

# **Fertilisers, soil conditioners and crop management tools**

## **Basic admission criteria for the European Input List**

Version 15, May 2024

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# I. Introduction

This document describes the criteria that need to be fulfilled in order for fertilisers, soil conditioners and crop management tools<sup>1</sup> to be included in the European Input List. Additional criteria may apply for products to be included in a national list or a list of a private association. This document will be updated whenever necessary. The most recent version, which is available on the project website ([www.inputs.eu](http://www.inputs.eu)), is the only valid version.

## The European Input List – a private standard

EU organic farming is governed by a ‘framework regulation’ (Reg. (EU) 2018/848) plus an ‘implementing regulation’ (Reg. (EU) 1165/2021).

The European Input List is a private standard. It is based on the relevant EU legislation. However, it also comprises additional criteria and interpretations, which were set by FiBL, in order to ensure compliance with the objectives and principles of organic production.

## Scope of products included

The relevant Annexes of the EU organic legislation (Annex II of Reg. 2021/1165) cover only ‘fertilisers, soil conditioners and nutrients’. By contrast, the European Input List covers a broader scope of products and includes also products such as potting soils, adjuvants, biodegradable mulching materials etc.

## Safeguard clause

In addition to the requirements described below, the European Input List reserves the right to exclude all substances or products from all categories if the evaluation team considers that their use does not comply with the objectives and principles of organic production, or if it is suspected that they could have a negative impact on human health, the soil, plants or environment.

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<sup>1</sup> In this document, the term ‘crop management tool’ refers to inputs used in crop production which cannot be categorized as fertilisers, plant protection products or another legally defined category.

## 2. Requirements for different product types

### 2.1 Requirements for fertilisers and soil conditioners

#### Background

Fertilisers and soil conditioners are explicitly mentioned and regulated in the organic legislation.

#### Requirements

Fertilisers and soil conditioners may only contain

- materials listed in the relevant Annexes<sup>2</sup>,
- co-formulants (see separate section below).

### 2.2 Requirements for crop management tools

#### Background

For 'crop management tools' (products used in crop production, other than fertilisers / soil conditioners and other than plant protection products), the organic legislation gives no detailed guidance. To ensure consistency with the objectives and principles of organic production, the European Input List has developed admission criteria for the major product groups. In specific cases, these criteria may be adapted. In all cases, the raw materials may not be derived from GMOs.

#### 2.2.1 Potting soils

Potting soils may contain all materials listed in the relevant Annexes, in particular

- materials of plant origin such as compost, peat, wood fibre, coconut fibre, cocoa shells, bark,
- inert mineral components such as clay, sand, pumice, lava, perlite, vermiculite, expanded clay and soil, and
- fertilisers complying with the present admission criteria.
- synthetic wetting agents are not allowed.

#### Requirements for coconut fibre and wooden products

Coconut fibre and wooden materials (incl. bark) are only allowed, if they have not been treated with synthetic substances such as nitrogen compounds (e.g. calcium nitrate).

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<sup>2</sup> Annex II of Reg. 2021/1165

## 2.2.2 Products which influence crop growth or performance

### Background

Products claiming to influence crop growth or performance have traditionally been used in organic production and are widely used today. Their classification under national legislation varies greatly between countries. As a result, they are referred to by different names, such as 'biostimulants' and 'plant strengtheners'. To ensure consistency and harmonization between countries, the European Input List applies the same admission criteria regardless of legal classification in different countries. In line with the new fertilising products regulation (2019/1009/EC), the European Input List treats such products as a subcategory of fertilisers, as far as legally possible in the concerned countries. Therefore, the relevant Annexes apply.

### Requirements

- The main ingredient(s) must be listed in the relevant Annexes.
- Exceptionally, other natural materials may be accepted. Materials authorized in other Annexes of the organic legislation are only acceptable, if they do not have an effect as plant protection product.
- Co-formulants: see separate section below.

