



# JRC TECHNICAL REPORTS

## EU Ecolabel criteria for growing media, soil improvers and mulch.

Update on the criteria revision

*Document prepared for the EU  
Ecolabelling Board (EUEB)*

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## Introduction

This document aims at informing the EU Ecolabelling Board (EUEB) about the state of the revision of EU Ecolabel criteria for growing media, soil improvers and mulch (Commission Decision (EU) 2015/2099). The revision is adapted to the shortened procedure in line with Art 7 (4) of the EU Ecolabel Regulation (EC) No 66/2010 and specified in Part C of Annex I to EU Ecolabel Regulation.

The document addresses several aspects of the criteria revision that have been analysed so far, and its unique objective is to inform and consult the EUEB about the on-going work. Additional **questions** settled down to contribute to the discussion with the EUEB during the upcoming meeting in April 2021 are marked **in red**.

## Background information

*Scope of the product group:* The Commission Decision (EU) 2015/2099 that establishes the EU Ecolabel criteria for *growing media, organic soil improvers and organic mulch* defines the scope of the product group.

*EU Ecolabel criteria history:* Original criteria were developed and adopted in the early 2000s under Commission Decision 2001/688/EC establishing ecological criteria for the award of the Community eco-label to soil improvers and growing media. The original criteria were revised and the product group was split into soil improvers product group and growing media product group. Consequently, the separated sets of criteria for the two were adopted as Commission Decision 2006/799/EC establishing EU Ecolabel criteria for soil improvers, and Commission Decision 2007/64/EC establishing EU Ecolabel criteria for growing media.

The currently valid criteria as laid down in the [Commission Decision \(EU\) 2015/2099](#) again merged both product groups, distinguishing between technical characteristics of products addressed by the scope, where necessary. Last but not least, the former revision broadened the scope to the product mulch, as it was identified as a potentially differentiated product. 'Mulch' means a type of soil improver used as protective covering placed around plants on the topsoil whose specific functions are to prevent the loss of moisture, control weed growth, and reduce soil erosion.

**Table 1. Applicability of the different criteria to each type of product covered by the scope**

Criterion	Growing media	Soil improvers	Mulch
Criterion 1 - Constituents	x	x	x
Criterion 2 - Organic constituents	x	x	x
Criterion 3.1 - Mineral growing media and mineral constituents: Energy consumption and CO <sub>2</sub> emissions	x		
Criterion 3.2 - Mineral growing media and mineral constituents: Sources of mineral extraction	x	x	x
Criterion 3.3 - Mineral growing media and mineral constituents: Mineral growing media use and after use	x		
Criterion 4 - Recycled/recovered materials and renewable materials in growing media	x		
Criterion 5 - Limitation of hazardous substances			
Criterion 5.1 - Heavy metals	x	x	x
Criterion 5.2 - Persistent Organic Pollutants	x	x	x
Criterion 5.3 - Hazardous substances and mixtures	x	x	x
Criterion 5.4 - Substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006	x	x	x
Criterion 5.5 - Pathogens	x	x	x
Criterion 6 - Stability	x	x	x
Criterion 7 - Physical contaminants	x	x	x
Criterion 8 - Organic matter and dry matter		x	x
Criterion 9 - Viable weed seeds and plant propagules	x	x	
Criterion 10 - Plant response	x	x	
Criterion 11 - Growing media features	x		
Criterion 12 - Provision of information	x	x	x
Criterion 13 - Information appearing on the EU Ecolabel	x	x	x

## 1. Fertilising Product Regulation (FPR)

As announced in the circular economy action plan, in March 2016 the Commission put forward a legislative proposal on fertilising products. The new [Regulation \(EU\) 2019/1009 of the European Parliament and of the Council of 5 June 2019 lays down rules on the making available on the market of EU fertilising products](#). One of the objectives of FPR is to incentivise the circularity (closure of the loop) of the nutrients, transforming waste into nutrients for crops, while reducing dependence on imported nutrients and the use of non-renewable resources.

The Regulation introduces harmonised requirements for the CE marked fertilising product by modernising the conformity assessment and market surveillance in line with the 'new legislative framework' for product legislation. The conditions for making fertilisers available on the internal market have been partially harmonised through Regulation (EC) No 2003/2003 of the European Parliament and of the Council, which almost exclusively covers fertilisers from mined or chemically produced, inorganic materials. The updated EU rules on fertilising products will apply from 16 July 2022.

For each of the fertilising products (and their subcategories) as well as for each of the component materials, the FPR introduces specific harmonised requirements regarding quality (i.e. organic matter content), safety (i.e. maximum limits for heavy metals), and labelling (i.e. on nutrient content). The fundamental elements of the new rules are:

- Opening the Single Market for bio-waste based fertilisers.
- Unified rules on safety, quality and labelling requirements for all fertilisers to be traded freely across the EU market. Producers that wish to enter the single market will need to demonstrate that their products meet those requirements before affixing the CE mark.
- Categorisation of EU fertilising products into different product function categories (PFC) according to Annex I to FPR, which should each be subject to specific safety and quality requirements adapted to their different intended uses.
- Categorisation of component materials for EU fertilising products (component materials categories (CMC)), according to Annex II to FPR, which should each be subject to specific process requirements and control mechanisms.
- Introducing new limit values for contaminants in fertilisers.

## 2. Scope and definitions

### Current Scope and Definitions

Article 1.

The product group 'growing media, soil improvers and mulch' shall comprise growing media, organic soil improvers and organic mulch.

Article 2

For the purpose of this Decision, the following definitions shall apply:

- (1) 'Growing medium' means a material used as a substrate for root development, in which plants are grown;
- (2) 'Mineral growing medium' means a growing medium totally composed by mineral constituents;
- (3) 'Soil improver' means a material added to soil in situ whose main function is to maintain or improve its physical and/or chemical and/or biological properties, with the exception of liming materials;
- (4) 'Organic soil improver' means a soil improver containing carbonaceous materials whose main function is to increase soil organic matter content;
- (5) 'Mulch' means a type of soil improver used as protective covering placed around plants on the topsoil whose specific functions are to prevent the loss of moisture, control weed growth, and reduce soil erosion;
- (6) 'Organic mulch' means mulch containing carbonaceous materials derived from biomass;
- (7) 'Constituent' means any input material that can be used as an ingredient of the product;
- (8) 'Organic constituent' means a constituent composed by carbonaceous materials;
- (9) 'Product family' means the range of products composed by the same constituents;
- (10) 'Annual output' means annual production of a product family;
- (11) 'Annual input' means the annual amount of materials treated in a waste or animal by-product treatment plant;
- (12) 'Batch' means quantity of goods manufactured by the same process under the same conditions and labelled in the same manner and is assumed to have the same characteristics;
- (13) 'Bio-waste' means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants;
- (14) 'Biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.

Preserving of the current scope of the product group was supported by the vast majority of stakeholders (75%)<sup>1</sup> that agreed on the validity of the current scope and definition. Nevertheless, stakeholders indicated the need to update the definitions in line with the Fertilising Products Regulation (FPR)<sup>2</sup> (EC, 2019). Indeed, the EU Ecolabel revision needs to ensure consistency among different European product policies.

Regulation (EU) 2019/1009 (FPR) under Product Function Categories (PFCs) (Annex I to FPR) of EU fertilising products accommodates a broad range of products. EU fertilising products belong to corresponding function category (PFC) by virtue of its claimed function (mode of action). The FPR has so far established seven functional categories that include sub-categories. The claim that a product complies with the function for the relevant PFC needs to be supported by the product's mode of action, the relative content of its various components, or any other relevant parameter, as indicated in Table below. **The scope of EU Ecolabel chiefly corresponds to PFC 3 and PFC 4.** The alignment with FPR needs to respect the limits of the current scope of EU Ecolabel criteria.

