

ANIMAL BY-PRODUCTS AND ANAEROBIC DIGESTION

Requirements of the European Regulation (EC) No 1774/2002

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Task 37

Energy from Biogas and Landfill Gas

IEA Bioenergy

Task 37 - Energy from Biogas and Landfill Gas **In Cooperation with BIOEXELL - Biogas Center of Excellence**

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i Information

ABP-Regulation

Regulation (EC) No. 1774/2002
Official Journal L 273
(10.10.2002)

ABP

Animal by-products are all bodies or parts of animals and products of animal origin not intended for human consumption, because either they are not fit for human consumption or there is no market for them as foodstuff.

Biogas plant according to the ABP-Regulation

is a plant in which biological degradation of products of animal origin is undertaken under anaerobic conditions for the production and collection of biogas.

i Information

Potential of Co-Digestion

IEA Brochure:
principles of biogas production
from organic waste materials.
www.novaenergie.ch/iea-bioenergy-task37

Hazard potential of Animal By-Products

The inefficient treatment of slaughterhouse waste or improper use of products produced from it respectively led to the pandemic occurrence of animal diseases such as BSE and foot and mouth disease. Only a rigorous European Regulation on the treatment and further use of animal by-products could prevent a further spread of diseases. This very extensive regulation governs the collection, transport, methods and procedures of treatment, as well as the further disposal, use or trade in the products respectively. Therefore the regulation has an effect on the export to and the import from non-member countries of the European Community.

The EC-Regulation (EC) No 1774/2002

The “Regulation (EC) No. 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption” (“ABP-Regulation” or “Hygiene Regulation” in circles working at environmental issues) regulates possible uses and processing rules of animal by-products (ABP). The regulation was published in the Official Journal of the European Community of 10 October 2002, L 273, pages 1-95, and has had to be applied directly in all Member States of the European Community since 1 May 2003.

Further temporary regulations and implementing rules were laid down by the European Commission for the cushioning and modification of this regulation. In this brochure all amendments which entered into force by September 2003 are included.

Specific possibilities of processing and use for animal by-products are listed in this ABP-Regulation. In future, existing and newly developed methods and processes or utilisation possibilities may be examined by the Scientific Steering Committee and approved by the European Commission.

Animal by-products in biogas plants

In the ABP-Regulation animal by-products are divided into 3 categories.

Category 1 contains those materials with the highest risk for public health, animals, or the environment (hygienic risk, risk of BSE, etc.).

Category 3 comprises those animal by-products which would be fit for human consumption, but are (for commercial reasons) not intended for human consumption.

Category 2 includes all animal by-products which can be allocated neither to Category 1 nor to Category 3 (e.g. manure or digestive tract content or animals not fit for human consumption).

For manure and catering waste the conditions for approval and for treatment, as well as other criteria for the end product than for the remaining animal by-products, are defined. (see Figure 1, page 12 and Table 7, page 16). Biogas plants which process catering waste or manure can be approved by national rules (pending further EC-legislation).



3 Categories of Animal By-Products

Table 1: Survey of materials designated for treatment in biogas plants

CATEGORY	MATERIAL
CATEGORY 1	not designated
CATEGORY 2 without preliminary treatment	manure as well as digestive tract content (separated from the digestive tract; if there is no risk of dispersal of serious-infectious diseases) milk and colostrum
CATEGORY 2 after sterilisation with steam pressure and marking (with smell)	all materials classified as Category 2 (e.g. perished animals or animals slaughtered, but not intended for human consumption)
CATEGORY 3 in a biogas plant approved in accordance with Article 15 of the Regulation	all materials classified as Category 3 (e.g. meat-containing wastes from the foodstuff-industry, slaughterhouse wastes of animals fit for human consumption)
CATEGORY 3 in biogas plants which are to be approved in accordance with provisions and methods to be adopted or which are approved according to national legislation	catering waste (except from international means of transport)



Materials of Category 1

ABP of Category 1 represent an increased risk for public health, animals or the environment. These materials such as specified risk material (SRM), animals suspected of being infected with BSE, ABP with increased concentrations of environmental contaminants, solid materials (> 6 mm) from wastewater treatment in Category 1 processing plants and establishments in which SRM is removed (slaughterhouses and cutting plants) and catering waste from international means of transport are not allowed to be processed in a biogas plant.