## 2.2.3 Adjuvants

### Background

In this document, the term 'adjuvant' summarizes products which may be used in combination with other authorised products, for example spreaders/stickers. Adjuvants have traditionally been used in combination with plant protection products. In the current organic legislation, they are not mentioned. Under the new organic legislation, they will be generally allowed, if used in combination with plant protection products. To ensure consistency with the objectives and principles of organic production, the European Input List has developed admission criteria for adjuvants.

Adjuvants may also be used in combination with fertilisers or biostimulants. To ensure consistency, the European Input List applies the same criteria as for products used in combination with plant protection products. The admission criteria for adjuvants are placed in the chapter on plant protection products.

### Requirements

For adjuvants which are used in combination with fertilisers or biostimulants, the same admission criteria apply as for adjuvants which are used in combination with plant protection products.

## 2.2.4 Wound sealings and trunc paints

### Requirements

- The main ingredient(s) must be listed in the relevant Annexes.
- Exceptionally, other natural materials may be accepted. Materials from other Annexes of the organic legislation are only acceptable, if they do not have an effect as plant protection product.
- Co-formulants: see separate section below.

## 2.2.5 Additives for biogas digestion

### Background

Biogas digestate is listed in the relevant Annexes. However, there is no specification regarding the use of additives in digestion plants. The use of additives which stabilize the process or enhance the output of biogas is desirable from the point of view of resource efficiency.

### Requirements for additives for biogas digestion

- Calcium, magnesium, iron and boron salts and boric acid are allowed.
- Aluminium salts are not allowed.
- Nickel salts may be used as additives to support the production of methane. However, they must be dosed in such a way that the content of nickel in the final digestate does not exceed 25 mg/kg dry matter.
- Selenium salts may be used as additives to promote methane producing bacteria.
- Zinc salts may be used as additives. However, they must be dosed in such a way that the content of zinc in the final digestate does not exceed 200 mg/kg dry matter.
- For pH control, calcium hydroxide, sulphuric and citric acid are allowed. Other pH control agents will be evaluated case by case.
- Other biogas digestion additives will be evaluated case by case.

## 2.2.6 Manure additives

### Background

When sulphur is added to liquid manure, hydrogen sulphide is formed. This can present a serious hazard to humans and livestock, particularly when operators are insufficiently

trained. For this reason, the addition of fertilisers containing elemental sulphur to liquid manure is prohibited, e.g. in Austria.<sup>3</sup>

## Requirements

- Sulphur products which are intended as additives for liquid manure (as indicated by instructions for use, e.g. on labels or technical datasheets) will not be included in the European Input List.

### 2.2.7 Biodegradable products (mulching sheets)

#### Background

Mulching sheets are regularly used in practice, especially in vegetable production. They serve a number of purposes such as weed suppression, water conservation, regulation of soil temperature and keeping the harvest clean. Depending on the crop and situation, it may be preferable to use non-biodegradable or biodegradable mulching sheets. Since biodegradable mulching sheets are not mentioned in the relevant Annexes, the European Input List has developed its own admission criteria based on the objectives and principles of organic production. Although these criteria were developed for mulching sheets, they may be applied also to other types of biodegradable products, e.g. biodegradable pots.

In the opinion of the European Input List team, such products should ideally be made entirely from bio-based materials. However, we recognize that to date this is not yet technically feasible.

#### Requirements for mulching sheets

- The raw materials may not be GMOs.
- Biodegradability and compliance with limit values for contaminants must be demonstrated with certificates based on a suitable test method (e.g. EN 17033; other certificates will be evaluated case by case). Results may be submitted either for the final product, or for all components. If no certificate is available, the evaluation team may carry out an evaluation of the product.
- Bleaching of paper is generally not desirable. In cases of clearly demonstrated need, however, the evaluation teams may exceptionally accept bleached materials, if they are bleached without chlorine.
- Colouring may be accepted, if there is an agronomic need. Colorants will be evaluated case-by-case.

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<sup>3</sup> Ordinance of the Federal Minister of Agriculture, Forestry, Environment and Water Management enacting provisions for the implementation of the Fertiliser Act 1994 (Fertiliser Ordinance 2004), Austria.



