Directorate-General for Agriculture

and Rural Development

Expert Group for Technical Advice on Organic Production

EGTOP

Final Report

on

Fertilizers and soil conditioners

The EGTOP adopted this technical advice at the 3rd plenary meeting
on 29 and 30 June 2011

About the setting up of an independent expert panel for technical advice

With the Communication from the Commission to the Council and to the European Parliament on a European action plan for organic food and farming adopted in June 2004, the Commission intended to assess the situation and to lay down the basis for policy development, thereby providing an overall strategic vision for the contribution of organic farming to the common agricultural policy. In particular, the European action plan for organic food and farming recommends, in action 11, establishing an independent expert panel for technical advice. The Commission may need technical advice to decide on the authorisation of the use of products, substances and techniques in organic farming and processing, to develop or improve organic production rules and, more in general, for any other matter relating to the area of organic production. By Commission Decision 2009/427/EC of 3 June 2009, the Commission set up the Expert Group for Technical Advice on Organic Production (EGTOP).

EGTOP

The Group shall provide technical advice on any matter relating to the area of organic production and in particular it must assist the Commission in evaluating products, substances and techniques which can be used in organic production, improving existing rules and developing new production rules and in bringing about an exchange of experience and good practices in the field of organic production.

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The report of the Expert Group presents the views of the independent experts who are members of the Group. They do not necessarily reflect the views of the European Commission. The reports are published by the European Commission in their original language only, at the following webpage:

www.organic-farming.europa.eu

ACKNOWLEDGMENTS

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All declarations of interest of Permanent group and Sub-groups members are available at the following webpage:

www.organic-farming.europa.eu

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EXECUTIVE SUMMARY

The expert group for technical advice on organic production (EGTOP; thereafter called 'the Group') has discussed whether the use of the substances/products/techniques mentioned below is in line with objectives, criteria and principles as well as the general rules laid down in Council Regulation (EC) 834/2007 and whether they can therefore be authorised in organic production under the EU legislation. The Group concluded the following:

- Hydrolysed proteins from animal by-product origin are in line with the objectives, criteria and principles of organic farming and should be included in Annex I to Commission Regulation (EC) No 889/2008, with the following restrictions: (i) Chemical hydrolysis only exceptionally acceptable in cases where it is required by Regulation 142/2011; (ii) not to be applied to edible crop parts.
- Leonardite is in line with the objectives, criteria and principles of organic farming and should be included in Annex I with the following restriction: only, if obtained as a by-product of other mining activities.
- Chitin is in line with the objectives, criteria and principles of organic farming and should be included in Annex I. The Group recommends that only chitin products originating from sustainable fisheries or organic aquaculture should be used.
- Sapropel, as well as similar organic sediments from fresh water bodies, are in line with the objectives, criteria and principles of organic farming and should be included in Annex I, with the following restrictions: (i) Only organic sediments that are by-products of water body management, and which are extracted in ways that cause minimal negative impact on the aquatic ecosystem, should be used; (ii) Same limits for heavy metals, as given in Annex I for household waste, should be applied; (iii) Sediments rich in contaminants such as petrol-like substances should not be used.
- Animal (including wild animals) by-products of category 3 and digestive tract content (category 2), co-digested with organic materials included in Annex I, are in line with the objectives, criteria and principles of organic farming and should be included in Annex I with the following restrictions: (i) animal by-products must not be from factory farming; (ii) not to be applied to edible crop parts.
- The technique of carbon dioxide enrichment should be considered in general discussions on a set of standards for organic protected cropping. In the opinion of the group, carbon dioxide rebalancing, as well as enrichment to elevated levels, is not in contradiction to the Council regulation. The group concluded that certain forms of carbon dioxide enrichment techniques could be in line with organic farming principles. However, the group has not concluded whether carbon dioxide from all origins should be acceptable.

The Group has also drafted the template for the dossier mentioned in Art. 16(3)(b) of Council Regulation (EC) 834/2007 in relation to fertilizers and soil conditioners.

