
*Changes to legislation: There are currently no known outstanding effects for the
Commission Regulation (EU) No 142/2011, ANNEX V. (See end of Document for details)*

ANNEX V

TRANSFORMATION OF ANIMAL BY-PRODUCTS AND DERIVED PRODUCTS INTO BIOGAS, COMPOSTING

CHAPTER I

REQUIREMENTS APPLICABLE TO PLANTS

Section 1

Biogas plants

1. A biogas plant must be equipped with a pasteurisation/hygienisation unit, which cannot be by-passed for the animal by-products or derived products introduced with a maximum particle size of 12 mm before entering the unit, with:
 - (a) installations for monitoring that the temperature of 70 °C is reached during the time of one hour;
 - (b) recording devices to record continuously the results of the monitoring measurements referred to in point (a); and
 - (c) an adequate system to prevent insufficient heating.
2. By way of derogation from point 1, a pasteurisation /hygienisation unit shall not be mandatory for biogas plants that transform only:
 - (a) Category 2 material that has been processed in accordance with processing method 1 as set out in Chapter III of Annex IV;
 - (b) Category 3 material that has been processed in accordance with any of the processing methods 1 to 5 or processing method 7, or in the case of material originating from aquatic animals, any of the processing methods 1 to 7, as set out in Chapter III of Annex IV;
 - (c) Category 3 material that has undergone pasteurisation/hygienisation in another approved plant;
 - (d) [^{F1}animal by-products which may be applied to land without processing in accordance with Article 13(f) of Regulation (EC) No 1069/2009 and with this Regulation, if the competent authority does not consider them to present a risk of spreading any serious transmissible disease to humans or animals;]
 - (e) animal by-products which have been subject to the alkaline hydrolysis process set out in point A of Section 2 of Chapter IV of Annex IV;
 - (f) the following animal by-products, if authorised by the competent authority:
 - (i) the animal by-products referred to in Article 10(f) of Regulation (EC) No 1069/2009, which have undergone processing as defined in Article 2(1)(m) of Regulation (EC) No 852/2004 at the time when they are destined for purposes other than human consumption;

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- (ii) the animal by-products referred to in Article 10(g) of Regulation (EC) No 1069/2009; or
- (iii) animal by-products which are transformed into biogas, where the digestion residues are subsequently composted or processed or disposed of in accordance with this Regulation.

Textual Amendments

F1 Substituted by Commission Regulation (EU) No 294/2013 of 14 March 2013 amending and correcting Regulation (EU) No 142/2011 implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as regards certain samples and items exempt from veterinary checks at the border under that Directive (Text with EEA relevance).

- 3. If the biogas plant is located on or next to premises where farmed animals are kept and the biogas plant does not only use manure, milk or colostrum which accrues from those animals, the plant shall be located at a distance from the area where such animals are kept.

That distance shall be determined in a manner which ensures that there is no unacceptable risk for the transmission of a disease communicable to humans or animals from the biogas plant.

In all cases, there must be total physical separation between that biogas plant and the animals and their feed and bedding, with fencing where necessary.

- 4. Each biogas plant must have its own laboratory or make use of an external laboratory. The laboratory must be equipped to carry out necessary analyses and be approved by the competent authority, be accredited according to internationally recognised standards or be subject to regular controls by the competent authority.

Section 2

Composting plants

- 1. A composting plant must be equipped with a closed composting reactor or closed area, which cannot be by-passed for the animal by-products or derived products introduced into the plant, and it must be equipped with the following:
 - (a) installations for monitoring temperature against time;
 - (b) recording devices to record, where appropriate continuously, the results of the monitoring measurements referred to in point (a);
 - (c) an adequate safety system to prevent insufficient heating.
- 2. By way of derogation from point 1, other types of composting systems may be allowed provided they:
 - (a) are managed in such a way that all the material in the system achieves the required time and temperature parameters, including, where appropriate, continuous monitoring of the parameters; or

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- (b) transform only materials referred to in point 2 of Section 1; and
 - (c) comply with all other relevant requirements of this Regulation.
3. If the composting plant is located on or next to premises where farmed animals are kept and the composting plant does not only use manure, milk or colostrum which accrues from those animals, the composting plant shall be located at a distance from the area where animals are kept.

That distance shall be determined in a manner which ensures that there is no unacceptable risk for the transmission of a disease communicable to humans or animals from the composting plant.

In all cases, there must be total physical separation between that composting plant and the animals and their feed and bedding, with fencing where necessary.

4. Each composting plant must have its own laboratory or make use of an external laboratory. The laboratory must be equipped to carry out necessary analyses and be approved by the competent authority, be accredited according to internationally recognised standards or be subject to regular controls by the competent authority.

CHAPTER II

HYGIENE REQUIREMENTS APPLICABLE TO BIOGAS AND COMPOSTING PLANTS

1. Animal by-products must be transformed as soon as possible after arrival at the biogas or composting plant. They must be stored properly until treated.
2. Containers, receptacles and vehicles used for transporting untreated material must be cleaned and disinfected in a designated area.

That area must be situated or designed so as to prevent risk of contamination of treated products.