### **Requirements for other biodegradable products (e.g. pots)**

At present, the European Input List has no fixed set of criteria for other biodegradable products. For the time being, the evaluation is carried out on a case by case basis, taking into account the requirements for mulching sheets.

- For biodegradable pots, peat is not allowed as a raw material.

### **2.2.8 Seed treatments**

#### **Background**

Seed treatments serve a wide array of functions. On one hand, they may serve as fertilisers or as plant protection products. In this case, the EU organic legislation applies and the European Input List applies the criteria for fertilisers or those for plant protection products (including basic substances, e.g. vinegar). For compulsory treatments required by EU phytosanitary legislation, the acceptability is evaluated case by case.

On the other hand, seed treatments serve a range of technological functions. Such applications are not covered by the EU organic legislation, but are also in the scope of the European Input List. In this document, the term 'auxiliaries' refers to products which are applied to seeds during seed treatment, but which are later removed from the seeds and leave no residues. The need for co-formulants and auxiliaries in seed treatments is recognised.

#### **Requirements for seed treatments with a fertilizing or a plant protect effect and for micro-organisms**

- Components with an effect as fertilisers must comply with the criteria for fertilisers.
- Components with an effect as pesticides must comply with the criteria for plant protection products.
- Micro-organisms such as rhizobia and mycorrhiza are allowed, provided that they are not GMOs.

#### **Requirements for products and components with a technological function, auxiliaries for seed treatment and for co-formulants**

- Preferably, co-formulants and auxiliaries in seed treatments should be listed in the relevant Annexes.
- Other natural materials are also acceptable.
- Synthetic components may be accepted under the following conditions:
  - (i) the applicant can demonstrate that they are necessary to achieve the desired function, and that they are used in the lowest possible amounts.
  - (ii) They comply with the principles for co-formulants (see separate section).

### **Requirements for auxiliaries used in seed priming**

- Soluble nitrogen used as signalling compounds during the priming process are allowed.
- Synthetic substances acting as plant hormones are not allowed (with the exception of ethylene).

## **3. Requirements concerning individual components**

The relevant Annexes contain a list of ‘fertilisers, soil conditioners and nutrients’ which are allowed for use in organic farming. This chapter describes the interpretation by the European input List. These requirements are applied to each component of a product. Requirements are described separately for different materials.

### **3.1 Products and by-products of animal origin**

#### **3.1.1 Animal excrements**

##### **Background**

The relevant Annexes allow various types of manure with the limitation ‘factory farming origin forbidden’. However, there is no official definition of ‘factory farming’ and no general agreement across Europe how to implement this requirement. The European Input List considers that this requirement needs to be considered in a context of regional traditions and farming practises.

##### **Requirements**

For the moment, the European Input List relies on national interpretations and policies. As a rule, the policy for the country of production is applied.

#### **3.1.2 By-products of animal origin**

##### **Background**

The relevant Annexes contain a list of animal by-products which are allowed.

##### **Requirements**

- Animal by-products listed in the relevant Annexes may undergo physical processing. Other forms of processing will be evaluated case by case.
- As specified by general legislation, the hygienic requirements relating to diseases such as BSE must be respected. Products must meet the requirements of EU Reg. 1069/2009 and EU Reg. 142/2011.

### 3.1.3 Nitrogen fertilisers produced by air scrubbers

#### Background

Various organic materials such as manure or sewage sludge emit ammonia. The ammonia can be captured with air scrubbers and transformed into highly soluble nitrogen fertilisers (also called nitrogen stripping). The EGTOP has recommended not to authorize such materials for organic production<sup>4</sup>.

#### Requirements

- Highly soluble nitrogen fertilisers produced by air scrubbing / nitrogen stripping are not accepted by the European Input List.

### 3.1.4 Guano

#### Background

'Guano' in the true sense of the word is accumulated excrement of seabirds, seals, or cave-dwelling bats. This material is allowed. However, non-permitted materials such as Chilean nitrate are sometimes also traded under the denomination 'guano'. While guano is still allowed for the European Input List, some private label organizations exclude guano because of the long transport distances to Europe and/or reluctance towards the partly invasive harvesting methods applied.