Finally, the Group noted that the compositional requirements in Annex I of Commission Regulation (EC) No 889/2008 for 'composted or fermented household waste' and for 'products and by-products of animal origin […]' require a limit of "0" for Cr (VI). The group agreed that it would be more appropriate to write "not detectable" instead of "0".

1. BACKGROUND

In recent years, several Member States have submitted dossiers under Article 16(3)(b) of Council Regulation (EC) No 834/2007 concerning the possible inclusion of a number of substances in Annex I to Commission Regulation (EC) No 889/2008.

In relation to fertilizers and soil conditioners, Italy launched a new request in 2009 concerning Hydrolysed Proteins. In 2010, France supported a previous request made by Italy on Leonardite, and submitted a new request on Chitin and on the use of CO_2 as method to enrich the atmosphere in glasshouses. Lithuania submitted a dossier on Sapropel in 2009 and in 2010 Sweden presented a dossier on Digestate from the use of biogas where the input is animal by-products.

A need has been identified to provide Member States with a template with a view to facilitate the elaboration of complete technical dossiers.

2. TERMS OF REFERENCE

a) In the light of the most recent technical and scientific information available to the experts, the Group is requested to answer the following question:

Is the use of the following substances/products/techniques:

Hydrolysed proteins
Leonardite
Chitin
Sapropel
Digestate from the use of biogas where the input is animal by-products
Carbon dioxide enrichment technique in glasshouses

in line with objective, criteria and principles as well as the general rules laid down in Council Regulation (EC) 834/2007 and can they therefore be authorised in organic production under the EU legislation?

In preparing its final report, the Group may also suggest amendments to the current list in Annex I as well as take into account possible alternatives to the substances in question. In such cases, the proposal(s) should be accompanied by a brief explanation of the reasons.

b) The Group is also requested to draft the template of the dossier mentioned in Art. 16(3)(b) of Council Regulation (EC) 834/2007 in relation to fertilizers and soil conditioners.

3. CONSIDERATIONS AND CONCLUSIONS

3.1 Hydrolysed proteins

Identification of substance, terminology, synonyms
Hydrolysed proteins are degraded natural substances. They are a mixture of amino acids, peptides, polypeptides and denatured proteins of animal by-product origin.

Authorization in general agriculture or food processing
Authorized in some member states (e.g. Italy (D. Lgs 75/2010), Spain, Germany).

Agronomic use, technological or physiological functionality for the intended use
The major use is as a nitrogen fertilizer. According to the information provided with the dossier, it can also be used as a bio-stimulant and as complexing agent. Used mainly in vegetables, fruit trees and winter cereals (in Mediterranean regions), ornamentals and transplants. Can be applied on soil or on foliage (bio-stimulant). The bio-stimulant effect claimed in the dossier could not be verified by the Group.

Necessity of intended use, alternatives
Hydrolysed proteins may be used on crops where there is a high nitrogen demand at specific, short phases of their life cycle, in order to achieve desired quality. For organic crops, such as short-cycled vegetables, there are not many materials available which may be used for liquid fertilization / fertigation (see Annex I). In Germany, hydrolysed proteins from plant origin are available and used as an alternative.

Origin of materials, methods of manufacture
Origin of materials: factory farming origin cannot be excluded, at least for part of the raw material. Animal by-products of similar origin are already listed in Annex I under the heading "products or by-products of animal origin".
Technically, it is possible to manufacture hydrolysed proteins by thermal, enzymatic or chemical hydrolysis. However, when ruminants' hides and skins are used as raw materials, chemical hydrolysis is mandatory according to Commission Regulation No 142/2011 and has to take place together with a thermal treatment specified therein.
The group had no objections to thermal and enzymatic hydrolysis. Chemical hydrolysis was considered less preferable, but exceptionally acceptable in cases where it is required by Regulation 142/2011.

Environmental issues
N losses should not occur when good agricultural practices are followed.
Thermal and chemical hydrolyses have potential, negative environmental implications such as energy and chemical use. On the other hand, other materials which are already present in Annex I such as seaweed products or industrial lime from sugar production are also obtained with treatments in acidic and alkaline environments.