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<sup>1</sup> Based on the results of stakeholders survey that served for the assessment of criteria validity. (Note: for more details about the results of the assessment of criteria validity please see Appendix I)

<sup>2</sup> EC, 2019. Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003. OJ L 170, 25.6.2019, p. 1–114

The currently valid definitions of Soil improver and growing medium closely match the definitions used by CEN/TC 223 *Soil improvers and Growing media*<sup>3</sup>.

The former revision classified mulches as a separated product category. This was largely based on the product function (to prevent the loss of moisture, control weed growth, and reduce the erosion and the evaporation), and application (as a layer on top of the soil.). However, FPR and CEN/TC 223 understand mulches as sub-category of soil improvers; therefore no comprehensive standardized definition can be provided. Constituents of mulches are typically the organic ingredients of soil improvers and growing media (peat, compost, bark, shredded wood, leaves, hay, straw), but some gardening applications use mineral constituents as stones and gravel. On the other hand, according to Art. 50 of FPR: “By 16 July 2024, the Commission shall carry out a review in order to assess the possibility of determining biodegradability criteria of mulch films, and the possibility of incorporating them into component material category 9 in Part II of Annex II” (EC, 2019). Mulching films used in agriculture and horticulture are made of plastics, textiles and other fibers, so they fall out of the scope of EU Ecolabel for growing media soil improvers and mulch product group. There are several licenses for mulch products, however establishing a separated component material category for mulch films under FPR might cause certain confusion as to the terminology used to define the scope of the EU Ecolabel product group (*mulch vs mulch film*).

Table 2. Product function categories (PFCs) of EU fertilising products based on FPR (Source: EC, 2019)

DESIGNATION OF PFCs / Fertilising Product Function
PFC 1. Fertiliser / A fertiliser shall be an EU fertilising product the function of which is to provide nutrients to plants or mushrooms.
PFC 1(A). Organic fertiliser <i>PFC 1(A)(I). Solid organic fertiliser</i> <i>PFC 1(A)(II). Liquid organic fertiliser</i>
PFC 1(B). Organo-mineral fertiliser <i>PFC 1(B)(I). Solid organo-mineral fertiliser</i> <i>PFC 1(B)(II). Liquid organo-mineral fertiliser</i>
PFC 1(C). Inorganic fertiliser <i>PFC 1(C)(I). Inorganic macronutrient fertiliser</i> <u>PFC 1(C)(I)(a) Solid inorganic macronutrient fertiliser</u> PFC 1(C)(I)(a)(i) Straight solid inorganic macronutrient fertiliser PFC 1(C)(I)(a)(ii) Compound solid inorganic macronutrient fertiliser PFC 1(C)(I)(a)(i-ii)(A) Straight or compound solid inorganic macronutrient ammonium nitrate fertiliser of high nitrogen content <u>PFC 1(C)(I)(b) Liquid inorganic macronutrient fertiliser</u> PFC 1(C)(I)(b)(i) Straight liquid inorganic macronutrient fertiliser PFC 1(C)(I)(b)(ii) Compound liquid inorganic macronutrient fertiliser <i>PFC 1(C)(II) Inorganic micronutrient fertiliser</i> <u>PFC 1(C)(II)(a) Straight inorganic micronutrient fertiliser</u> <u>PFC 1(C)(II)(b) Compound inorganic micronutrient fertiliser</u>
PFC 2. Liming material / A liming material shall be an EU fertilising product the function of which is to correct soil acidity. A liming material shall contain oxides, hydroxides, carbonates or silicates of the nutrients calcium (Ca) or magnesium (Mg).
PFC 3. Soil improver / A soil improver shall be an EU fertilising product the function of which is to maintain, improve or protect the physical or chemical properties, the structure or the biological activity of the soil to which it is added. An organic soil improver may contain peat, leonardite and lignite, but no other material which is fossilized or embedded in geological formations. An inorganic soil improver shall be a soil improver other than an organic soil improver. An organic soil improver shall consist of material 95 % of which is of solely biological origin. PFC 3(A). Organic soil improver PFC 3(B). Inorganic soil improver
PFC 4. Growing medium / A growing medium shall be an EU fertilising product other than soil in situ, the function of which is for plants or mushrooms to grow in. For the purpose of this point, plants include algae.

<sup>3</sup> [https://standards.cen.eu/dyn/www/f?p=204:7:0:::FSP\\_ORG\\_ID:6204&cs=18B71D00DB51E66B8EAD1876B4E2CE3BA](https://standards.cen.eu/dyn/www/f?p=204:7:0:::FSP_ORG_ID:6204&cs=18B71D00DB51E66B8EAD1876B4E2CE3BA)

## DESIGNATION OF PFCs / Fertilising Product Function

PFC 5. Inhibitor / *An inhibitor shall be an EU fertilising product the function of which is to improve the nutrient release patterns of a product providing plants with nutrients by delaying or stopping the activity of specific groups of micro-organisms or enzymes.*

PFC 5(A). Nitrification inhibitor

PFC 5(B). Denitrification inhibitor

PFC 5(C). Urease inhibitor

PFC 6. Plant biostimulant / *A microbial plant biostimulant shall consist of a micro-organism or a consortium of micro-organisms as specified under Component Material Category 7 in Part II of Annex II to FPR*

PFC 6(A). Microbial plant biostimulant

PFC 6(B). Non-microbial plant biostimulant

PFC 7. Fertilising product blend / *A fertilising product blend shall be an EU fertilising product composed of two or more EU fertilising products of PFC 1 to PFC 6. The blending shall not change the nature of each component EU fertilising product and shall not have an adverse effect on human, animal or plant health, on safety, or on the environment, under reasonably foreseeable conditions of storage or use of the fertilising product blend.*

For the detailed draft proposal of the revised scope and definitions please refer to the text below. Changes proposed are highlighted in **yellow**. The draft proposal for the scope and definitions outline the following recommendations:

1. Sustain the current scope of the product group in line with the results of stakeholders survey: Soil improvers, growing media and mulches. Nevertheless, the correctness of maintaining the separated category for mulches needs to be contrasted with the opinion of the EUEB. Mulch product category will not be reflected under mandatory product labelling in line with FPR. This might confuse the potential user. The scope is proposed as follows:  
*The product group 'growing media, soil improvers and mulch' shall comprise growing media and organic soil improvers*
2. Harmonizing the definitions with soil improvers and growing media with FPR, including the terminology used in product function categories PFC3 (soil improvers) and PFC 4 (growing media).

## Proposed Scope and Definitions

Article 1.

The product group 'growing media, soil improvers and mulch' shall comprise growing media, organic soil improvers and organic mulch.

Article 2

For the purpose of this Decision, the following definitions shall apply:

- (1) 'Growing medium' means EU fertilising product that falls under the scope of Product function category PFC4 according to FPR. Growing medium is EU fertilising product other than soil in situ, the function of which is for plants or mushrooms to grow in. For the purpose of this point, plants include algae.
- (2) 'Mineral growing medium' means a growing medium totally composed by mineral constituents;
- (3) 'Soil improver' means EU fertilising product that falls under the scope of Product function category PFC3 according to FPR, and the function of which is to maintain, improve or protect the physical or chemical properties, the structure or the biological activity of the soil to which it is added.
- (4) 'Organic soil improver' means a soil improver consisting of material 95 % of which is of solely biological origin;
- (5) 'Inorganic soil improver' means soil improver other than an organic soil improver;
- (6) 'Mulch' means a type of soil improver used as protective covering placed around plants on the topsoil whose specific functions are to prevent the loss of moisture, control weed growth, and reduce soil erosion;
- (7) 'Organic mulch' means mulch containing carbonaceous materials derived from biomass;
- (8) 'Constituent' means any input material that can be used as an ingredient of the product;
- (9) 'Organic constituent' means a constituent composed by carbonaceous materials;
- (10) 'Product family' means the range of products composed by the same constituents;

- (11) 'Annual output' means annual production of a product family;
- (12) 'Annual input' means the annual amount of materials treated in a waste or animal by-product treatment plant;
- (13) 'Batch' means quantity of goods manufactured by the same process under the same conditions and labelled in the same manner and is assumed to have the same characteristics;
- (14) 'Bio-waste' means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants;
- (15) 'Biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.