#### Requirements

- To avoid misinterpretations and erroneous authorization, components declared as 'guano' will be subject to more in-depth investigations regarding their true nature.
- Where adequate, the evaluation teams may request proof that a given guano product is free from human pathogens (analytical report and/or veterinary certificate, as specified in EU Reg. 142/2011).

## 3.2 Products and by-products of plant origin

#### Background

The relevant Annexes allow 'products and by-products of plant origin for fertilisers', and gives the following examples: 'oilseed cake meal, cocoa husks, malt culms'. The use of such materials for fertilization purposes is clearly desirable, since the raw materials have little other uses, and since they undergo only minor processing steps. However, there are also fertilisers on the market that are made from food materials (e.g. soy meal) as well as products which undergo a complex series of processing steps. The team of the European Input List has some doubts whether the use of such materials is desirable from

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<sup>4</sup> EGTOP (Expert Group for technical Advice on Organic Production): Report on Fertilisers (III), chapter 3.5.1.

the perspective of organic farming principles and from a sustainability point of view. Considering the current legal background, such products are provisionally allowed for the moment.

Recently, fertiliser products with a high percentage of easily soluble nitrogen have been developed. This is in contradiction with the overall principles of organic production, which limit mineral fertilisers to products with low solubility (Reg. 2018/848, Art. 5(g)(iii)). The European Input List team considers that nitrogen mineralization must primarily take place in the soil, and not during the manufacture of fertilisers. In order to ensure consistency with this principle, the European Input List limits the proportion of easily soluble nitrogen to maximum 15 % of the total nitrogen content.

### Requirements

- In the end product, not more than 15 % of the total nitrogen may be present in easily soluble form (i.e. the sum of nitrate, ammonia and urea must be  $\leq 15$  % of the total nitrogen). For biogas digestates, this rule is currently not applied. Recycling products such as potato juice/fruit water may be admitted on a case by case base, provided that the share of easily soluble nitrogen is below 30 %.
- Hydrolysed proteins from plant material are allowed.
- Yeast extracts (from non-GM yeast) are allowed as fertilisers.
- Products and by-products of GM plants are not allowed.
- Aqueous and ethanolic extracts are generally allowed, while extracts with synthetic solvents are not allowed (exception for seaweed products: see section 'materials of aquatic origin' below). Extraction with ammonia is not permitted.
- By-products of plant materials derived by physical processing are allowed. The material may not be contaminated with non-authorized substances (e.g. chemical solvents) during the process. In such cases, the applicant must explain the production process including all substances used in sufficient detail, and he must demonstrate the absence of contaminants with chemical analyses. If the absence of contaminations cannot be established beyond doubt, the evaluation team may reject the product.

### 3.2.1 Fermentation products

#### Background

Products and by-products of plant origin can be transformed into fertilisers through a range of microbial fermentation technologies. Fermented products such as vinasse have traditionally been allowed for organic production. They are not explicitly mentioned in the relevant Annexes, but the European Input List team considers that they are covered by the entry 'Products and by-products of plant origin'. The evaluation must make sure

that the nitrogen content of fermentation products originates from the plant materials and not from synthetic nitrogen added during fermentation.

### **Requirements**

- The micro-organisms used for fermentation must not be GMOs.
- Materials with a nitrogen content >5 % are only allowed, if the manufacturer can clearly demonstrate that the nitrogen originates predominantly from the plant materials used as raw materials for fermentation. Detailed information on the nitrogen content of all intermediate steps in the production process is required.
- In all cases, the manufacturer must declare whether any nitrogen compounds are added as 'starters' for fermentation, and in what amounts.