Animal welfare issues
Factory farming origin of the raw material cannot be excluded, but the group did not consider this as a major issue.

Human health issues
Hydrolysed proteins must be produced in accordance with the provisions given in Reg. 142/2011. Therefore, the group has no specific concerns on human health issues.

Food quality and authenticity
Hydrolysed proteins may help to achieve desired quality (e.g. protein content of durum wheat). The group recommends that applications to edible parts of crops should not be allowed for sanitary and ethical reasons (vegetarians).

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007
The recycling of wastes and by-products of plant and animal origin as input in plant and livestock production is a principle of organic farming (Reg. 834/2007, Art. 5(c)). Chemical hydrolysis is less in line with the principles of organic production than thermal and enzymatic hydrolysis.

Traditional use and precedents in organic production
(1) Animal by-products of similar origin are already listed in Annex I under the heading "products or by-products of animal origin". (2) Some plant strengtheners registered in Germany contain hydrolysed proteins (both plant and animal origin). These may be used in organic farming. (3) Hydrolysed proteins are used in organic farming in Italy since 1999. (4) They are authorized as attractants for plant protection (Reg. 889/2008, Annex II (1.)).

Aspects of international harmonization of organic farming standards
USA: Hydrolysed proteins from thermal and microbial hydrolysis are allowed. Hydrolysed proteins from chemical hydrolysis are not allowed.

Conclusion
The group concluded that hydrolysed proteins from animal by-product origin are in line with the objectives, criteria and principles of organic farming and should be included in Annex I, with the following restrictions:

- Chemical hydrolysis only exceptionally acceptable in cases where it is required by Regulation 142/2011
- not to be applied to edible crop parts

3.2 Leonardite

Identification of substance, terminology, synonyms
Raw organic sediment rich in humic acids. This evaluation concerns only leonardite, but not extracted humic-like substances obtained from leonardite.

Authorization in general agriculture or food processing
Its use is authorized in Italy as soil conditioner (legislation D. Lgs 75/2010).

Agronomic use, technological or physiological functionality for the intended use
Leonardite is used as a soil conditioner. The group assumes that it mainly improves the soil physical properties. However, the group has doubts whether the intended purpose can be achieved with the quantities mentioned in the dossier (100 – 500 kg/ha).

Necessity for intended use, alternatives
Leonardite may be useful only in certain soils (e.g. soils with high clay content or sandy soils). There are alternatives, e.g. compost, stone meal.

Origin of materials, methods of manufacture
In the evaluation, the group assumed that leonardite is obtained as a by-product of mining coal, and that it undergoes minimal processing, mainly physical.

Environmental issues
No specific concerns.

Animal welfare issues
No specific concerns.

Human health issues
No specific concerns (risks for the user are similar to other, powdery substances [dust]).

Food quality and authenticity
No specific concerns.

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007
Use of a by-product otherwise unused.

Traditional use and precedents in organic production
None.

Aspects of international harmonization of organic farming standards
USA: allowed.

Conclusion
The Group concluded that leonardite is in line with the objectives, criteria and principles of organic farming and should be included in Annex I with the following restriction:

- only, if obtained as a by-product of other mining activities

3.3 Chitin

Identification of substance, terminology, synonyms
Polysaccharide from the shell of crustaceans, fungi etc. It has a similar structure to cellulose, but it contains also nitrogen. It is the second most frequent biopolymer on earth (after cellulose). This evaluation concerns only chitin, but not its derivative chitosan.

Authorization in general agriculture or food processing
Products based on chitin are on the market in Germany as "plant strengtheners".

Agronomic use, technological or physiological functionality for the intended use
Chitin is very stable and breaks down slowly; the nitrogen is therefore not readily available. In addition, the group assumes that chitin is used at levels too low for it to act as a nitrogen fertilizer. Chitin is used as a soil conditioner to stimulate microbial activity: the addition of chitin to the soil will promote chitin-metabolizing micro-organisms. These may thus act against certain pathogenic fungi, by breaking down their chitin cell walls.
Chitin products often contain high levels of Na and Cl. This could be a limiting factor, if used in high quantities in clay and salinized soils.