Table 2: Following tissues are classified as specific risk material: Regulation (EC) No 999/2001, amended by Regulation (EC) No 1139/2003

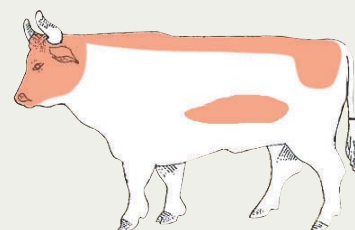
BOVINE ANIMALS, aged over 12 months	Skull including brain and eyes, excluding mandible Vertebral column including dorsal root ganglia and the spinal cord, but excluding vertebrae of the tail, transverse processes of the lumbar and thoracic vertebrae of the tail and the wings of the sacrum
BOVINE ANIMALS, all ages	Tonsils, intestines from duodenum to rectum, mesentery
OVINE AND CAPRINE ANIMALS, aged over 12 months	Skull including brain and eyes, tonsils and spinal cord
OVINE AND CAPRINE ANIMALS, all ages	Spleen as well as ileum

Materials of Category 2

Category 2 comprises all ABP that are neither included in Category 1 nor in Category 3. These are also manure, digestive tract content, milk not fit for human consumption, killed or fallen animals and solid materials in waste water streams of slaughterhouses (particle size > 6 mm). ABP of Category 2 may be processed in a biogas plant only after sterilisation with steam pressure, except manure, digestive tract content and milk, which need no pre-treatment.

! Attention

Materials of Category 1 must not be processed in a biogas plant!



i Information

Materials of Category 2 are allowed to be fed to a biogas plant after sterilisation with steam pressure.

Sterilisation with steam pressure

At least 20 minutes without interruption at a core temperature of more than 133 °C and an absolute steam pressure of not less than 3 bar.

i Information

Manure according to the ABP-Regulation

excrements and/or urine of farmed animals, with or without litter, and guano, either unprocessed, processed or transformed in biogas plants or composting plants.

Manure needs no pre-treatment before digestion.

Manure

Manure, digestive tract content (separated from the digestive tract), milk and colostrum are materials of Category 2. These materials, however, can be fed directly and without any pre-treatment to an approved biogas plant.

The fermentation end product of the “transformation” of manure processed in a biogas plant together with other substrates which are not covered by this Regulation (e.g. renewable raw materials or energy crops) may be considered as untreated manure.

Conditions for the placing on the market of “untreated” manure within the boundaries of a Member State, as well as special requirements for transport (marking as “manure”, cleaning of containers, etc.) may be laid down by national legislation.

Land Application of Manure

To avoid an uptake of animal by-products through a possible contamination of the grazed plants by ruminants, organic fertilizers produced from ABP, except manure, must not be applied to pasture land.

For the application to land and pasture land of organic fertilizers a new regulation is in preparation in which required parameters of pre-treatment or digestion respectively will be laid down.



Trade in Manure

The trade (exchange of goods between Member States) in untreated manure is allowed to be carried out only under special conditions or with special permission.

For the production of manure products the manure must be treated with heat (minimum 70°C / 60 minutes, or equivalent treatment). For manure products special criteria for the end product were defined (see Table 7, page 16).

The list of third countries from which Member States may authorise imports of manure for treatment of the soil is established in a separate regulation (Decision 79/542/EEC).

Waste Water from Slaughterhouses

For slaughterhouses (or cutting plants removing SRM respectively) and plants processing material of Category 1 and 2 (e.g. intermediate and rendering plants) a pre-treatment of the waste water is required which retains all solid materials up to a particle size of 6 mm (e.g. screen with a mesh size of 6 mm). Any materials removed from the waste water by this pre-treatment unit (screenings, materials from desanding, grease and oil mixtures, sludge, material removed from drains) are regarded as materials of Category 2 or materials of Category 1 (for plants processing materials of Category 1 or removing SRM) respectively.

Any decomposition or reduction in size of the materials in the waste water stream prior to the retaining unit is not allowed!