### **3.2.2 Compost, digestate**

The relevant Annexes contain contains some specifications on raw materials and heavy metal content of the end product, but not on foreign matter (plastic, metal, glass etc. particles). Some countries as well as the new EU fertilising products regulation (2019/1009/EC) set limits for foreign matter in their fertiliser legislation. It is primarily the responsibility of the applicant companies to ensure that their products comply with these limits. However, the national teams may request analyses to verify whether these requirements are fulfilled.

- Digestates are only acceptable if the digestion additives are acceptable (see separate section).

### **3.2.3 Potassium fertilisers from sugar production**

#### **Background**

Potassium sulphate is produced in the manufacture of sugar. The potassium and sulfur both originate from the plant biomass. This material is therefore allowed.

#### **Requirement**

- Potassium from vinasse (called 'vinasse potassium' or 'vinasse kali') is allowed.

### **3.2.4 Products made from peat**

#### **Background**

The use of peat should be minimized. A certain use of peat is necessary in horticulture. Therefore, the European Input List allows peat in potting soils, and as a co-formulant (carrier material). By contrast, the use of peat products for other purposes is not essential and therefore not allowed.

## Requirement

- Products made from peat (e.g. peat extracts) are not allowed.

### 3.2.5 Other single nutrients isolated from plant materials

#### Background

Potassium sulphate is also produced in the manufacture of biofuels ('biodiesel'). This process involves an ester interchange with potassium hydroxide and a precipitation with sulphuric acid. The European Input List considers this as chemical processes.

Phosphates can be recovered from plant biomass with chemical processes that resemble the manufacture of superphosphate. The European Input List team considers this as a chemical process.

Single nutrients (e.g. phosphorus, potassium) in pure form can be obtained from plant materials with ion exchange technology. In line with the Expert Group for Technical Advice on Organic Production <sup>5</sup>, the European Input List considers that such purifications are not in line with the objectives and principles of organic production.

#### Requirements

- Potassium sulphate from the manufacture of biofuels is not allowed.
- Phosphates recovered from plant biomass are not allowed.
- Single nutrients produced with ion exchange technology are not allowed.

## 3.3 Micro-organisms

#### Background

Micro-organisms have traditionally been used in organic farming, and there is no objection to their use. Micro-organisms are mentioned in the organic legislation.

#### Requirements concerning micro-organisms

- The micro-organisms must not be GMOs. A declaration of absence of GMOs is required for each microbial strain.
- The identity (species and strain) of the microorganism must be given.
- Strains which are known to have a pesticidal function are not allowed in fertilisers (see EU pesticides database).

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<sup>5</sup> See EGTOP report on Food VI and Feed IV; EGTOP report on Food III; EGTOP Report on Food I.

- Upon request, the applicant must document that in normal use, they are harmless for humans, environment, crops and animals.

### **Requirements concerning growing media for micro-organisms**

- The manufacturer must specify all ingredients which are used for the growing media (if possible, use standard chemical nomenclature).
- The manufacturer must declare whether remains of the growing media used to grow the micro-organisms, or microbial products (e.g. antibiotics) can be found in the final product, and approximately how much. If remains of the growing media are present in significant amounts, their acceptability is determined case by case. The acceptability of microbial products is determined case by case; the presence of antibiotics in the final product is not allowed.
- For the growing media for micro-organisms, there are no requirements regarding the GM status. However, if remains of the growing media can be found in the final product, no DNA of GMOs must be detectable. The evaluation teams may request analytical or other evidence to verify this point.
- If the growing media for the micro-organisms contain synthetic nitrogen compounds, these must not be added in excess. In case the final product resulting from the fermentation process contains more than 5 % N<sub>mineral</sub>, the manufacturer is obliged to demonstrate that synthetic nitrogen compounds have not been added in excess (detailed description of the production process). If this cannot be demonstrated, such products will be rejected.

## **3.4 Inorganic plant nutrients**

Annex II of Reg. 2021/1165 contains a list of materials which may be used as sources of phosphorus, potassium, calcium, magnesium and sulphur.

### **3.4.1 Liming materials**

Magnesium and calcium carbonate of natural origin are allowed. This includes also mollusc and egg shells. These raw materials may not be processed with acids or other synthetic substances. Persistent flocculants are not allowed (e.g. polyacrylamide).