Necessity for intended use, alternatives
Assumed to specifically stimulate chitin-metabolizing micro-organisms.

Origin of materials, methods of manufacture
Obtained from crab or shrimp shells from wild catch as a by-product of the food industry.

Environmental issues
Products originating from sustainable fisheries or organic aquaculture should be used in preference.

According to the dossier, shrimps are obtained from wild catch. In this case, the group identified no negative environmental impacts of the use of chitin. If shrimps from non organic aquaculture are used for producing chitin, attention should be given to the potential environmental impact and presence of contaminants, such as antibiotics.

Animal welfare issues
No specific concerns.

Human health issues
There are indications that chitin might cause allergies[1]. Operators should be aware of this potential risk. However, the group does not consider this as a major concern in relation to the question whether chitin should be allowed in organic production.

Food quality and authenticity
No specific concerns.

[1] T.A. Reese, H.E. Liang, A.M. Tager, A.D. Luster, N. Van Rooijen, D. Voehringer & R.M. Locksley (2007): Chitin induces accumulation in tissue of innate immune cells associated with allergy. Nature 447: 92-96.

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007
The recycling of wastes and by-products of plant and animal origin as input in plant and livestock production is a principle of organic farming (Reg. 834/2007, Art. 5(c)).

Traditional use and precedents in organic production
(1) According to the information provided with the dossier, in farms near the sea, shrimp or crab shells are sometimes added to compost. (2) Some plant strengtheners registered in Germany are based on chitin, which is obtained from shrimp shells. These may be used in organic farming.

Aspects of international harmonization of organic farming standards
USA: allowed.

Conclusion
The Group concluded that chitin is in line with the objectives, criteria and principles of organic farming and should be included in Annex I. The Group recommends that only products originating from sustainable fisheries or organic aquaculture should be used.

3.4 Sapropel

Identification of substance, terminology, synonyms
Sapropel is an organic-rich sediment formed at the bottom of a body of water under the exclusion of oxygen.
The request was to allow sapropel from Baltic lakes, but the group does not want to restrict the regional origin of such materials. Therefore, this evaluation concerns sapropel as well as similar organic sediments from surface fresh water bodies from all regions. Sediments from the sea (bottom water) can be associated with petrol formation and were specifically excluded from the evaluation.

Authorization in general agriculture or food processing
The Group had no information on this aspect.

Agronomic use, technological or physiological functionality for the intended use
According to the dossier, sapropel may be added to soil for increasing soil organic matter content. It is also a fertilizer (P and micro-nutrients; sometimes also N).

Necessity for intended use, alternatives
There are alternatives, e.g. compost and manure.

Origin of materials, methods of manufacture
This organic material is abundant in fresh water bodies in Northern Europe. The abundance in other regions is unknown to the group.

Environmental issues
To avoid contamination of the soil, sediments with high heavy metal content should not be used (same limits for heavy metals, as given in Annex I for household waste, should be applied). Sediments rich in contaminants such as petrol-like substances should not be used.
Only organic sediments that are by-products of water body management, and which are extracted in ways that cause minimal negative impact on the aquatic ecosystem, should be used.

Animal welfare issues
No specific concerns.

Human health issues
No specific concerns, given that the limitations regarding heavy metals are adhered to.

Food quality and authenticity
No specific concerns.

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007
Use of a by-product otherwise unused.

Traditional use and precedents in organic production
The group is not aware of traditional uses of sapropel in organic farming.

Aspects of international harmonization of organic farming standards
Unknown to the group.

Conclusion
The Group concluded that sapropel, as well as similar organic sediments from fresh water bodies, are in line with the objectives, criteria and principles of organic farming and should be included in Annex I, with the following restrictions:

- Only organic sediments that are by-products of water body management, and which are extracted in ways that cause minimal negative impact on the aquatic ecosystem, should be used
- Same limits for heavy metals, as given in Annex I for household waste, should be applied.
- Sediments rich in contaminants such as petrol-like substances should not be used.

