



Analysis of Legal Framework for insect bioconversion

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Historic situation

- ▶ COUNCIL DIRECTIVE 58/1998 protection of farmed animals: excludes invertebrates
- ▶ Regulation 1099/2009: protection of animals at the time of killing: excludes invertebrates
- ▶ Animal By-products Regulation 1069/2009: insects are farmed animals
- ▶ Regulation 999/2001 TSE
- ▶ Regulation 893/2017: INSECT PAP'S, quid FEEDSTOCK FOR INSECTS
 - ▶ Confirmation of “farmed animals”, of applicability of 999/2001 and of 1069/2009
 - ▶ Exclusion of (nearly) all **Animal By-Products as feedstock**, with specific mention for ruminant proteins, catering waste, meat-and-bone meal, manure and faeces
 - ▶ Link between feedstock and final application of insect-derived product

Regarding insect bioconversion of waste streams, paragraph 6 of the Preamble is particularly interesting: *As per the definition of ‘farmed animals’ laid down in Article 3(6) of Regulation (EC) No 1069/2009, insects bred for the production of processed animal protein derived from insects are to be considered as farmed animals, and are therefore subject to the feed ban rules laid down in Article 7 and Annex IV to Regulation (EC) No 999/2001 as well as to the rules of animal feeding laid down in Regulation (EC) No 1069/2009.*

What feedstock for insects?

► SPECIAL FEEDING PURPOSES UNDER REGULATION 1069

Under Article 18, several “Special feeding purposes” have been outlined, under which Category 3 and even specific Category 2 Animal By-Products are authorised for feeding to:

- (a) zoo animals;
- (b) circus animals;
- (c) reptiles and birds of prey other than zoo or circus animals;
- (d) fur animals;
- (e) wild animals;
- (f) dogs from recognised kennels or packs of hounds;
- (g) dogs and cats in shelters;
- (h) maggots and worms for fishing bait.

If the legislator would want to make a similar effort to allow for insect bioconversion of Category 3 Animal By-Products (or even Category 2), it only needed to extend the clause (h) to read “maggots and worms for fishing bait and/or other technical applications”.

What feedstock for insects?

▶ ALTERNATIVE METHODS OF USE OR DISPOSAL OF ABPs UNDER REGULATION 1069

(30) Progress in science and technology may lead to the *development of processes which eliminate or minimise the risks to public and animal health*. Amendments to the lists of animal by-products set out in this Regulation should be possible, in order to take account of such progress. Prior to any such amendments, and in accordance with the general principles of Community legislation aimed at ensuring a high level of protection of public and animal health, a risk

assessment should be carried out by the European Commission. The Commission should take account of the type of animal by-product and the risk that once animal by-products are placed on the market in accordance with the highest risk category.

(44) Novel technologies which are being developed offer advantageous ways of generating energy on the basis of animal by-products or of *providing for the safe disposal of such products*. Safe disposal may take place through a combination of methods for the safe containment of animal by-products on site with established disposal methods, and through a combination of

authorised processes. The Commission should take account of the type of animal by-product and the risk that once animal by-products are placed on the market in accordance with the highest risk category. *authorised as:* Community.

Article (4) New technologies have widened the possible use of animal by-products to a large number of productive sectors, in particular for the generation of energy. However, the use of those new technologies might pose health risks that must also be taken into account. Article (5) Community health rules for collection, transport, handling, treatment, transport, processing, storage, placing on the market, distribution, use or disposal of animal by-products should be laid down in a coherent and comprehensive framework.

Article (6) Those general rules should be *proportionated to the risk to public and animal health* which animal by-products pose when they are dealt with by operators at different stages of the chain from collection to their use or disposal. The rules should also take into account the environment posed during those operations. The Community framework should include health rules on the placing on the market, including intra-Community trade and importation of animal by-products, where appropriate.

What feedstock for insects?

► REGULATION 767/2009 ON THE PLACING ON THE MARKET AND USE OF FEED, frontdoor

This Regulation applies, given the risk of contamination of the feed and food chain, to feed for both food and non-food producing animals, including wild animals.

Regulation 767

Article 6

Restriction and prohibition

1. Feed shall not contain or consist of materials whose placing on the market or use for animal nutritional purposes is restricted or prohibited. The list of such materials is set out in Annex III.

Chapter 1: Prohibited materials

- 1. **Faeces, urine** and separated digestive tract content resulting from the emptying or removal of digestive tract, irrespective of any form of treatment or admixture.*
- 2. Hide treated with tanning substances, including its waste.*
- 3. Seeds and other plant-propagating materials which, after harvest, have undergone specific treatment with plant-protection products for their intended use (propagation), and any by-products derived therefrom.*
- 4. **Wood**, including sawdust or other materials derived from wood, which has been **treated with wood preservatives** as defined in Annex V to Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market.*
- 5. **All waste obtained from the various phases of the treatment of the urban, domestic and industrial waste water**, as defined in Article 2 of Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment, irrespective of any further processing of that waste and irrespective of the origin of the waste waters.*
- 6. **Solid urban waste**, such as household waste.*
- 7. **Packaging** from the use of products from the agri-food industry, **and parts thereof**.*
- 8. Protein products obtained from yeasts of the *Candida* variety cultivated on n-alkanes.*

What feedstock for insects?

- ▶ REGULATION 767/2009 ON THE PLACING ON THE MARKET AND USE OF FEED, frontdoor

CHAPTER 6

GENERAL AND FINAL PROVISIONS

Article 27

Implementing measures

1. The Commission may amend the Annexes in order to adapt them in light of scientific and technological developments.

Those measures, designed to amend non-essential elements of this Regulation, inter alia, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 28(4).