### Questions:

1. Should the product group name be changed to: Soil improvers and growing media? The category of mulches would accordingly be included in the soil improvers, which is in line with the FPR.
2. Are the proposed changes to definitions established by Art 2. of the Decision adequate?

## 3. Product constituents

The survey on the criteria validity revealed that 47 % of stakeholders consider that the criterion 1 (Constituents) is adequate and does not need any change, whereas the 28% and 10% indicated the need for deep or light revision, respectively.

Stakeholders emphasised that the exclusion of some constituents is not an adequate approach. This refers mainly to Criterion 2.1. that excludes peat from the scope of this product group. The inclusion of peat may be beneficial as providing the quality for the GM that might be difficult to achieve with other materials. Stakeholders that supported peat exclusion emphasised that the constituent is not sustainable and therefore should not be considered under EU Ecolabel, mainly due to environmental degradation and GHG production. Indeed, peat extraction that destroys peatlands should not be allowed as it impacts biodiversity including pollinator populations. In this respect, the position of the Commission is stated in the Green Deal Communication, the Biodiversity Strategy for 2030, which aim to protect and restore carbon-rich ecosystems and peatlands, and in the 2030 Climate Target Plan which sets the way for the EU to achieve climate neutrality by 2050 and the need for a growing sink. Compost, coir, bark, and wood fiber are some organic materials that are already being used in a commercial way as an alternative to peat<sup>4</sup>. **Accordingly, and in line with the roadmap towards resources restoration, the re-evaluation of peat inclusion is not an intention of the on-going revision.**

### 3.1. Brief explanation of product function (mode of action)

The chemo-physical properties of soil varies across different areas. This is why the type of fertiliser used needs to respond to the specific needs for to improve soil quality or productivity.

Soil improvers (or “soil conditioners”) are not designed to be used as a “soil” for plants growing but as an additive to existing soil mostly to correct its physical and chemical properties i.e. to enhance structure or increase the nutrients level. Soil improvers are used to improve soil organic matter content and mostly derive from composted biowaste. Hence the origin of the compost determines its final nutrient content. (from worm cast to sewage sludge). The addition of a mineral such as sand to soil of very poor quality with high clay content might be considered as soil improving, by increasing soil drainage. Adding lime to increase the soil pH in acid soils is also a common practice and might be considered as soil improvement. Furthermore, limed sludge can be used on acid soils to provide both fertiliser and soil pH adjustment (JRC, 2013).

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<sup>4</sup> Gruda, N. Current and future perspective of growing media in Europe. Acta Hort. 2012, 960, 37–43. [Google Scholar] [CrossRef]

Mulch usually consists of large particles of materials such as wood chips and bark applied on the surface of soil. Soil coverings with stone chips or pebbles may occur as a semi-permanent covering and, although this would suppress weeds and retain moisture, it is not in our view mulch, as it has a decorative function. For this reason an inorganic materials and especially extracted minerals are not permitted to be present in the EU Ecolabel mulch (JRC, 2013).

Growing media are products generated to meet specific demand of applications and therefore often consist of a blend that derives from different raw materials. The GMs provide a reservoir for water holding, a nutrient holding and exchange system, a zone for gaseous exchange for the plant root system and anchorage for plant roots. The physical characteristic (and so functionality) of a blend is adapted to achieve the correct balance of air and water holding capacity for the plants to be grown, and is determined by the components used and the proportions in which they are blended<sup>5</sup>. Organic components of GM include, but are not limited to: peat, bark, coconut coir, rice hulls, wood fibre, etc., whereas inorganic components include, but are not limited to: perlite, pumice, vermiculite, sand, hydrogel, etc.

### 3.2. Component Material Categories (CMCs) according to FPR

The final EU fertilising product can be composed of several component materials from various CMCs (specified in Part 1 of Annex II to FPR) as long as each component material and the input materials used to produce them comply with safety requirements specified in Annex I and II to FPR. Applying distinct requirements for each CMCs is necessary due the differences in the component materials that constitutes each category. This allows warranting different process requirements and control mechanisms adapted to the different potential hazardousness, variability, and quality of the input materials, production process conditions, among others. Accordingly, the CMC requirements (Part II of Annex II to FPR) mostly define input materials for specific production processes (e.g. for composting), process conditions (e.g. time/temperature profile for anaerobic digestion), and (to a limited extent) limits for specific contaminants/impurities that could be present for specific materials or produced during certain manufacturing processes.

For the EU Ecolabel certified product, it seems relevant to ensure the consistency with requirements regulated under FPR. Accordingly, the EU fertilising product shall consist solely of component materials complying with the requirements for one or more of the CMCs listed in Table 3 (EC, 2019). It is possible to put an EU fertilising product on the market that is composed of several component materials from various CMCs, where each material complies with the requirements of a certain category. A condition is, however, that no intentional chemical reaction or transformation takes place between the different CMCs that are contained in the EU fertiliser (Huygens et al., 2019; EC, 2019)<sup>6</sup>, and each component used in a final product does not pose unacceptable risk for human health and the environment.

#### **Compost and digestate**

In reference to the current Criterion 2, FPR defines recovery rules for bio-waste transformed into compost and digestate (only separately collected organic waste is permitted as input materials for composting and anaerobic digestion). In fact, the quality requirements for compost and digestate products are largely based on End of Waste Criteria for Biodegradable Waste Subjected to Biological Treatment. (JRC, 2014). As reflected in the Technical

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<sup>5</sup> <https://www.pthorticulture.com/en/training-center/fundamentals-of-growing-media/>

<sup>6</sup> Huygens D, Saveyn HGM, Tonini D, Eder P, Delgado Sancho L. 2019. Technical proposals for selected new fertilising materials under the Fertilising Products Regulation (Regulation (EU) 2019/1009). Process and quality criteria, and assessment of environmental and market impacts for precipitated phosphate salts & derivatives, thermal oxidation materials & derivatives and pyrolysis & gasification materials. EUR 29841 EN, Publications Office of the European Union, Luxembourg,

report (JRC, 2015) that provides rationales behind the currently valid criterion 1, this is largely built on the findings from the abovementioned report.

For 'compost' and 'digestate' (CMC 3 and CMC 5) FPR defines input materials and process requirements for composting and anaerobic digestion. Sewage sludge and mixed municipal waste are excluded as input materials for these categories. Sewage sludge and sewage sludge ashes can be a good source of fertilizer phosphorus in composing fertilizer formulations. (Chojnacka et al, 2020) However, the use of sewage sludge in biomass valorization brings the risk of an increased concentration of non-biodegradable organic substances and heavy metals in the soil. Their presence may cause phytotoxic effect (Ma et al., 2018)<sup>7</sup>. In line with the exclusion specification of CMC3 and CM5, it is proposed to maintain the currently valid exclusion for organic materials that should not form part of the final product, such as industrial sludges and mixed municipal waste.