3.5 Digestate containing animal by-products

Identification of substance, terminology, synonyms
The terminology is not standardized across Europe. In this evaluation, the term "digestate" is used for all liquid and solid end-products of the digestion process. Animal by-products of category 3 and digestive tract content (category 2), co-digested with organic materials included in annex I of regulation (EC) no 889/2008, were evaluated.

Authorization in general agriculture or food processing
Authorized in general agriculture.

Agronomic use, technological or physiological functionality for the intended use
Digestate is used mainly as a fertilizer, and also as a soil conditioner. It contains a mixture of organically bound and mineral nutrients (ammonia).

Necessity for intended use, alternatives
The use of digestate from production of biogas is an important way of nutrient recycling. Where animal by-products are added to the raw materials for digestion, organic farmers should still be allowed to use the digestate. It can be a valuable fertilizer for organic farms, providing particularly N and P. The Group noted that in organic farming, there is a lack of sources for phosphorus (soft ground rock phosphate and bone meal are not appropriate for most of the soils). At the rural community level, the Group acknowledged the potential benefit in promoting co-operations which combine business opportunities, renewable energy production and the recycling of wastes at the local scale.

Origin of materials, methods of manufacture
Origin of materials: factory farming origin should be excluded for all materials, in line with the conditions for use of animal excrements in Annex I. Processes have to be in accordance with Reg 142/2011.

Environmental issues
The potential environmental impact is similar to other permitted N fertilizers, e.g. digestate from household waste.

Animal welfare issues
No concerns; factory farming origin is excluded for all materials.

Human health issues
No risks of BSE transmission. Application of Reg 142/2011 is mandatory.

Food quality and authenticity
The group recommends that applications to edible parts of crops should not be allowed for sanitary and ethical reasons (vegetarians).

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007
The recycling of wastes and by-products of plant and animal origin as input in plant and livestock production is a principle of organic farming (Reg. 834/2007, Art. 5(c)). The production of biogas is in line with the principle of environmental sustainability.

The inclusion of animal by-products for digestion should follow the same principles as for animal excrements in Annex I (exclusion of factory farming).

Traditional use and precedents in organic production
Digestate from household waste is included in Annex I.

Aspects of international harmonization of organic farming standards
USA: allowed, if only biological processes involved.

Conclusion
The Group concluded that animal (including wild animals) by-products of category 3 and digestive tract content (category 2), co-digested with organic materials included in annex I, are in line with the objectives, criteria and principles of organic farming and should be included in Annex I with the following restrictions:

- animal by-products must not be from factory farming
- not to be applied to edible crop parts

3.6 Carbon dioxide

Identification of substance, terminology, synonyms
Carbon dioxide, also known as CO_2, is a stable gas quite abundant in the Earth's atmosphere. It is necessary for photosynthesis. In this context, "rebalancing" refers to the application of carbon dioxide up to atmospheric level (350 ppm) while "enrichment" refers to the application of carbon dioxide above this level.

Authorization in general agriculture or food processing
The enrichment of carbon dioxide in greenhouses is generally allowed in agriculture.

Agronomic use, technological or physiological functionality for the intended use
The normal CO_2 concentration in the atmosphere is around 350 ppm, in greenhouses it can be artificially enriched up to 400-600 ppm (in some cases up to 1000 ppm or more). A higher CO_2 level compared to the normal concentration in the atmosphere has two effects: it enhances the growth and the health of the plants (more photosynthesis activity).

Necessity for intended use, alternatives
CO_2 enrichment helps to achieve increased yields and to obtain healthy growing plants.

Origin of materials, methods of manufacture
(1) Combustion fumes from heating (e.g. combined heat/electricity power facilities, gas heating); (2) bottled (liquid) carbon dioxide.
Prices for bottled carbon dioxide have fallen in recent years, because the capture and bottling of carbon dioxide in industrial processes is part of carbon sequestration activities, and therefore financially rewarded. Bottled carbon dioxide may originate from different sources such as (1) from natural carbon dioxide springs; (2) as a by-product of hydrogen production plants, where methane is converted to CO_2; (3) from combustion of fossil fuels and wood; (4) as a by-product of fermentation of sugar in the brewing of beer, whisky and other alcoholic beverages; (5) from thermal decomposition of limestone, $CaCO_3$, in the manufacture of lime (Calcium oxide, CaO).