The room for derogations under this Regulation is fairly limited:

Article 21

8. By way of derogation from the provisions of this Regulation, Member States may apply national provisions for feed intended for animals kept for scientific or experimental purposes on condition that such purpose is clearly indicated on the label. The Member States shall notify those provisions to the Commission without delay.

EU law on insect derived products?

► REGULATION 1069/2009

Regulation 1069 categorizes in Article 7 the different types of Animal By-Product “into specific categories which reflect the level of risk to public and animal health.”

Article 10 (l) defines the “Category 3 material”, to comprise the following animal by-products: aquatic and terrestrial invertebrates other than species pathogenic to humans or animals

This is clearly good news for insect bioconversion, because Category 1 is highest risk, and Category 3 is lowest risk.

Article 14

Disposal and use of Category 3 material

Category 3 material shall be:

- (a) disposed of as waste by incineration, with or without prior processing;
- (b) recovered or disposed of by co-incineration, with or without prior processing, if the Category 3 material is waste;
- (c) disposed of in an authorised landfill, following processing;
- (d) processed, except in the case of Category 3 material which has changed through decomposition or spoilage so as to present an unacceptable risk to public or animal health, through that product, and used:
 - (i) for the **manufacturing of feed for farmed animals** other than fur animals, to be placed on the market in accordance with Article 31, except in the case of material referred to in Article 10(n), (o) and (p);
 - (ii) for the **manufacturing of feed for fur animals**, to be placed on the market in accordance with Article 36;
 - (iii) for the **manufacturing of pet food**, to be placed on the market in accordance with Article 35; or
 - (iv) for the **manufacturing of organic fertilisers or soil improvers**, to be placed on the market in accordance with Article 32;
- (e) used for the production of raw pet food, to be placed on the market in accordance with Article 35;
- (f) composted or transformed into biogas;
- (g) in the case of material originating from aquatic animals, ensiled, composted or transformed into biogas;
- (h) in the case of shells from shellfish, other than those referred to in Article 2(2)(f), and egg shells, used under conditions determined by the competent authority which prevent risks arising to public and animal health;
- (i) used as a fuel for combustion with or without prior processing;
- (j) used for the **manufacture of derived products** referred to in Articles 33, 34 and 36 and placed on the market in accordance with those Articles;
- (k) in the case of catering waste referred to in Article 10(p) processed by pressure sterilisation or by processing methods referred to in point (b) of the first subparagraph of Article 15(1) or composted or transformed into biogas; or
- (l) applied to land without processing, in the case of raw milk, colostrum and products derived therefrom, which the competent authority does not consider to present a risk of any disease communicable through those products to humans or animals.

EU law on insect derived products?

- ▶ INSECT PAP-REGULATION 893/2017: into force since 1st July 2017

Regulation 893/2017 allows “Processed animal protein derived from insects and compound feed containing such processed animal protein” for feeding aquaculture animals.

Insect-PAP must be produced in processing plants approved in accordance with Regulation (EC) 1069/2009 and dedicated exclusively to the production of products derived from farmed insects.

Compound feed containing processed animal protein derived from farmed insects must be produced in establishments authorised for that purpose by the competent authority and which are dedicated exclusively to the production of feed for aquaculture animals.

- ▶ Insect PAPs beyond aquaculture

In a second stage, the use of insect PAP in feed for pigs and poultry could be authorised under the condition that the substrate and the processing of the insects ensure that there is no risk of transmission of pathogens.

DNA-tests are under development, to test for the absence of pig or poultry protein in the Farmed Insect PAP, to avoid the so-called “cannibalism”.

EU law on insect derived products?

► INSECT ALLOWED FOR INSECT-PAP'S

Under Regulation 893, insect-PAP, intended for the production of feed for farmed animals other than fur animals, may only be obtained from the following insect species:

- Black Soldier Fly (*Hermetia illucens*)
- Common Housefly (*Musca domestica*)
- Yellow Mealworm (*Tenebrio molitor*)
- Lesser Mealworm (*Alphitobius diaperinus*)
- House cricket (*Acheta domesticus*)
- Banded cricket (*Gryllodes sigillatus*)
- Field Cricket (*Gryllus assimilis*)

Revision of Reg 2003/2003

► General provisions: **Product Function Categories**

- Definition of primary and secondary macro-nutrients; straight and compound fertilizers
- Assignment of responsibility regarding product quality, conformity assessment procedures, market surveillance authorities' obligations, and general subsidiarity competence clauses
- A list of “product function categories” (PFC) and the product requirements (in Annex I)

► Revision of other Regulations

The revision of Reg 2003/2003 also includes minor but important revisions to

- Reg 1069/2009 on Animal By-Products: end-point of manufacturing chain
- Directive 2008/98/EC on waste: End-of-Waste status

1. Fertiliser:	A. Organic fertiliser	I. Solid organic fertiliser	
		II. Liquid organic fertiliser	
	B. Organo-mineral fertiliser	I. Solid /	II. Liquid
	C. Inorganic fertiliser	I. macronutrient	II. micronutrient
2. Liming material			
3. Soil improver	A. Organic / B. Inorganic		
4. Growing medium			
5 Inhibitor	A. Nitrification inhibitor		
	B. Denitrification inhibitor		
	C. Urease inhibitor		
6. Plant biostimulant	A. Microbial plant biostimulant		
	B. Non-microbial plant biostimulant		
7. Fertilising product blend			



Thank you! Questions?

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