### **Animal by-products**

Last but not least, FPR amends the 2009 Animal by-products Regulation to enable derived products no longer posing significant risks to animal health to move freely on the EU market as fertilising products. An EU fertilising product may contain derived products within the meaning of Regulation (EC) No 1069/2009 having reached the end point in the manufacturing chain as determined in accordance with that Regulation (EC, 2019). The exact list of admitted input materials for this category will be established by delegated acts referred to in Article 42(5) of FPR (EC, 2019). Although a list of input materials for CMC 10 (Table 3) is not yet concluded, it is likely that it will accommodate the formulation indicating that "an EU fertilising product may contain Category 2 or Category 3 materials or derived products thereof, in accordance with the conditions set out in Article 32(1) and (2) and in the measures referred to in Article 32(3) of Regulation (EC) No 1069/2009 provided that the end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of Regulation (EC) No 1069/2009". This is in line with the specification of the current criterion 2.2 that is proposed to be accordingly adapted.

### **Dynamic approach for CMCs under the FPR**

It is important to notice that the list of CMCs will be further expanded to include additional materials (for instance, currently a delegated regulation is underway that adds adding pyrolysis and gasification materials ("biochar") (CMC 14)<sup>8</sup>. Such material could potentially be used in growing media to replace peat. In addition, there is also an on-going work on CMC 11 – by-products that may possibly list some organic constituents (Huygens and Saveyn, 2020). CMC 11 may be of possible interest for the Ecolabel, and potentially later on more CMCs materials may arise that could also be of interest as ingredients for the Ecolabel. CMCs materials are both primary materials as materials that have undergone specific processing techniques (e.g. animal by-products can also be used to derive specific mineral materials (e.g. after incineration, CMC 13), and that could possibly be used as mineral constituents in growing media.

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<sup>7</sup> H. Ma, Y. Guo, Y. Qin, Y.-Y. Li. 2018. Nutrient recovery technologies integrated with energy recovery by waste biomass anaerobic digestion. *Bioresource Technology* 269, pp. 520-531, doi:10.1016/J.BIORTECH.2018.08.114

<sup>8</sup> <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12136-Fertilising-products-pyrolysis-and-gasification-materials>

Table 3. Component material categories (CMCs) (Source: Based on EC, 2019)

The component materials categories (CMCs) of which EU fertilising products shall solely consist	Summarised definition and requirements <sup>9</sup>
<b>CMC 1: Virgin material substances and mixtures</b>	<p>An EU fertilising product may contain substances and mixtures, except</p> <ul style="list-style-type: none"> <li>(a) waste within the meaning of Directive 2008/98/EC,</li> <li>(b) substances or mixtures which have ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC,</li> <li>(c) substances formed from precursors which have ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC, or mixtures containing such substances,</li> <li>(d) by-products within the meaning of Directive 2008/98/EC,</li> <li>(e) animal by-products or derived products within the meaning of Regulation (EC) No 1069/2009,</li> <li>(f) polymers,</li> <li>(g) compost, or</li> <li>(h) digestate.</li> </ul> <p>The substance or one of the substances in the mixture shall according to their intended use meet the rules specified under CMC 1 in Part II of Annex II to Fertilizing Product Regulation</p> <p>The exclusion of a material from CMC 1 does not prevent it from being an eligible component material by virtue of another CMC stipulating different requirements.</p>
<b>CMC 2: Plants, plant parts or plant extracts</b>	<p>Plants, plant parts or plant extracts having undergone no other processing than cutting, grinding, milling, sieving, sifting, centrifugation, pressing, drying, frost treatment, freeze-drying or extraction with water or supercritical CO<sub>2</sub> extraction. Plants include mushrooms and algae and exclude blue-green algae (cyanobacteria).</p>
<b>CMC 3: Compost</b>	<p>Compost shall be obtained through aerobic composting of exclusively one or more of the following input materials:</p> <ul style="list-style-type: none"> <li>(a) bio-waste within the meaning of Directive 2008/98/EC resulting from separate bio-waste collection at source;</li> <li>(b) derived products referred to in Article 32 of Regulation (EC) No 1069/2009 for which the end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of that Regulation;</li> <li>(c) living or dead organisms or parts thereof, which are unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by steam distillation or by heating solely to remove water, or which are extracted from air by any means, <u>except</u>: <ul style="list-style-type: none"> <li>—the organic fraction of mixed municipal household waste separated through mechanical, physicochemical, biological and/or manual treatment,</li> <li>—sewage sludge, industrial sludge or dredging sludge, and</li> <li>—animal by-products or derived products falling within the scope of Regulation (EC) No 1069/2009 for which no end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of that Regulation;</li> </ul> </li> </ul>
<b>CMC 4: Fresh crop digestate</b>	<p>Digestate shall be obtained through anaerobic digestion of exclusively one or more of the following input materials:</p>

<sup>9</sup> For detailed description and required process conditions please see Annex II Part II to FPR.

The component materials categories (CMCs) of which EU fertilising products shall solely consist	Summarised definition and requirements <sup>9</sup>
	<p>(a) plants or plant parts grown for the production of biogas. Plants include algae and exclude blue-green algae (cyanobacteria);</p> <p>(b) digestion additives which are needed to improve the process performance or the environmental performance of the digestion process provided that:</p> <ul style="list-style-type: none"> <li>(i) the additive is registered pursuant to Regulation (EC) No 1907/2006, with a dossier containing: <ul style="list-style-type: none"> <li>—the information provided for by Annexes VI, VII and VIII to Regulation (EC) No 1907/2006, and</li> <li>—a chemical safety report pursuant to Article 14 of Regulation (EC) No 1907/2006 covering the use as a fertilising product, unless explicitly covered by one of the registration obligation exemptions provided for by Annex IV to Regulation (EC) No 1907/2006 or by point 6, 7, 8 or 9 of Annex V to that Regulation, and</li> </ul> </li> <li>(ii) the total concentration of all additives does not exceed 5 % of the total input material weight; or</li> </ul> <p>(c) any material referred to in point (a) that has previously been digested.</p>
<b>CMC 5: Digestate other than fresh crop digestate</b>	<p>Digestate shall be obtained through anaerobic digestion of exclusively one or more of the following input materials:</p> <ul style="list-style-type: none"> <li>(a) bio-waste within the meaning of Directive 2008/98/EC resulting from separate bio-waste collection at source;</li> <li>(b) derived products referred to in Article 32 of Regulation (EC) No 1069/2009 for which the end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of that Regulation;</li> <li>(c) living or dead organisms or parts thereof which are unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by steam distillation or by heating solely to remove water, or which are extracted from air by any means, except: <ul style="list-style-type: none"> <li>(i) the organic fraction of mixed municipal household waste separated through mechanical, physicochemical, biological and/or manual treatment,</li> <li>(ii) sewage sludge, industrial sludge or dredging sludge,</li> <li>(iii) animal by-products or derived products falling within the scope of Regulation (EC) No 1069/2009 for which no end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of that Regulation;</li> </ul> </li> </ul>
<b>CMC 6: Food industry by-products</b>	<p>Component material consisting of one of the following substances:</p> <ul style="list-style-type: none"> <li>(a) food industry factory lime, i.e. a material from the food processing industry obtained by carbonation of organic matter, using exclusively burnt lime from natural sources;</li> <li>(b) molasses, i.e. a viscous by-product of the refining of sugarcane or sugar beets into sugar;</li> <li>(c) vinasse, i.e. a viscous by-product of the fermentation process of molasses into ethanol, ascorbic acid or other products;</li> <li>(d) distillers grains, i.e. by-products resulting from the production of alcoholic beverages;</li> <li>(e) plants, plant parts or plant extracts having undergone only heat treatment or heat treatment in addition to processing methods referred to in CMC 2; or</li> <li>(f) lime from drinking water production, i.e. residue which is released by production of drinking water from groundwater or surface water and consists, mainly, of calcium carbonate.</li> </ul>
<b>CMC 7: Micro-organisms</b>	<p>Product belonging to PFC 6(A) may contain micro-organisms, including dead or empty-cell micro-organisms and non-harmful residual elements of the media on which they were produced, which have undergone no other processing than drying or freeze-drying; and are listed below:</p> <ul style="list-style-type: none"> <li>• <i>Azotobacter spp.</i></li> <li>• <i>Mycorrhizal fungi</i></li> <li>• <i>Rhizobium spp.</i></li> <li>• <i>Azospirillum spp.</i></li> </ul>
<b>CMC 8: Nutrient polymers</b>	<p>Polymers exclusively made up of monomer substances complying with the criteria set out in points 1 and 2 of CMC 1, where the purpose of the polymerisation is to control the release of nutrients from one or more of the monomer substances. At least 60 % of the polymers shall be soluble in a phosphate buffer solution with a pH of 7,5 at 100 °C. The final degradation products shall be only ammonia (NH<sub>3</sub>), water and carbon dioxide (CO<sub>2</sub>), and the polymers shall not contain more than 600 ppm of free formaldehyde.</p>