Materials removed from the waste water stream after the pre-treatment of the waste water (flotation sludge, etc.) and the residual waste water containing no solid particles are not covered by this Regulation and are to be treated in accordance with the relevant waste water legislation.

Information

Conditions and special requirements for the placing on the market of manure within national boundaries may be laid down by national legislation.

Attention

Slaughterhouses must remove solid materials with a particle size bigger than 6 mm from the waste water stream.

Information

Waste water which had passed the waste water pre-treatment unit (and which contains no solid particles > 6 mm) is not covered by this Regulation. Relevant waste water legislation must be applied.

! Attention

Materials of Category 3 must be pasteurised before treating in an approved biogas plant.

i Information

Catering Waste according to the ABP-Regulation

means all waste food originating in restaurants, catering facilities and kitchens, including central kitchens and household kitchens, as well as used cooking oils.

! Attention

Feeding of ABP (e.g. catering waste) as swill is not allowed.

Temporary exceptions are effective only for Germany and Austria.

Materials of Category 3

Category 3 contains all ABP originating from animals fit for slaughter but not intended for human consumption as well as animal by-products from food production and catering waste. These ABP may be processed in a biogas plant equipped with a hygienisation unit which cannot be bypassed. These biogas plants have to be approved according to the approval conditions laid down in Article 15 of the ABP-Regulation (see page 16, Figure 2).

Catering Waste

Catering waste is referred to in two categories: those from international means of transport (catering from aeroplanes, ships or railways) are included in Category 1 and must be disposed of. All other catering wastes are defined as materials of Category 3.

Catering waste of Category 3 may be processed in biogas plants according to national rules pending the adoption of relevant provisions and approvals of the EC.

Pending adoption of these EC-provisions concerning the treatment of catering waste, the application of alternative standards of processing may be authorized for biogas plants processing only catering waste (together with manure as well as energy crops). However, equal reduction of pathogens has to be ensured.

Feeding of Catering Waste

The feeding of catering waste to farmed animals, other than fur animals, is prohibited. This also includes feeding stuff derived from products or raw materials which contain (or are produced from) catering waste or other materials of Category 3.

In Austria and Germany the feeding of catering waste (swill) to pigs may be allowed to continue under specific conditions until October 31, 2006.

Swill must be heated to 90 °C during at least 60 minutes (maximum particle size of 50 mm). The processing plants must not be located at the same site as the animal holding.

Meat and bone meal

At present the feeding of animal protein (meat and bone meal, MBM) to farmed animals is prohibited.

General exceptions exist for the feeding of animals not intended for human consumption (pets and fur animals).

Specific derogations allow the feeding of certain kind of processed animal protein (i.e. hydrolysed protein, fishmeal) to non ruminants.

Further-more it is prohibited to feed animals with meat and bone meal produced from bodies or parts of animals of the same species.

Fish waste

Fish waste (Category 3) may be fed to a biogas plant passing the hygienisation unit or may be processed to microbiologically stable fish silage or compost. The production of fishmeal or fish silage for the purpose of feeding to farmed animals is allowed under certain conditions.