3. Preventive measures against birds, rodents, insects or other vermin must be taken systematically.

A documented pest-control programme must be used for that purpose.

4. Cleaning procedures must be documented and established for all parts of the premises. Suitable equipment and cleaning agents must be provided for cleaning.
5. Hygiene control must include regular inspections of the environment and equipment. Inspection schedules and results must be documented.
6. Installations and equipment must be kept in a good state of repair and measuring equipment must be calibrated at regular intervals.
7. Digestion residues and compost must be handled and stored at the biogas or composting plant in such way as to prevent recontamination.

CHAPTER III

TRANSFORMATION PARAMETERS

Section 1

Standard transformation parameters

1. Category 3 material which is used as raw material in a biogas plant equipped with a pasteurisation/hygienisation unit must be submitted to the following minimum requirements:
 - (a) maximum particle size before entering the unit: 12 mm;
 - (b) minimum temperature in all material in the unit: 70 °C; and
 - (c) minimum time in the unit without interruption: 60 minutes.

However, Category 3 milk, milk-based products, milk-derived products, colostrum and colostrum products may be used without pasteurisation/hygienisation as raw material in a biogas plant, if the competent authority does not consider them to present a risk of spreading any serious transmissible disease to humans or animals.

The minimum requirements set out in points (b) and (c) of this point shall also apply to Category 2 material which is introduced into a biogas plant without prior processing in accordance with Article 13(e)(ii) of Regulation (EC) No 1069/2009.

2. Category 3 material which is used as raw material in a composting plant must be submitted to the following minimum requirements:
 - (a) maximum particle size before entering the composting reactor: 12 mm;
 - (b) minimum temperature in all material in the reactor: 70 °C; and
 - (c) minimum time without interruption: 60 minutes.

The minimum requirements set out in points (b) and (c) of this point shall also apply to Category 2 material which is composted without prior processing in accordance with Article 13(e)(ii) of Regulation (EC) No 1069/2009.

Section 2

Alternative transformation parameters for biogas and composting plant

1. The competent authority may authorise the use of parameters other than the parameters set out in point 1 of Section 1 of Chapter I and other than the standard transformation parameters, provided that the applicant for such use demonstrates that such parameters ensure adequate reduction of biological risks. That demonstration shall include a validation, which shall be carried out in accordance with the following requirements:
 - (a) Identification and analysis of possible hazards, including the impact of input material, based on a full description of the transformation conditions and parameters;
 - (b) A risk assessment, which evaluates how the specific transformation conditions referred to in point (a) are achieved in practice under normal and atypical situations;

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- (c) Validation of the intended process by measuring the reduction of viability/infectivity of:
- (i) endogenous indicator organisms during the process, where the indicator is:
 - consistently present in the raw material in high numbers,
 - not less heat resistant to the lethal aspects of the transformation process, but also not significantly more resistant than the pathogens for which it is being used to monitor,
 - relatively easy to quantify and to identify and to confirm; or
 - (ii) a well-characterised test organism or virus, during exposure, introduced in a suitable test body into the starting material.
- (d) The validation of the intended process referred to in point (c) must demonstrate that the process achieves the following overall risk reduction:
- (i) for thermal and chemical processes by:
 - a reduction of 5 log₁₀ of *Enterococcus faecalis* or *Salmonella Senftenberg* (775W, H₂S negative),
 - reduction of infectivity titre of thermoresistant viruses such as parvovirus by at least 3 log₁₀, whenever they are identified as a relevant hazard; and
 - (ii) as regards chemical processes also by:
 - a reduction of resistant parasites such as eggs of *Ascaris* sp. by at least 99,9 % (3 log₁₀) of viable stages;
- (e) Designing a complete control programme including procedures for monitoring the functioning of the process referred to in point (c);
- (f) Measures ensuring continuous monitoring and supervision of the relevant process parameters fixed in the control programme when operating the plant.

Details on the relevant process parameters used in a biogas or composting plant as well as other critical control points must be recorded and maintained so that the owner, operator or their representative and the competent authority can monitor the operation of the plant.

Records must be made available by the operator to the competent authority on request. Information relating to a process authorised under this point must be made available to the [F²appropriate authority] on request.

Textual Amendments

- F2** Words in Annex 5 Ch. 3 Section 2 point 1 substituted (E.W.S.) (31.12.2020) by [The Animals, Aquatic Animal Health, Invasive Alien Species, Plant Propagating Material and Seeds \(Amendment\) \(EU Exit\) Regulations 2020 \(S.I. 2020/1388\)](#), regs. 1(2)(c), **13(39)(a)**

2. By way of derogation from point 1, pending the adoption of rules as referred to in Article 15(2)(a)(ii) of Regulation (EC) No 1069/2009, the competent authority may authorise the use of specific requirements other than those laid down in this Chapter, provided that they guarantee an equivalent effect regarding the reduction of pathogens, for:

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- (a) catering waste used as the only animal by-product in a biogas or composting plant; and
- (b) mixtures of catering waste with the following materials:
 - (i) manure;
 - (ii) digestive tract content separated from the digestive tract;
 - (iii) milk;
 - (iv) milk-based products;
 - (v) milk-derived products;
 - (vi) colostrum;
 - (vii) colostrum products;
 - (viii) eggs;
 - (ix) egg products;
 - (x) [^{F3}animal by-products referred to in Article 10(f) of Regulation (EC) No 1069/2009, which have undergone processing as defined in Article 2(1)(m) of Regulation (EC) No 852/2004;]
 - (xi) [^{F4}mixture of animal by-products referred to in point 2(b) with non-animal by-product materials.]