The component materials categories (CMCs) of which EU fertilising products shall solely consist	Summarised definition and requirements <sup>9</sup>
<b>CMC 9: Polymers other than nutrient polymers</b>	<p>A product may contain polymers other than nutrient polymers only in cases where the purpose of the polymer is:</p> <ul style="list-style-type: none"> <li>(a) to control the water penetration into nutrient particles and thus the release of nutrients (in which case the polymer is commonly referred to as a 'coating agent'),</li> <li>(b) to increase the water retention capacity or wettability of the EU fertilising product, or</li> <li>(c) to bind material in an EU fertilising product belonging to PFC 4.</li> </ul> <p>From 16 July 2026, the polymers referred to in point 1(a) and (b) shall comply with the biodegradability criteria established by delegated acts referred to in Article 42(6). In the absence of such criteria, an EU fertilising product placed on the market after that date shall not contain such polymers.</p> <p>For the polymers referred to in point 1(a) and (b), neither the polymer, nor its degradation by-products, shall show any overall adverse effect on animal or plant health, or on the environment, under reasonably foreseeable conditions of use in the EU fertilising product. The polymer shall pass a plant growth acute toxicity test, an earthworm acute toxicity test and a nitrification inhibition test with soil micro-organisms.</p>
<b>CMC 10: Derived products within the meaning of Regulation (EC) No 1069/2009</b>	<p>An EU fertilising product may contain derived products within the meaning of Regulation (EC) No 1069/2009 having reached the end point in the manufacturing chain as determined in accordance with that Regulation, and which are listed in the following table and as specified therein:</p> <p><i>Note: The table will be established by delegated acts referred to in Article 42(5).</i></p>
<b>CMC 11: By-products within the meaning of Directive 2008/98/EC</b>	<p>An EU fertilising product may contain by-products within the meaning of Directive 2008/98/EC, except:</p> <ul style="list-style-type: none"> <li>(a) animal by-products or derived products within the meaning of Regulation (EC) No 1069/2009,</li> <li>(b) polymers,</li> <li>(c) compost, or</li> <li>(d) digestate.</li> </ul> <p>2. The by-products shall have been registered pursuant to Regulation (EC) No 1907/2006, with a dossier containing:</p> <ul style="list-style-type: none"> <li>(a) the information provided for by Annexes VI, VII and VIII to Regulation (EC) No 1907/2006, and</li> <li>(b) a chemical safety report pursuant to Article 14 of Regulation (EC) No 1907/2006 covering the use as a fertilising product, unless explicitly covered by one of the registration obligation exemptions provided for by Annex IV to Regulation (EC) No 1907/2006 or by point 6, 7, 8 or 9 of Annex V to that Regulation.</li> </ul> <p>From 16 July 2022, the by-products shall comply with the criteria established by delegated act referred to in Article 42(7) of Fertilizing Product Regulation. A product placed on the market after that date shall not contain by-products do not comply with such criteria.</p>

### 3.2.1. Comparison of component material categories (CMCs) as established by Annex II to FPR with constituent admitted under EU Ecolabel criteria

Table 4 compares the list of constituents allowed to be used in the EU Ecolabel products with Components Material Categories (CMCs) as laid down in Part I of Annex II to FPR. Whereas the input material for CMC categories might be considered a dynamic approach (some of CMCs are still under development, as outlined above), EU Ecolabel refers to the fixed list of admitted components. All in all, **the scope of each CMC entry is much broader than the list of input materials admitted to be present in the EU Ecolabel product**, which may correspond (include) different CMCs. In principle, this difference does not indicate inconsistency between the two legal documents, but rather higher selectivity of EU Ecolabel input materials. This is in line with the principle of the voluntary EU Ecolabel scheme to target 10-20% of the best performing product on the market.

Alternatively, the EU Ecolabel could simply refer to eligible CMCs as outlined in Annex II of the Fertilising Products Regulation, possibly complemented with the inclusion/exclusion of specific materials. This would be probably the best possible alignment with the FPR, but also a considerable change in the philosophy and structure that would require further analysis of each CMC. The key drawback is a dynamic approach that applies, as the CMCs requirements have a substantial degree of flexibility to be modified by the Delegated Acts (add additional CMCs, update texts on input materials, etc.). Accordingly, direct referring to the specific CMCs would sacrifice the selectivity and control of admitted EU Ecolabel input materials.

Table 4 Correspondence between constituents allowed to be used in the EU Ecolabel products and Component Material Categories established by FPR

Constituent approved by EU Ecolabel for growing media, soil improvers and mulch	Component Material Category (CMCs) according to FPR
<b>Organic constituents</b>	
Materials derived from the recycling of bio-waste from separate collection, as defined in Article 3 of Directive 2008/98/EC of the European Parliament and of the Council (3).	<b>CMC 2: Plants, plant parts or plant extracts</b> <b>CMC 3: Compost</b> <b>CMC 4: Fresh crop digestate</b> <b>CMC 5: Digestate other than fresh crop digestate</b> <b>CMC 6: Food industry by-products</b> <b>CMC 11: By-products within the meaning of Directive 2008/98/EC</b>
Materials derived from category 2 and 3 animal by-products as laid down in Article 32 of Regulation (EC) No 1069/2009 of the European Parliament and of the Council (4) and technical standards which are laid down by implementing Regulation (EU) 142/2011.	<b>CMC 3: Compost</b> <b>CMC 5: Digestate other than fresh crop digestate</b> <b>CMC 10: Derived products within the meaning of Regulation (EC) No 1069/2009</b>
Materials derived from faecal matter, straw and other natural non-hazardous agricultural or forestry material as defined in Article 2(1)(f) of Directive 2008/98/EC.	<b>CMC 2: Plants, plant parts or plant extracts</b> <b>CMC 3: Compost</b> <b>CMC 5: Digestate other than fresh crop digestate</b>
Materials derived from any other biomass by-products, as defined in Article 5 of Directive 2008/98/EC, Materials derived from recycling or recovery of sludges are only allowed if the sludges comply with the following requirements: <ul style="list-style-type: none"> <li>• they are they are single-source separated, meaning that there has been no mixing with effluents or sludges outside a specific production process and they are identified as one of the following types of waste according to the European List of Wastes, as defined by Commission Decision 2000/532/EC with codes: 020305, 020403, 020502, 020603, 020705</li> </ul>	<b>CMC 2: Plants, plant parts or plant extracts</b> <b>CMC 3: Compost</b> <b>CMC 4: Fresh crop digestate</b> <b>CMC 5: Digestate other than fresh crop digestate</b> <b>CMC 6: Food industry by-products</b> <b>CMC 11: By-products within the meaning of Directive 2008/98/EC</b>
<b>Mineral constituents</b>	
Mineral growing media	<b>CMC 1: Virgin material substances and mixtures</b> <b>CMC 8: Nutrient polymers</b>

### 3.3. Adjustments proposed for Criterion 1.

- The term constituent does not appear in the FPR, and the term “component material” is used instead. Therefore, the appropriate change in the criterion heading is proposed.
- It is proposed to simplify the criterion by merging Criterion 1 and 2 under the common denominator: Components
- As a prerequisite related mandatory process conditions are proposed to be accommodated under EU Ecolabel criteria. It is necessary to collect further feedback on the possible inclusion or exclusion of some CMCs, if considered necessary.
- It is proposed not to change the format of the criterion referring to specified input materials that correspond to different CMRs.