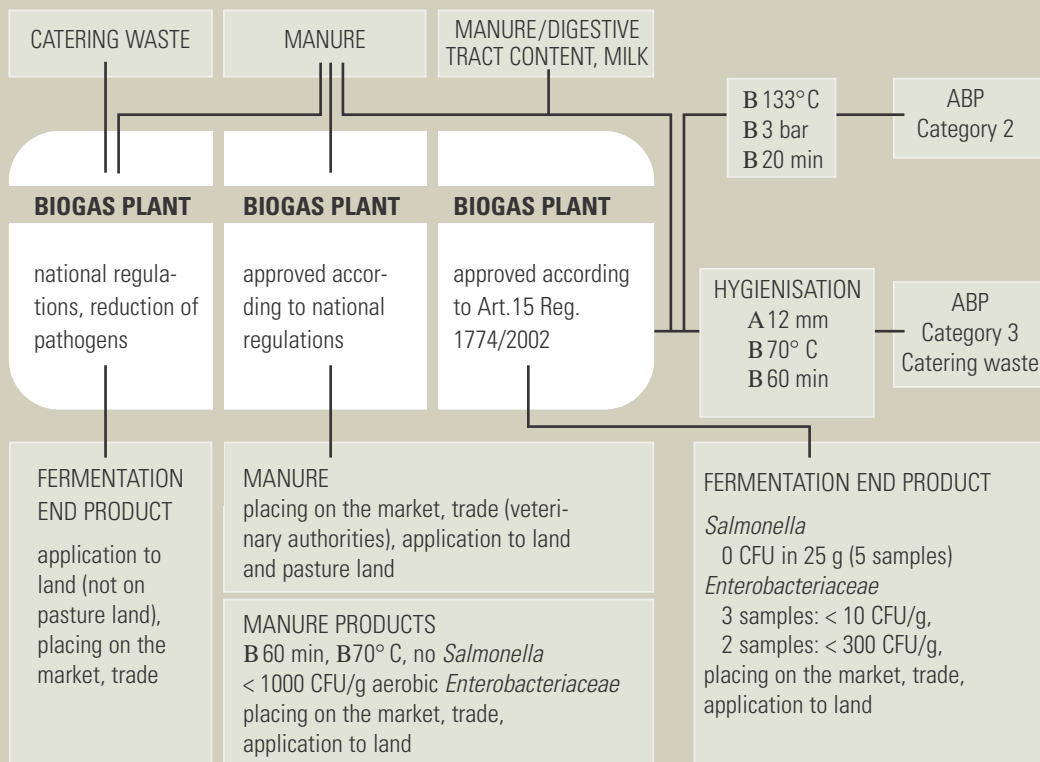
! Attention

Feeding of meat and bone meal to farmed animals is prohibited.

Feeding of animals with MBM derived from animals of the same species is prohibited.



Figure 1: Substrates and legal force of national and international regulations



Examples of animal by-products in biogas plants

In the following chapters four cases are specified, which shall illustrate the application of the “ABP-Regulation” (EC) No 1774/2002 to biogas plants.

Biogas from manure and energy crops

Table 3: Substrates for biogas plant model 1

SUBSTRATE	CATEGORY	REQUIRED TREATMENT
MANURE bovine animals, pigs, poultry, horses, donkeys	2	none
ENERGY CROPS maize silage, grass, etc.	–	none

The plant must be registered and approved by the competent authorities. The digestate of this biogas plant can be considered as “untreated manure” and placed on the national market or applied to land or pasture land.

Trade (between Member States) is allowed only with special permission. Concerning production of manure products and following placing on the market the respective hygienic parameters for manure products must be observed (see page 8 and Table 7, page 16).

Biogas from manure and catering waste

Table 4: Substrates for biogas plant model 2

SUBSTRATE	CATEGORY	REQUIRED TREATMENT
MANURE: bovine animals, pigs, poultry, horses, donkeys	2	none
Rumen, stomach and digestive tract content, milk	2	none
Catering waste	3	National regulations
food waste former food stuff	3	Pasteurisation
Used frying fats and oils	3	National regulations
Content of fat removal devices from restaurants	–	
Content of fat removal devices from slaughterhouses (particle size < 6 mm) ⁽¹⁾	–	

⁽¹⁾ separated and removed AFTER the prescribed waste water pre-treatment unit

The plant is officially approved. Manure and rumen or stomach content respectively may be fed to a biogas plant without preliminary treatment. Contents of fat scrapers and flotation devices from slaughterhouses separated after the prescribed pre-treatment procedure (screen with mesh size of 6 mm or equivalent process) are not covered in this Regulation and may be processed in a biogas plant without any further pre-treatment.

Used cooking oils from restaurants and central kitchens are considered as catering waste of Category 3. For these materials national rules are effective (pending the adoption of relevant EC-regulations): If an equal reduction of pathogens as demanded by the “processing standards” (pasteurisation unit) can be ensured by the prescribed operating conditions, other processing standards can be authorised (pending the adoption of relevant EC-regulations).



Contents of fat removal devices from restaurants and central kitchens are not covered by the ABP-Regulation.

The digestate of this plant is not considered as “manure” any more and must not be applied to pasture land.