Textual Amendments

- F3** Substituted by Commission Regulation (EU) 2015/9 of 6 January 2015 amending Regulation (EU) No 142/2011 implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as regards certain samples and items exempt from veterinary checks at the border under that Directive (Text with EEA relevance).
- F4** Inserted by Commission Regulation (EU) 2015/9 of 6 January 2015 amending Regulation (EU) No 142/2011 implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as regards certain samples and items exempt from veterinary checks at the border under that Directive (Text with EEA relevance).

3. Where the materials referred to in point 2(b) or derived products referred to in Article 10(g) of Regulation (EC) No 1069/2009 are the only starting material of animal origin being treated in a biogas or composting plant, the competent authority may authorise the use of specific requirements other than those specified in this Chapter provided that it:
 - (a) does not consider that those materials present a risk of spreading any serious transmissible disease to humans or animals;
 - (b) [^{F3}considers that the digestion residues or compost are unprocessed material and obliges operators to handle them in accordance with Regulation (EC) No 1069/2009, with this Regulation or, in the case of compost or digestion residues derived from catering waste, to recover or dispose of in accordance with the environmental legislation.]

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4. Operators may place on the market digestion residues and compost, which have been produced according to parameters which have been authorised by the competent authority:
- (a) in accordance with ^{F5}points 1, 2 and 3];
- (b) ^{F6}

Textual Amendments

- F5** Words in Annex 5 Ch. 3 Section 2 point 4(a) substituted (E.W.S.) (31.12.2020) by [The Animals, Aquatic Animal Health, Invasive Alien Species, Plant Propagating Material and Seeds \(Amendment\) \(EU Exit\) Regulations 2020 \(S.I. 2020/1388\)](#), regs. 1(2)(c), **13(39)(b)(i)**
- F6** Annex 5 Ch. 3 Section 2 point 4(b) omitted (E.W.S.) (31.12.2020) by virtue of [The Animals, Aquatic Animal Health, Invasive Alien Species, Plant Propagating Material and Seeds \(Amendment\) \(EU Exit\) Regulations 2020 \(S.I. 2020/1388\)](#), regs. 1(2)(c), **13(39)(b)(ii)**

Section 3

Standards for digestion residues and compost

- 1.
- (a) Representative samples of the digestion residues or compost taken during or immediately after transformation at the biogas plant or composting at the composting plant in order to monitor the process must comply with the following standards:
- Escherichia coli*: n = 5, c = 1, m = 1 000, M = 5 000 in 1 g;
- or
- Enterococcaceae: n = 5, c = 1, m = 1 000, M = 5 000 in 1 g;
- and
- (b) Representative samples of the digestion residues or compost taken during or on withdrawal from storage must comply with the following standards:
- Salmonella: absence in 25 g: n = 5; c = 0; m = 0; M = 0

Where in the case of point (a) or (b):

- n = number of samples to be tested;
- m = threshold value for the number of bacteria; the result is considered satisfactory if the number of bacteria in all samples does not exceed m;
- M = maximum value for the number of bacteria; the result is considered unsatisfactory if the number of bacteria in one or more samples is M or more; and
- c = number of samples the bacterial count of which may be between m and M, the sample still being considered acceptable if the bacterial count of the other samples is m or less.

^{F72}. Digestion residues or compost other than those referred to in point 3(b) of Section 2, which do not comply with the requirements set out in this Section, shall be resubmitted to transformation or composting, and in the case of Salmonella handled or disposed of in accordance with the instructions of the competent authority.]

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Textual Amendments

- F7** Substituted by [Commission Regulation \(EU\) 2017/172 of 1 February 2017 amending Regulation \(EU\) No 142/2011 as regards parameters for the transformation of animal by-products into biogas or compost, conditions for imports of petfood and for the export of processed manure \(Text with EEA relevance\).](#)

- [^{F8}3. When animal by-products are transformed into biogas or composted together with materials which are not of animal origin, the competent authority may authorise operators to take representative samples after the pasteurisation referred to in point 1(a) of Section 1 of Chapter I or after composting referred to in point 1 of Section 2, as applicable, and before the mixing with materials which are not of animal origin takes place, in order to monitor the efficiency of the transformation or composting of the animal by-products, as applicable.]

Textual Amendments

- F8** Inserted by [Commission Regulation \(EU\) No 749/2011 of 29 July 2011 amending Regulation \(EU\) No 142/2011 implementing Regulation \(EC\) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as regards certain samples and items exempt from veterinary checks at the border under that Directive \(Text with EEA relevance\).](#)

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