#### Proposed Criterion 1 – Components

##### Criterion 1 –Component materials

Unless separately specified the criterion applies to growing media, soil improvers and mulch.

As the prerequisite the components admitted shall be organic and/or mineral components, and the final product shall consist solely of component materials complying with the requirements specified in Annex II to Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003<sup>10</sup>

##### Assessment and verification:

The applicant shall provide the Competent Body with a list of components of the product.

##### Criterion 1.1 – Organic components of growing media, soil improvers and mulch

###### Criterion 1.1.(i)

A final product shall not contain peat.

###### Criterion 1.1(ii)

The following materials are allowed as organic constituents of a final product:

- Materials derived from the recycling of bio-waste from separate collection at source, as defined in Article 3 of Directive 2008/98/EC of the European Parliament and of the Council<sup>11</sup>;
- Category 2 or Category 3 materials or derived products thereof, in accordance with the conditions set out in Article 32(1) and (2) and in the measures referred to in Article 32(3) of Regulation (EC) No 1069/2009 provided that the end point in the manufacturing chain has been determined in accordance with the third subparagraph of Article 5(2) of Regulation (EC) No 1069/2009
- Materials derived from faecal matter, straw and other natural non-hazardous agricultural or forestry material as defined in Article 2.1(f) of Directive 2008/98/EC;
- Materials derived from any other biomass by-products, as defined in article 5 of Directive 2008/98/EC, that are not mentioned above, subject to the provisions of 2) and sub-criterion 1.1(iii)
- Materials derived from recycling or recovery of any other biomass waste not mentioned above, subject to the provisions of 2) and sub-criterion 1.1 (iii).

The following materials are not allowed as organic constituents of a final product:

- Materials totally or partially derived from the organic fraction of mixed municipal household waste separated through mechanical, physicochemical, biological and/or manual treatment;
- The organic fraction of mixed municipal household waste separated through mechanical, physicochemical, biological and/or manual treatment,

<sup>10</sup> OJ L 170, 25.6.2019, p. 1–114

<sup>11</sup> Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

- Materials totally or partially derived from sludges derived from municipal sewage water treatment and from sludges derived from the paper industry;
- Materials totally or partially derived from sludges other than those allowed in Criterion 1.1.(iii);
- Animal by-products or derived products falling within the scope of Regulation (EC) No 1069/2009 for which no end point in the manufacturing chain has been determined

**Criterion 1.1 (iii)**

Materials derived from recycling or recovery of sludges are only allowed if the sludges comply with the following requirements:

- (a). They are identified as one of the following types of waste according to the European List of Wastes, as defined by Decision 2000/532/EC<sup>12</sup> presented in **Error! Reference source not found.**:

**Table 5. Sludges allowed and their codes according to the European List of Wastes**

0203 05	sludges from on-site effluent treatment in the preparation and processing of fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco, conserve production, yeast and yeast extract production, molasses preparation and fermentation;
0204 03	sludges from on-site effluent treatment in sugar processing;
0205 02	sludges from on-site effluent treatment in the dairy products industry;
0206 03	sludges from on-site effluent treatment in the baking and confectionery industry;
0207 05	sludges from on-site effluent treatment in the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa).

- (b). They are single-source separated, meaning that there has been no mixing with effluents or sludges outside a specific production process.

**Assessment and verification:**

The applicant shall provide the Competent Body with a list of components of the product supported by the information about the origin of each organic constituent of the product and a declaration of compliance with the above requirement.

**Question:**

- Are proposed changes appropriate?
- Should EU Ecolabel introduce a list of admitted and non-admitted components in line with the currently valid requirements of criterion 1 and 2.

<sup>12</sup> Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (OJ L 226, 6. 9.2000, p. 3).

## 4. Sources of mineral extraction

Criterion 3.2. (for both SI and GM) requires that minerals extracted from natural resources and used in a final product, are not sourced from the protected areas.

Based on the criteria validity survey, the 70% of stakeholders considered that the criterion is adequate and does not need to be changed. Stakeholders pointed out that the criterion might be complex to read, and explain i.e. circularity extraction of raw materials. Stakeholders also indicated that in Natura 2000<sup>13</sup> sites, the extraction of minerals is mostly prohibited, and that the criterion does not provide sufficient protection.

The revision mainly targets the assessment of the appropriateness of the requirements, including the impacts on pollinator habitats. It will also analyze the applicability of the guidelines established under the Bern Convention<sup>14</sup> in relation to extraction of minerals from non-EU Member States parties to the Convention.

### 4.1. Brief analysis of the environmental impact on ecosystem

The state of biodiversity in an area can be determined by the condition of the habitat and ability to enable persistence of species. The transformation of land to agriculture, mining and urban area causes modification or loss of habitat, which is the major cause of biodiversity losses worldwide. Adverse effects and modification can be observed long after the end of the mine activity ((Ntshane and Gambiza, 2016<sup>15</sup>, Huang et al 2010<sup>16</sup>, Arcadis 2020). The World Resources Institute was evaluating the environmental impact on the ecosystem of mining activities (WRI, 2003)<sup>17</sup>. Globally 75% of active mines and exploration areas was assessed to occur in areas of high conservation value and high water stress basins, and more than 25% of active mines and exploration overlap with/fall within the radius of 10 km from a strictly protected area. About a third of all active mines and exploration sites are located within ecosystems either intact or with a high conservancy value.

The International Union for Conservation of Nature (IUCN) Red List assessments indicate that 16.5 per cent of vertebrate pollinators are threatened with global extinction (increasing to 30 per cent for island species). In Europe, 9 per cent of bee and butterfly species are threatened and populations are declining for 37 per cent of bees and 31 per cent of butterflies (excluding data deficient species, which includes 57 per cent of bees). Where national Red List assessments are available, they show that often more than 40 per cent of bee species may be threatened (IPBES 2016, Potts et al 2021).

#### 4.1.1. Biodiversity protection

The Convention on Biological Diversity (CBD) is an international legal instrument addressing protected areas (CBD 1992)<sup>18</sup>. The term “protected area” is defined in Article 2 of the Convention as “a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives”.

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<sup>13</sup> Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. It stretches across all 27 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive. For more information, please see: [https://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](https://ec.europa.eu/environment/nature/natura2000/index_en.htm)

<sup>14</sup> <https://www.coe.int/en/web/bern-convention>

<sup>15</sup> Ntshane, B.S. and Gambiza, J. 2016. Habitat assessment for ecosystem services in South Africa p.242-254.

<sup>16</sup> Huang, X., Sillanpää, M., Gjessing, E.T., Peräniemi, S., Vogt, R.D. 2010. Environmental impact of mining activities on the surface water quality in Tibet: Gyama valley, *Science of The Total Environment* 408 (19), p. 4177-4184, <https://doi.org/10.1016/j.scitotenv.2010.05.015>.