Biogas plant at a pig slaughtering facility

Table 5: Substrates for biogas plant model 3 (pig slaughterhouse)

SUBSTRATE	CATEGORY	REQUIRED TREATMENT
Manure from pigs	2	No pre-treatment required
Digestive tract content	2	No pre-treatment required
Digestive tract (fit for human consumption)	3	Pasteurisation
Bones, slaughter by-products	3	Pasteurisation
Blood	3	Pasteurisation
Parts of slaughtered animals (not fit for human consumption) ⁽¹⁾	3	Pasteurisation
Screenings, flotation sludge (> 6 mm)	2	Sterilisation
Content of fat removal devices, flotats (< 6 mm) ⁽²⁾	–	
Washings (purely liquid fraction)	–	

⁽¹⁾ from animals fit for human consumption (*ante mortem*), identified as not fit for human consumption after *post-mortem* inspection

⁽²⁾ without reduction of particle size and removed from the waste water stream after the waste water pre-treatment unit

This biogas plant is registered by the competent authorities and has to be approved according to Article 15 of the ABP-Regulation. A pasteurisation unit which cannot be by-passed must be available and a concept of control and monitoring must be followed. The microbiological parameters for digestates (see Table 7, page 16) must be applied.

Manure as well as digestive tract content (separated from the digestive tract) may be processed in the biogas plant without pre-treatment.

All ABP of Category 3 such as slaughtering by-products, bones, intestines as well as blood are to be pasteurised before processing in a biogas plant.

Any materials removed from the waste water stream before the prescribed waste water pre-treatment unit in slaughterhouses are regarded as materials of Category 2 and, like these, are to be sterilised by steam pressure prior to processing in a biogas plant.



Materials of Category 2 and 3 sterilised with steam pressure may be fed to a biogas plant without any further pre-treatment. For materials which have passed the waste water pre-treatment unit the ABP-Regulation is not effective.

Biogas plant at a bovine slaughtering facility

Table 6: Substrates for biogas plant model 4 (bovine abattoir)

SUBSTRATE	CATEGORY	REQUIRED TREATMENT
Manure from bovine animals	2	No pre-treatment required
Rumen content (stomach content)	2	No pre-treatment required
Rumen	3	Pasteurisation
Slaughter by-products, bones	3	Pasteurisation
Parts of slaughtered animals (not fit for human consumption) ⁽¹⁾	3	Pasteurisation
Blood	3 oder 1	Pasteurisation or incineration
Bones: vertebral column and skull	1	Sterilisation, incineration
Intestines	1	Sterilisation, incineration
Screenings (bigger than 6 mm)	1	Sterilisation, incineration
Content of fat removal devices (particles < 6 mm) ⁽²⁾	–	
Washings (purely liquid fraction)	–	

⁽¹⁾ from animals fit for slaughter (*ante mortem*), identified as not fit for human consumption after *post-mortem* inspection

⁽²⁾ without reduction of particle size and removed from the waste water stream after the waste water pre-treatment unit

The plant is registered by the competent authorities and approved according to Article 15 of the ABP-Regulation. Hence follows the necessity of a pasteurisation unit which cannot be by-passed and a concept of control and monitoring for this digestion plant. Additionally the hygiene parameters for the digestates (requirements on digestates) are to be applied.

Manure and rumen content may be fed to the biogas plant without pre-treatment. Rumen, slaughtering by-products and bones are regarded as ABP-material of Category 3 fit for human consumption and must be fed to the biogas plant by passing the hygienisation unit.

If it is guaranteed that no SRM gets into the blood stream during slaughtering (reliable sepa-



ration of blood draining unit and SRM-removal unit, retention of blood until the submission of a negative BSE-test, etc.), bovine blood can be considered as material of Category 3. Otherwise bovine blood is to be “disposed of” as mixture together with SRM.

Materials of Category 1 must not be fed to the biogas plant.

Content of fat removal devices (gained after the screen with mesh size of 6 mm) as well as washings (purely liquid fraction) are not subject to any provisions of this Regulation (note: but they are subject to national and international regulations for waste water and waste).