Some national teams allow calcified sea weed ('maërl', 'lithothamnium') only, if it originates solely from dead formations either from the sea or from geological formations on land.

### **3.4.2 Kieserite (magnesium sulphate)**

The production process must be documented with a flow chart. All heat treatments (including calcination) must be declared.

### 3.4.3 Inorganic nitrogen

Mineral nitrogen fertilisers are *not permitted* according to the principles of organic production<sup>6</sup>. This includes synthetic compounds such as ammonia, nitrate and urea, but also natural sources such as 'Chilean nitrate' (also known as 'Chile salpeter', 'Peru salpeter', 'Caliche').

### 3.4.4 Stone meal, clay, clay minerals

Stone meal, clay and clay minerals are acceptable. For specific materials known to be on the market also in synthetic form (e.g. apatite), applicants have to confirm that the materials are of natural origin. In particular, they may undergo mining and milling. Processing/extraction with acids or other chemical substances is not allowed. Processes that change the chemical composition are excluded (e.g. conversion of calcium carbonate to calcium hydroxide).

Split from crushed bricks may be used as a component of substrates. However, the raw material is limited to unused, untreated bricks (exception: addition of minerals and metal oxides for colouring purposes may be permitted on a case-by-case base).

### 3.4.5 Selenium salts

Selenium salts are meanwhile allowed (see amended version of Reg. 2021/1165). They may only be used in case of deficiency in the soils used for animal rearing, and/or grazing or for the production of feed crops.

## 3.5 Inorganic micronutrients

With respect to inorganic micronutrient fertilisers, the EU organic legislation refers to the EU fertilizer legislation. Therefore, the general interpretation in the European organic sector is that all inorganic micronutrient fertilisers containing any of the authorized inorganic micronutrients, with or without chelating agents (e.g. EDTA, HEEDTA, DTPA, EDDHMA, HBED, IDHA or EDDS) or complexing agents is allowed for organic farming, provided that the specified limits for contaminants (Reg. (EU) 2019/1009) are complied with. In addition, natural materials which have a complexing effect for trace elements (e.g. hydrolised proteins, humates, citric acid) are also allowed. In the European Input List, this is implemented as follows:

- All inorganic micronutrients listed in the EU fertilizer legislation<sup>7</sup> are allowed.
- Consistent with the principles of organic production, mineral nitrogen salts (e.g. nitrate, ammonia) of micronutrients are not allowed.

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<sup>6</sup> see Article 4(b)(iii) and Art. 12(1)(e) of Reg. 834/2007, and Art. 5(g)(iii) of Reg. 2018/848

<sup>7</sup> Reg. 2019/1009.



- In the case of inorganic micronutrients obtained by recycling processes (e.g. from used batteries), the evaluation teams will request additional information on the recycling process, and/or may request analyses of contaminants.
- Natural materials may also be used as complexing agents (e.g. hydrolysed proteins, humates, citric acid).
- Lignosulfonic and heptagluconic acid as well as their salts (e.g. sodium or potassium, but not ammonium salt), are allowed.

### 3.5.1 Copper

Copper is a trace element listed in the EU fertilizer legislation and is therefore authorized for use in organic farming. The European Input List has no specific rules applying to copper. Because the use of copper is discussed controversially, some national Input Lists restrict its use.

## 3.6 Materials of aquatic origin

### Background

For various materials of marine origin, the EU organic legislation restricts their origins to organic production or sustainable sources.

### Requirements

- For algae, algae products, mollusc waste and chitin (polysaccharide obtained from the shell of crustaceans) a declaration on origin is required. Please use the dedicated form provided by the European Input List. For comparable products, the European input list reserves the right to apply similar requirements.
- Seaweed products may be obtained by extraction with acids or alkaline aqueous solutions. Clarification: Acids/alkalines which increase the concentration of nutrients in the final product are restricted or prohibited. This means that nitric and phosphoric acids are not allowed, because they act as easily soluble mineral fertilisers. Extraction with potassium compounds (e.g. potassium hydroxide, KOH) is allowed, but the evaluation team may reject products which contain excessive amounts of potassium deriving from the extraction agents. In particular, such products may not be marketed as potassium fertilisers. Manufacturers may be asked to provide the necessary data for this point to be verified.