Environmental issues
CO_2 is a gas with greenhouse effect (=relevance for global climate change). If the CO_2 used is a residual from energy consumption, it is generally positive to reuse it for increased crop production rather than just emitting it to atmosphere. Carbon dioxide enrichment techniques in protected cropping will not increase the levels in the global atmosphere outside normal ranges.

Animal welfare issues
No specific concerns.

Human health issues
The established maximum occupational exposure limit for safe working conditions is 5000 ppm carbon dioxide on average. The concentrations used in greenhouses are below this value.

Food quality and authenticity
No specific concerns.

Consistency with objectives and principles of organic production, as well as criteria and general rules laid down in Council Regulation (EC) 834/2007

The group was asked whether rebalancing up to atmospheric levels should be evaluated differently from enrichment above atmospheric levels. In the opinion of the group, CO_2 rebalancing, as well as enrichment to elevated levels, is not in contradiction to the Council regulation; for the same reasons as other resources (e.g. light, water) are also enriched above inherent levels.
The group was also asked whether carbon dioxide from different sources should be evaluated differently. The group has not concluded whether carbon dioxide from all origins should be acceptable.

Traditional use and precedents in organic production
Traditional use: Carbon dioxide enrichment is in use in organic greenhouse production.
Precedents: (1) "Fertilization" of algae with carbon dioxide in aquaculture. (2) Controlled atmosphere for storage of fruit. (3) Control of pests with carbon dioxide in storage facilities is in use for organic products. (4) Authorized for use in organic processing.

Aspects of international harmonization of organic farming standards
USA: allowed, if "non-synthetic" (depends on manufacturing process).

Further remarks
The Group's opinion is that Carbon dioxide is neither a fertilizer nor a soil conditioner and that the technique of carbon dioxide enrichment should be considered in general discussions on a set of standards for organic protected cropping.

Conclusion
The group recommends that this technique should be considered in general discussions on a set of standards for organic protected cropping. In the opinion of the group, CO_2 rebalancing, as well as enrichment to elevated levels, is not in contradiction to the Council regulation. The group concluded that certain forms of carbon dioxide enrichment techniques could be in line with organic farming principles. However, the group has not concluded whether carbon dioxide from all origins should be acceptable.

3.7 Template for dossiers concerning fertilizers and soil conditioners

The Group considered that it would be helpful to develop some interpretative guidelines to support the dossier template. The document presented in Annex 1 to this report includes in part A a questionnaire and in part B a section incorporating the criteria for assessment of consistency with the EU organic regulations.

3.8 Suggested amendments to Annex I to Commission Regulation (EC) No 889/2008

During the discussion on heavy metal limits, it was noted that for various substances listed in Annex I to Commission Regulation (EC) No 889/2008, there is a limit of "0" for Cr (VI). The group agreed that it would be more appropriate to write "not detectable" instead of "0". This refers in particular to the compositional requirements in Annex I for 'composted or fermented household waste' and for 'products and by-products of animal origin […]'

4. LIST OF ABREVIATIONS

CO_2	Carbon dioxide

5. GLOSSARY

Annex I**:**	Annex I of Regulation 889/2008.
Reg 142/2011:	Commission Regulation (EU) No 142/2011 of 25 February 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.
The Group:	The expert group for technical advice on organic production (EGTOP)

Annex 1: Template for dossiers concerning fertilizers and soil conditioners

Part A

DOSSIER CONCERNING THE REQUEST TO AMEND ANNEX I
Fertilizers, soil conditioners and nutrients referred to in Article 3(1) and Article 6d(2) of Commission Regulation (EC) No 889/2008

Articles 16.3 b and 21.2 sec. par. of Council Regulation (EC) No 834/2007.

"Where a Member State considers that a product or substance should be added to, or withdrawn from the list referred to in paragraph 1, or that the specifications of use mentioned in subparagraph (a) should be amended, the Member State shall ensure that a dossier giving the reasons for the inclusion, withdrawal or amendments is sent officially to the Commission and to the Member States."