At present the biogas technology is not designated for the treatment of material of Category 1. It is intended, however, that other methods and processes (other than those mentioned in the ABP-Regulation) may be assessed by the Scientific Steering Committee (SSC) and approved by the Commission afterwards. For that it is required to submit a detailed description of the alternative process method or procedure, including an appropriate risk-assessment, to the Commission of the EC.

Requirements on fermentation end products (digestates)

Table 7: End product parameters for digestates and fermentation end products

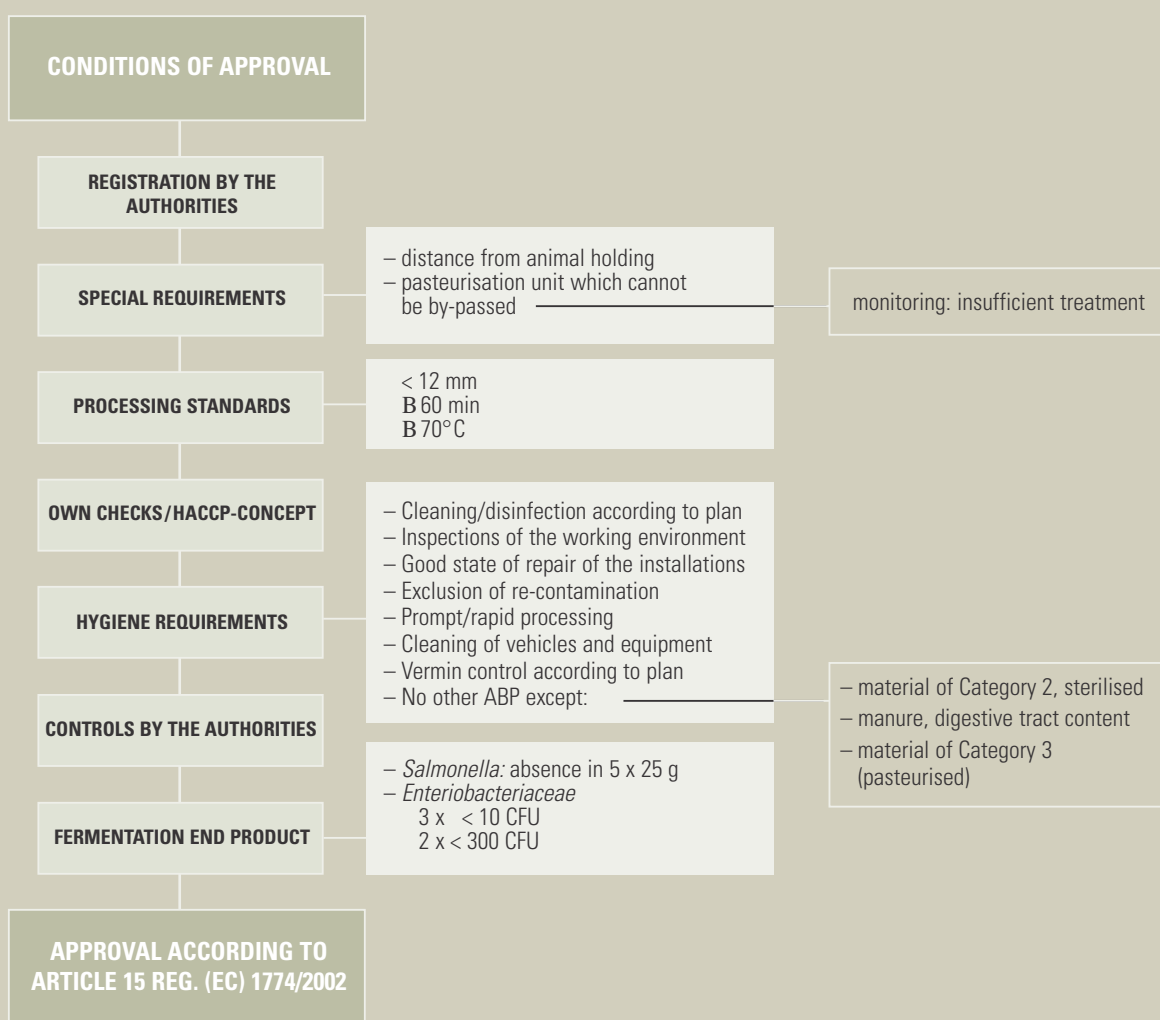
PRODUCT	PRODUCT PARAMETER
UNPROCESSED AND DIGESTED MANURE Placing on the national market	None
MANURE PRODUCTS	heat-treatment (B 60 min., B 70°C) <i>Salmonella</i> : absence in 25 g <i>aerobic Enterobacteriaceae</i> < 1000 CFU/g treatment for the reduction of creators of spores and toxin, storage in special containers
FERMENTATION END PRODUCTS Biogas plant approved in compliance with Article 15	<i>Salmonella</i> : absence in 5 samples of 25 g each <i>Enterobacteriaceae</i> in 5 samples of 1g each: 3 samples: <10 CFU/g, 2 samples < 300 CFU/g
FERMENTATION END PRODUCT manure and catering waste	according to national regulations (with restrictions)