## 3.7 Other materials

Several other materials are also authorized according to the relevant Annexes. The following sections provide guidance for selected materials.

### 3.7.1 Sodium chloride (salt)

#### Requirements

- Rock salt and sea salt are allowed.
- Sodium chloride obtained by chemical synthesis is not allowed.

### 3.7.2 Humic and fulvic acids

#### Background

Humic and fulvic acids are mentioned in the relevant Annexes. The EGTOP has recommended authorizing humic and fulvic acids for organic production, with certain restrictions<sup>8</sup>.

Humic and fulvic acids are often manufactured by treatment with potassium hydroxide. Because this is a synthetic form of potassium, the levels should be kept low.

#### Requirements

- Humic and fulvic acids obtained from leonardite are allowed.
- Humic and fulvic acids obtained from the purification of drinking water are allowed, while humic and fulvic acids obtained from the purification of *waste* water are *not allowed*.
- Humic and fulvic acids obtained from natural substances mentioned in the relevant Annexes of the organic regulation with thermal or physical processes are also permitted.
- Extraction with potassium compounds (e.g. potassium hydroxide, KOH; potassium chloride, KCl) is allowed. However, the evaluation team may reject products which contain excessive amounts of potassium deriving from the extraction agents. In particular, such products may not be marketed as potassium fertilisers. Manufacturers may be asked to provide the necessary data for this point to be verified.
- Extraction agents with nitrogen compounds (e.g. ammonia, nitrate, urea) are not allowed.

### 3.7.3 Biochar

#### Background

Biochar is mentioned in the relevant Annexes, with restrictions on raw materials used for manufacture and on contaminants present in the final product.

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<sup>8</sup> EGTOP Report on Fertilisers (III), chapter 3.3.

## Requirements

- Raw materials are limited to
  - plant materials which have not been treated post-harvest, i.e. wood which has not been treated post harvest;
  - plant materials which have not been treated with pesticides (e.g. Miscanthus);
  - plant products and by-products from organic production.
- Applicants must submit an analysis of PAHs in the final product. The analysis may not be older than 12 months at the time of submission. The level of PAHs may not exceed 4 mg/kg dry matter. The analysis must be done according to the methods specified by the European Biochar Certificate (extraction with toluene).

### 3.7.4 Materials which may have a use in filtering beds

#### Background

Materials such as sand, zeolite, perlite, vermiculite and clinoptilolith may be used in filtering beds, which can result in their contamination. Companies should be aware that different legal requirements may apply to unused ('virgin') materials and to used materials ('wastes').

#### Declaration policy

Whenever a material has been previously used as filtering material, this fact must be clearly stated by the applicant during application. If there is no mentioning of such an earlier use, the evaluation team will assume that the declared materials are virgin materials previously unused.

### 3.7.5 Synthetic nanoparticles / picoparticles

#### Background

The new organic legislation excludes food containing, or consisting of, engineered nanomaterials<sup>9</sup>, but makes no such requirement for inputs. Consistent with the policy of EGTOP<sup>10</sup>, the European Input List considers that nanoparticles are not implicitly authorized, but would require a separate listing in order to be authorized. For picoparticles, the same argument applies.

#### Requirements

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<sup>9</sup> Reg. 2018/848, Art. 7(e)

<sup>10</sup> see EGTOP Report on Fertilisers (II), chapter 4.8.2.

- Synthetic nano- and picoparticles are not allowed at the moment.
- The size limit below which a particle is considered as a nanoparticle follows the definition of the European Commission<sup>11</sup> (i.e. 50 % or more of the particles are in the range between 1 nm and 100 nm).
- Agglomerates of nanoparticles will be evaluated case by case.