General information on the request

Nature of the request	☐ Inclusion ☐ Deletion ☐ Change of disposition
Request introduced by	[Member State] Contact e-mail:
Date	

Please indicate if the material provided is confidential.

Requested inclusion /deletion/amendment

Name	conditions for use

1. Identification

Identification of substance, terminology, synonyms

Chemical name(s)
Other names
Trade name
CAS code (Chemical Abstracts Systematic Names)
Other code(s)

2. Characterisation

Raw materials, methods of manufacture

Composition
Relevant nutrients and trace elements content
Physical properties
Solubility
Origin of raw materials, production methods

3. Specification of use

Agronomic use

Fertiliser or soil conditioner
Application method
Dosage
Stage of plant development
Physiological effect, mode of action

4. Status

Authorization in general agriculture

Historic use
Regulatory status (EU, national, others)

5. Reasons for the inclusion, withdrawal or amendments

Explain the need for the proposed fertilizer or soil conditioner
What alternative solutions are currently authorised or possible?
Is there any traditional use or precedents in organic production?

6. Consistency with objectives and principles of organic production

Please use the checklist in part B of this Annex to indicate consistency with objectives and principles of organic production, as well as criteria and general rules, laid down in Council Regulation (EC) 834/2007 Title II and Title III as applicable.

7. Other aspects

Environmental issues relating to production and use
Animal health and welfare issues relating to production and use
Human health issues relating to production and use
Food quality and authenticity
Ethical issues relating to production and use
Socio-economic issues relating to production and use
Various aspects, further remarks

8. References

9. Annexes

Part B

CHECKLIST FOR CONSISTENCY
with objectives and principles of organic production with reference to specific articles in the organic regulations

Criteria	Specific articles in Reg. 834/2007	Fulfilled? Yes / no / not applicable	Brief qualification
enhances the health of soil, water, plants and animals	Art. 3(a)(i)		
makes responsible use of energy and the natural resources, such as water, soil, organic matter and air	Art. 3(a)(iii)		
aim at producing products of high quality	Art. 3(b)		
exclude the use of GMOs and products produced from or by GMOs	Art. 4(a)(iii); Art.9(a)		
limited to natural or naturally-derived substances	Art. 4(b)(ii)		
limited to low solubility mineral fertilizers	Art. 4(b)(iii)		
for chemically synthesized inputs: appropriate management practices do not exist	Art. 4(c)(i)		
for chemically synthesized inputs: organic, natural or naturally-derived alternative substances are not available on the market	Art. 4(c)(ii)		
for chemically synthesized inputs: use of organic, natural or naturally-derived alternative substances contributes to unacceptable environmental impacts	Art. 4(a)(iii)		
the maintenance and enhancement of soil life and natural soil fertility, soil stability and soil biodiversity …	Art. 5(a)		
… nourishing of plants primarily through the soil ecosystem	Art. 5(a)		

Criteria	Specific articles in Reg. 834/2007	Fulfilled? Yes / no / not applicable	Brief qualification
the recycling of wastes and by-products of plant and animal origin as input in plant and livestock production	Art. 5(c)		
mineral nitrogen fertilizers shall not be used	Art. 12, 1.(e)		
all plant production techniques used shall prevent or minimise any contribution to the contamination of the environment	Art. 12, 1.(f)		
the corresponding use is authorised in general agriculture […]	Art. 16, 1.		
their use is necessary for sustained production and essential for its intended use	Art. 16, 2.(a)		
all products and substances shall be of plant, animal, microbial or mineral origin …	Art. 16, 2.(b)		
… except where products or substances from such sources are not available in sufficient quantities or qualities or if alternatives are not available	Art. 16, 2.(b)		
their use is essential for obtaining or maintaining the fertility of the soil or to fulfil specific nutrition requirements of crops, or specific soil-conditioning purposes	Art. 16, 2.(d)		
products and substances used before adoption of this Regulation […] may continue to be used […]	Art. 16, 3.(c)		
	Others: please specify		