Conditions of approval for biogas plants and composting plants according to Article 15 (EC) 1774/2002

Biogas plants processing animal by-products must be registered by the authorities and approved according to Article 15 of the ABP-Regulation.

The following figure illustrates which requirements are to be fulfilled in order to be approved by the (competent) authority.

Figure 2: Survey of the conditions of approval concerning biogas plants according to Article 15 of the ABP-Regulation (EC) No 1774/2002



i Information

HACCP

Method of **H**azard **A**nalysis of **C**ritical **C**ontrol **P**oints

In a biogas plant:

All points and process steps whose monitoring guarantee a hygienically unobjectionable product have to be identified and monitored.



Plants' own check / HACCP-Concept

The principle of (direct) responsibility of the operator and owner of plants or their representatives is a cornerstone of the demands on the biogas plants of the Regulation (EC) No. 1774/2002. By the compliance with conditions of acceptance (e.g. non-acceptance of questionable batches) and hygienic operating conditions (e.g. compliance with the “principle of clean and unclean sector”, pasteurisation of the substrate, etc.) the potential health risk which may emanate from a biogas plant or its digestate can be reduced.

In the Regulation (EC) 1774/2002 a concept for self monitoring according to the system of hazard analysis of critical control points (HACCP-Concept) is demanded of the operators of biogas plants which use animal by-products (as substrates). For biogas plants such a (practicable) concept of control and monitoring following the HACCP-Concept has to be developed.

Any operator of a biogas plant has to identify or define and describe the critical control points of their plants. When operating the plant it has to be controlled and documented if the parameters or standards in the respective control points have been applied.

Below examples of control points (from a hygienic point of view) when operating a biogas plant are listed.

Table 8: A description of the critical control points must include:

- Description of the place or procedure that is identified as a critical control point
- Description of the actual risk factors and an evaluation of the significance of these
- Preventive activities in order to minimise or delete the risk
- Monitoring: method and frequency
- Definition of critical values
- Plan for correcting activities when critical values are exceeded.

Table 9: Examples for control points in biogas plants

CONTROL POINTS (DIRECT)	POSSIBLE FAILURES
RECEIPT OF RAW SUBSTRATE	
Manure	High contamination with pathogens
Vegetable substrates	Unintentional pathogen contamination
Animal substrate	Insufficient pre-treated
Material of Category 2 and/or 3; pre-treated or not pre-treated	
TRANSPORT	
Separation between raw material and end product	Mixture of untreated raw material and end product (treated)
Animal by-products	
HYGIENISATION	
Pasteurisation material Category 3	Insufficient hygienisation Failure in temperature, time, particle size Exceptionally high pathogen contamination
STORAGE OF THE END PRODUCTS	
	Recontamination from environment Growth of remaining pathogens
DELIVERY	
Transport of heat-treated material or end product	Cross contamination between clean and unclean areas, means of transport and containers