### **3.7.6 Silica**

Pyrogenic silica and other synthetic forms of silicium are not allowed.

### **3.7.7 Phosphonate / phosphonic acid**

Manufacturers must take great care to avoid the content of phosphonate / phosphonic acid (also in traces) in their products. The evaluation teams may request analyses to verify this point.

## **3.8 Components from organic production**

If a company claims that a component is organic or that it derives from organic production, a valid certificate from an accredited certifier must be submitted with the application and has to be renewed before expiry.

## **3.9 Co-formulants / additives**

### **Background**

In this document, materials other than nutrients and soil conditioners are referred to as 'co-formulants'. Examples include emulsifiers, carriers, antifoaming agents, dyes and preservatives. Such components are also known as 'additives' in the fertiliser industry. Co-formulants are not regulated by the EU organic legislation (Annex II to Reg. 2021/1165). To ensure compliance with the objectives and principles of organic production, FiBL has certain requirements for co-formulants, which take into account effects on human health and/or the environment as well as the risk of causing residues.

The European Input List does not want to restrict the use of co-formulants to certain substances, as this would limit the potential for innovations in this field. Instead, it applies a flexible scheme based on the following principles:

- Materials listed in the relevant Annexes are allowed.
- If the materials listed in these Annexes are not sufficient to achieve these effects, other materials may be used, provided that the applicant can demonstrate their need and that they are not harmful to the user or the environment.

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<sup>11</sup> [https://ec.europa.eu/environment/chemicals/nanotech/faq/definition\\_en.htm](https://ec.europa.eu/environment/chemicals/nanotech/faq/definition_en.htm)

- Natural substances should be used in preference.

### Requirements

- Where a synthetic co-formulant is used, the applicant must demonstrate that the desired effect cannot be achieved with a natural substance.
- If synthetic co-formulants are necessary, the lowest possible amounts must be added.
- Co-formulants must not be harmful to the user or the environment and should be easily biodegradable (for example, silver-based compounds are not allowed). They should not cause residues in crops. Endocrine disruptors (including potential endocrine disruptors) are not accepted. This applies to all alkylphenols and their ethoxylates, including nonylphenol and dodecylphenol. FiBL reserves the right to request additional information, particularly on environmental fate and on residues in soil and/or crops. If the applicant fails to prove the need to use a co-formulant, or if he fails to demonstrate that the co-formulant does not cause residues in crops and has no unacceptable effects on human health and the environment, the product will be rejected.
- Manufacturers are free to choose those co-formulants which they consider to be most appropriate. The EPA's old list 4, and the 'Safer Choice' database may be consulted for orientation purposes.
- Co-formulants must not act as plant nutrients (e.g. ammonium compounds, ammonium lignosulfonate) and must not have a plant protection effect (e.g. preservatives).
- Quaternary ammonia compounds (QAC) may not be added.

## 4. Compliance with general legislation

The European Input List includes only products that comply with the relevant EU and national legislation. In the context of fertilisers, soil conditioners and crop management tools, the following aspects are particularly relevant:

- In countries/product types which must be registered, this is a requirement for admission into the input lists.
- Products with an effect on pests or diseases or with a biocidal effect must be registered in compliance with the relevant legislation.
- For products which are not registered as plant protection products, no claims of a plant protection effect may be made.

Because such products are regulated / registered at a national level, compliance with general legislation is checked during evaluation for inclusion of products into the national lists associated with the European Input List. Compliance with general legislation is primarily in the responsibility of the applicant companies. However, if national

evaluation teams suspect that a product does not comply with the relevant legislation, they may postpone inclusion into the list until the applicant has demonstrated legal compliance.

## **5. Recommendations for use**

It is the responsibility of the applicant companies to ensure that the recommendations for use of their products given on product labels, technical sheets, publications and websites are consistent with organic farming practices. If the national evaluation teams suspect that a product is intended for a use that does not comply with organic farming practices, they may postpone inclusion into the list or remove the product from the list until the applicant has amended the recommendations for use accordingly.