<sup>17</sup> WRI, 2003. *Mining and Critical Ecosystems: Mapping the Risks*. World Resources Institute, Washington, DC

<sup>18</sup> CBD, 1992. *Convention on Biological Diversity*. 1992. Nairobi final act of the conference for the adoption of the agreed text of the convention on biological diversity. Section IX. United Nations Environmental Programme; Nairobi, Kenya. Available from: <https://www.cbd.int/doc/handbook/cbd-hb-09-en.pdf>

The International Union for Conservation of Nature defines 'protected area' as *a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values* (IUCN, 2008).

The Bern Convention (Council of Europe, 1979)<sup>19</sup> is a binding international legal instrument in the field of nature conservation, covering most of the natural heritage of the European continent and extending to some States of Africa. The Convention was open for signature on 19 September 1979 and came into force on 1 June 1982. It is the only regional Convention of its kind worldwide, it is particularly concerned about protecting natural habitats and endangered species, including migratory species, as well as to promote European co-operation in this field.

Natura 2000 is the centrepiece of EU nature and biodiversity policy, and so it is the largest coordinated network of protected areas in the world<sup>20</sup> of nearly 26000 sites in the 27 EU countries, established under the 1992 Habitats Directive and covering almost 18% of the EU's land area. The European Commission's Guidance on Non-energy mineral extraction and Natura 2000 (EC 2011)<sup>21</sup> has the specific purpose of providing guidance on how best to ensure that Non-Energy Extractive Industry (NEEI) developments are compatible with the provisions of the EU Habitats (EC, 1992) and Birds Directives (EC, 2009)<sup>22</sup>. Natura 2000 is not a system of strict nature reserves from which all human activities would be excluded. While it includes strictly protected nature reserves, most of the land remains privately owned. The approach to conservation and sustainable use of the Natura 2000 areas is much wider, largely centered on people working with nature rather than against it. However, Member States must ensure that the sites are managed in a sustainable manner, both ecologically and economically. In this respect, the guidance focuses in particular on the procedures to follow under Article 6 of Habitats Directive and provides clarifications on certain key aspects of this approval process. This article does not exclude any industrial or extractive activity, but requires an appropriate assessment prior to make a decision on the permit. Therefore, according to the correct interpretation of Habitats Directive, a no-go criterion on mineral extraction wouldn't be coherent with its provision.

The European Commission EU 2030 Biodiversity Strategy<sup>23</sup> increases the ambition for the conservation of wild pollinators. It specifies specific commitments and actions to be delivered by 2030, as follows:

- Establishing a larger EU-wide network of protected areas on land and at sea through enlargement of existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value.
- Launching an EU nature restoration plan<sup>24</sup>
- Introducing measures to enable the necessary transformative change through unlocking funding for biodiversity, and strengthening the governance framework
- Introducing measures to tackle the global biodiversity challenge. In particular, working towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity<sup>25</sup>.

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<sup>19</sup> Council of Europe, 1979. Convention on the Conservation of European Wildlife and Natural Heritage. Bern, Switzerland. Available at: <http://conventions.coe.int/Treaty/EN/Treaties/Html/104.htm>

<sup>20</sup> [https://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](https://ec.europa.eu/environment/nature/natura2000/index_en.htm)

<sup>21</sup> EC, 2011. Guidance on Non-energy mineral extraction and Natura 2000. doi:10.2779/98870 Available at: [https://ec.europa.eu/environment/nature/natura2000/management/docs/nee\\_i\\_n2000\\_guidance.pdf](https://ec.europa.eu/environment/nature/natura2000/management/docs/nee_i_n2000_guidance.pdf)

<sup>22</sup> Directive 2009/147/EC of the European Parliament and of the Council (codified version of Council Directive 79/409/EEC on the conservation of wild birds, as amended) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, consolidated version reference 01992L0043 of 01.01.2007 – see [http://ec.europa.eu/environment/nature/legislation/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/index_en.htm)

<sup>23</sup> [https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030\\_en](https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en)

<sup>24</sup> [https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030/eu-nature-restoration-targets\\_en](https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030/eu-nature-restoration-targets_en)

<sup>25</sup> <https://www.cbd.int/convention/>

#### 4.1.1.1 Specific aspects of pollinators protection

To address the issue of pollinators decline, in 2000, the fifth Conference of the parties of the Convention on biological diversity (CBD) established the international initiative for the Conservation and sustainable use of pollinators (also known as the international pollinator initiative – IPI) (CBD, 2018)<sup>26</sup> The EU Pollinators Initiative was put forward by the Commission in June 2018 (EC, 2018) setting the framework for an integrated approach to address the decline of pollinators in the European Union,

The Action 1 of the EU Pollinators Initiative triggers setting up the EU Pollinator Monitoring Scheme, which targets implementation of a standardized monitoring mechanism for pollinators. The Scheme is currently under development, but it is meant and design to ensure the provision of robust information on pollinator and pollination trends. Once implemented it will ensure data on the status and trends of pollinator species, as well on pollination ecosystem service (Potts et al, 2021)<sup>27,28</sup>.

#### 4.2. Mitigation hierarchy as the best practice approach

As the priority, the site needs to meet legal and environmental requirements of Directive 2006/21/EC (EC, 2006)<sup>29</sup>, national or local mining legislation and other environmental legislation, such as an EIA (EC, 2014)<sup>30</sup>, assessment according to Nature 2000 and the conservation of Natural Habitats and Wild Flora and Fauna (FFH) according to Directive 92/43/EEC and amendments (EC, 1992)<sup>31</sup>. European Commission developed the EU Guidance document on integrating ecosystems and their services in decision-making (Part 1, part 2, and Part 3) (EC 2019, EC 2020).<sup>32</sup> Chapter 2.3 of Part I outlines guiding principles for the successful integration of ecosystems services. It establishes the directions for the ‘mitigation hierarchy’ that ensures no net loss of healthy ecosystems and their services. It must be implemented with full care and transparency to effectively address impacts to nature (EC, 2020)<sup>33</sup>. The guidance reflects EU environmental legislation, including Action 7 of the EU Biodiversity Strategy. The mitigation hierarchy adheres to four types of measures, as follows:

- I. **Avoidance:** Identifying and completely avoiding detrimental impacts from the outset of a process. This includes monitoring and planning efforts before measures are implemented.
- II. **Minimisation:** Reducing the extent of unavoidable impacts to ecosystems. This includes the duration and intensity of direct, indirect and cumulative impacts.
- III. **Rehabilitation/Restoration:** Rehabilitating ecosystems that have been degraded or restoring ecosystems that have been cleared following impacts that could not be avoided or minimised.
- IV. **Offsetting:** Compensating for all impacts to ecosystems that could not be avoided, minimised or restored.

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<sup>26</sup> Convention on Biological Diversity, Subsidiary Body on Scientific, Technical and Technological Advice 22nd meeting of SBSTTA “Conservation and Sustainable use of Pollinators”, Montreal, Canada, 2018

<sup>27</sup> Potts, S.G., Dauber, J., Hochkirch, A., Oteman, B., Roy, D.B., Ahmé, K., Biesmeijer, K., Breeze, T.D., Carvell, C., Ferreira, C., FitzPatrick, Ú., Isaac, N.J.B., Kuussaari, M., Ljubomirov, T., Maes, J., Ngo, H., Pardo, A., Polce, C., Quaranta, M., Settele, J., Sorg, M., Stefanescu, C., Vujić, A., Proposal for an EU Pollinator Monitoring Scheme, EUR 30416 EN, Publications Office of the European Union, Ispra, 2021, ISBN 978-92-76-23859-1, doi:10.2760/881843, JRC122225.