Table 10: Examples for general hygiene requirements

GENERAL HYGIENE REQUIREMENTS	POSSIBLE FAILURES
MAINTAINANCE OF PREMISES AND EQUIPMENT	Generally dissatisfying hygiene conditions
INTERCALIBRATION AND CHECK OF MONITORING AND MEASURING INSTRUMENTS	Insufficient validity of the plants' own system of control
PREVENTION OF SPREADING ANIMAL DISEASES	insufficient separation and distance from ani- mal holdings and feed storage facilities
PEST CONTROL	Spreading of pathogens Cross contamination between clean and unclean sector
CLEANING AND DISINFECTION	Internal re-infection ("in-house") Continuous contamination of heat-treated substrates Cross contamination between clean and unclean sectors (i.e via aerosols)
EDUCATION OF STAFF	Uncertainty about aim and methods of the plants' own check system and unclear delega- tion of responsibility

References

Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption
(Official Journal L 273 10/10/2002 P. 0001 – 0095)

Commission Regulation (EC) No 808/2003 of 12 May 2003 amending Regulation (EC) No 1774/2002 of the European Parliament and of the Council laying down health rules concerning animal by-products not intended for human consumption
(OJ L 117/1, 13/05/2003 P. 0001 – 0009)

Commission Regulation (EC) No 809/2003 of 12 May 2003 on transitional measures under Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the processing standards for category 3 material and manure used in composting plants (OJ L 117/10, 13/05/2003 P. 0010 – 0011)

Commission Regulation (EC) No 810/2003 of 12 May 2003 on transitional measures under Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards processing standard for category 3 material and manure used in biogas plants
(OJ L 117/12, 13/05/2003 P. 0012 – 0013)

Commission Regulation (EC) No 811/2003 of 12 May 2003 implementing Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the intra-species recycling ban for fish, the burial and burning of animal by-products and certain transitional measures
(OJ L 117/14, 13/05/2003 P. 0014 – 0018)

Commission Regulation (EC) No 812/2003 of 12 May 2003 on transitional measures under Regulation (EC) No 1774/2002 of the European Parliament and of

the Council as regards the importation and transit of certain products from third countries
(OJ L 117/19, 13/05/2003 P. 0019 – 0021)

Commission Regulation (EG) No 813/2003 of 12 May 2003 on transitional measures Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the collection, transport and disposal of former foodstuffs
(OJ L 117/22, 13/05/2003 P. 0022 – 0023)

2003/328/EC: Commission Decision of 12 May 2003 on transitional measures under Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the use of category 3 catering waste in feed for pigs and the intra-species recycling ban on the feeding of swill to pigs
(OJ L 117/46, 13/05/2003 P. 0046 – 0050)

2003/334/EC: Commission Decision of 13 May 2003 on transitional measures under Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the material collected when treating waste water (OJ L 118/10, 14/05/2003 P. 0010 – 0011)

Regulation (EC) No 999/2001 of the European Parliament and of the Council of 22 May 2001 laying down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies (OJ L147, 31/05/2001 P. 0001 – 0040)

Commission Regulation (EC) No 1139/2003 of 27 June 2003 amending Regulation (EC) No 999/2001 of the European Parliament and of the Council as regards monitoring programmes and specified risk material (OJ L 160, 28/06/2003 P. 0022 – 0032)

79/542/EEC: Council Decision of 21 December 1976 drawing up a list of third countries from which the Member State authorize imports of bovine animals, swine and fresh meat
(OJ L 146, 14/06/1979 P. 0015 – 0017)

Links

Legislation of the European Community

<http://europa.eu.int/eur-lex>

European Commission - Food safety:

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

European Commission - Environment:

http://europa.eu.int/comm/environment/index_en.htm

IEA

<http://www.ieabioenergy.com>

IEA Task 37

www.novaenergie.ch/iea-bioenergy-task37

IFA-Tulln

<http://www.ifa-tulln.ac.at/ut>

<http://www.codigestion.com>

Abbreviations

ABP	animal by-products
BSE	bovine spongiform encephalopathy (mad cow disease)
Cat.	Category
CFU	colony forming units (number of bacteria)
OJ	Official Journal
Reg.	Regulation
SRM	specified risk material
TSE	transmissible spongiform encephalopathy (e.g. BSE)

IEA Bioenergy

Task 37 - Energy from Biogas and Landfill Gas

IEA Bioenergy aims to accelerate the use of environmental sound and cost-competitive bioenergy on a sustainable basis, and thereby achieve a substantial contribution to future energy demands

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