No slurry or liquid manure production due to husbandry methods or high straw-litter quantities.

⁴ Values in accordance with other methods.

⁵ Values extrapolated.

⁶ Values interpolated.

Table 2
Conversion factor to determine livestock units (LU) 1

| Name | LU ² |
|---|-----------------|
| Ponies and small horses | 0.70 |
| Other horses under 3 years | 0.70 |
| Other horses of 3 years and older | 1.10 |
| Calves and young cattle under 1 year | 0.30 |
| Young cattle 1 to under 2 years | 0.70 |
| Heifers, dairy cows, suckler cows, fattening cattle | 1.00 |
| Sheep under 1 year including lambs | 0.05 |
| Sheep 1 year and above | 0.10 |
| Piglets | 0.02 |
| Pigs under 50 kg live weight (LW) | 0.06 |
| Fattening pigs over 50 kg LW | 0.16 |
| Breeding pigs, boars over 50 kg LW | 0.30 |
| Laying hens ½ year and older | 0.004 |
| Chicks and laying hens under ½ year | 0.004 |
| Slaughter and fattening cocks and chickens | 0.004 |
| Geese total | 0.004 |
| Ducks total | 0.004 |
| Turkeys total | 0.004 |

¹ For animal species and production methods that deviated significantly from the husbandry methods referred to in this table, the average mass of a single animal (in LU/animal) may, on a case by case basis, be laid down.

² An LU corresponds to 500 kg live weight.

Section 2

Amendment to the
Ordinance on the Placing on the Market
and Transport of Livestock Manure

The Ordinance on the Placing on the Market and Transport of Livestock Manure of 21 July 2010 (Federal Law Gazette I p. 1062), amended by section 2 subsection 2 of the Act of 5 May 2017 (Federal Law Gazette I p. 1068), shall be amended as follows:

1. Section 1 shall be amended as follows:
 - a) In respect of the first sentence, no. 1, the words "including acting as act as an intermediary in trade" shall be inserted after "placing on the market".
 - b) In respect of the second sentence, no. 2, letter a, the reference "section 5 subsection 4" shall be replaced by "section 8 subsection 6".
2. Section 4 shall be amended as follows:
 - a) The existing text shall become subsection 1.
 - b) The following subsection 2 shall be inserted:

"(2) The competent Land authorities shall, by 31 May of each year, transmit to the competent supreme Land authority details of the total quantity of substances referred to in subsection 1, which have been reported to them as per subsection 1, expressed in tonnes of fresh mass. The competent supreme Land authorities shall, by 30 June of each year, transmit to the Federal Ministry of Food and Agriculture details of the total quantity of substances referred to in subsection 1, which have been reported to them as per subsection 1, expressed in tonnes of fresh mass. The competent supreme Land authorities may stipulate another authority of the respective Land, to which the details as per the first sentence are to be transmitted and which is to transmit the details as per the second sentence."
3. In section 7, the reference "letter c" shall be replaced by "letter d".

Section 3

Amendment to the
Fertiliser Ordinance

Section 9 of the Fertiliser Ordinance of 5 December 2012 (Federal Law Gazette I p. 2482), last amended by section 2 subsection

3 of the Act of 05 May 2017 (Federal Law Gazette I p. 1068), shall be amended as follows:

1. In subsection 1, the reference "letter d" shall be replaced by "letter e".
2. In subsection 2, the reference "letter e" shall be replaced by "letter f".

Section 4

Ancillary amendment:

Section 2 of the Agricultural Support Scheme Obligations Ordinance of 17 December 2014 (Federal Gazette AT 23.12.2014 V1), last amended by section 1 of the Ordinance of 9 March 2017 (Federal Law Gazette I p. 455), shall be worded as follows:

"Section 2

Establishment of
buffer zones along watercourses

Anyone who manages agricultural land along watercourses is, in order to conserve good agricultural and ecological status, to comply with the requirements contained in section 5 subsection 2, first sentence, no. 1, in conjunction with the second sentence, with subsection 2, third and fourth sentences, and with subsection 3, and respectively in conjunction with subsection 4, of the Fertiliser Application Ordinance, insofar as the requirements relate to nitrogen-containing fertilisers. Insofar as the Land governments issue ordinances pursuant to section 13 subsection 2, first sentence, in conjunction with the fourth sentence, no. 5, of the Fertiliser Application Ordinance, that contain deviating provisions on nitrogen-containing fertilisers, the requirements under Land law are, by way of derogation from the first sentence, to be complied with - except in the case of section 13 subsections 3 and 4 of the Fertiliser Application Ordinance."

Section 5

Entry into force, cessation of validity

This Ordinance shall enter into force on the day after promulgation. At the same time the Fertiliser Application Ordinance, in the version promulgated on 27 February 2007 (Federal Law Gazette I p. 221), last amended by section 5 subsection 36 of the Act of 24 February 2012 (Federal Gazette I p. 212), shall cease to be valid.

The Bundesrat has consented.

Bonn, 26 May 2017

The Federal Minister
of
Food and Agriculture, Christian Schmidt