<sup>28</sup> More information on EU Pollinator Monitoring Scheme can be access at: <https://wikis.ec.europa.eu/display/EUPKH/EU+Pollinator+Monitoring+Scheme>

<sup>29</sup> EC, 2006. Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC. OJ L 102, 11.4.2006, p. 15–34

<sup>30</sup> EC, 2014. Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. OJ L 124, 25.4.2014, p. 1–18

<sup>31</sup> EC, 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. OJ L 206, 22.7.1992, p. 7–50

<sup>32</sup> EC, 2019. COMMISSION STAFF WORKING DOCUMENT EU guidance on integrating ecosystems and their services into decision-making. Available at: <https://ec.europa.eu/environment/nature/ecosystems/>

<sup>33</sup> EC, 2020. EU Guidance on Integrating Ecosystems and their Services into Decision-Making Summary for Policymakers in Government and Industry. Available at: [https://ec.europa.eu/environment/nature/ecosystems/pdf/8461\\_Summary%20EU\\_Guidance\\_Draft\\_02\\_17.07.2020.pdf](https://ec.europa.eu/environment/nature/ecosystems/pdf/8461_Summary%20EU_Guidance_Draft_02_17.07.2020.pdf)

Raw material extraction should be covered by appropriate mitigation measures that aim at minimising biodiversity losses and guarantee appropriate recovery of the areas where extraction activities take place. Best Available Techniques (BAT) Reference Document for the Management of Waste from Extractive Industries (JRC, 2018)<sup>34</sup>, under BAT 4 emphasises the importance to identify all activities that may have impacts on biodiversity, in **the initial phase of project design and planning**. A baseline study is usually established as part of **the Environmental Risk and Impact Evaluation** (BAT 5) and is also essential as **a benchmark for monitoring** programmes carried out during mining operation and after closure. Appropriate assessment is one of the three major steps that need to be undertaken under article 6.3 and 6.4 of the EU Habitats Directive.

In this respect, the European Commission's Guidance on Non-energy mineral extraction and Natura 2000 (EC 2010) explains which mitigation measures to implement to minimize the environmental impacts on biodiversity. The monitoring is considered one of the guidance principle to ensure the correct application. It is also essential for assessing the performance of the rehabilitated areas. As previously mentioned, the risks that mining operations might pose to biodiversity and wild pollinators should be carefully managed and taken into account before the excavation begins. These can only be verified by providing full documentation of the extraction activity, including the environmental recovery plan and the environmental impact assessment report (Donatello, 2021)<sup>35</sup>

The rehabilitation management plan must state the objectives for the rehabilitation of the quarry. A conceptual final landform design, including the proposed post-quarry land use should be included and specific details on the implementation of an effective revegetation program should be provided. The rehabilitation and regeneration programmes should also take into account the Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (Arcadis 2020).

Raw materials can also be supplied from outside of the EU. Consequently, some form of equivalence is needed to ensure that raw material extraction for the production of EU Ecolabel products is not disturbing protected areas outside of the EU. Specific reference is made to Emerald sites and general reference is made to nationally protected areas.

### 4.3. Adjustments proposed for Criterion 3.2.:

The requirement is proposed **to be expanded to all excavation sites**, to ensure implementation of the mitigation hierarchy at all sites. In this line, the proposed revised criterion is fully harmonized with criterion 1.1. laid down by Commission Decision (EU) 2021/476 establishing EU Ecolabel criteria for hard floor covering, as follows:

The extraction of minerals for the manufacture of an EU Ecolabel soil improvers and growing media shall only take place on sites which are covered by the following documentation:

- an environmental impact assessment and, where relevant, a report in accordance with Directive 2014/52/EU of the European Parliament and of the Council ;
- a valid authorisation for the extraction activity issued by the relevant regional or national authority;
- a rehabilitation management plan associated with the authorisation for the extraction activity;
- a map indicating the location of the quarry;
- a declaration of conformity with Regulation (EU) No 1143/2014 of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species;
- a declaration of conformity with Council Directive 92/43/EEC (habitats) and Directive 2009/147/EC of the European Parliament and of the Council (birds).

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<sup>34</sup> JRC, 2018. Garbarino, E., Orveillon, G., Saveyn, Pascal Barthe, P. Eder, P. Best Available Techniques (BAT) Reference Document for the Management of Waste from Extractive Industries in accordance with Directive 2006/21/EC. EUR 28963 EN; Publications Office of the European Union, Luxembourg, 2018; JRC109657.

<sup>35</sup> Donatello S., Garbarino E., Sanfelix J., Fernandez Carretero A. & Wolf O., 2021. EU Ecolabel criteria for hard covering products. Final Technical Report. Criteria and supporting rationale,

With regards to the last point above, in cases where extraction sites are located in Natura 2000 network areas, composed of Special Areas of Conservation under Directive 92/43/EEC and Special Protection Areas under Directive 2009/147/EC, extraction activities shall have been assessed and authorised in accordance with the provisions laid down in Article 6 of Directive 92/43/EEC and have taken into account the relevant EC Guidance document .

Also with regards to the last point above, in cases where extraction sites are located outside the EU, if materials are extracted from areas officially nominated as candidates for or adopted as Areas of Special Conservation Interest; part of the Emerald network pursuant to Recommendation No 16 (1989) and Resolution No 3 (1996) of the Bern Convention or protected areas designated as such under the national legislation of the sourcing / exporting countries, the extraction activities shall have been assessed and authorised in accordance with provisions that provide assurances equivalent to Directives 92/43/EEC and 2009/147/EC.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with this requirement issued by the competent authorities, or a copy of the authorisations issued by the competent authorities and any other required declarations and documentation.*

*The rehabilitation management plan shall include the objectives for the rehabilitation of the quarry, the conceptual final landform design, including the proposed post quarry land use, details on the implementation of an effective revegetation program and details of an effective monitoring programme to assess performance of the rehabilitated areas.*

*In case industrial or construction mineral extraction activities have been carried out in Natura 2000 network areas (in the Union), the Emerald network or protected areas designated as such under the national legislation of the sourcing/exporting countries (outside the Union), the applicant shall provide a declaration of compliance with this requirement issued by the competent authorities or a copy of their authorisation issued by the competent authorities.*

As the priority, the site needs to meet legal and environmental requirements of Directive 2006/21/EC, national or local mining legislation and other environmental legislation, such as an EIA (EC, 2014) , assessment according to Nature 2000 and the conservation of Natural Habitats and Wild Flora and Fauna (FFH) according to Directive 92/43/EEC and amendments (EC, 1992).

Some pre-date the 2011/92/EU EIA Directive and even the 2001/42/EC Directive on Strategic Environmental Assessments. Consequently, not all quarries will have an EIA, and it is possible that the result of an EIA screening procedure will be that an EIA is not needed. In such cases, the results of the screening procedure should be provided (Donatello, 2021).

### **Questions:**

1. In your opinion, does the criterion holistically address the biodiversity and natural habitat protection?
2. Is the proposal to harmonize the requirement with EU Ecolabel for hard floor coverings adequate?

## 5. Provision of information

### Criterion 12 - Provision of information

*This criterion applies to growing media, soil improvers and mulch.*

*The following information shall be provided with the product either on the packaging or in accompanying fact sheets.*

#### **Criterion 12.1 - Soil improvers**

- a) *The name and address of the body responsible for marketing;*
- b) *A descriptor identifying the product by type, including the wording "SOIL IMPROVER";*
- c) *A batch identification code;*
- d) *The quantity (in weight);*
- e) *Range of moisture content;*
- f) *The main materials (those over 5% by weight) from which the product has been manufactured;*
- g) *The recommended conditions of storage and the recommended 'use by' date;*
- h) *Guidelines for safe handling and use;*
- i) *A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);*
- j) *pH (reference of the test method used);*
- k) *Organic carbon content (%), total nitrogen content (%) and inorganic nitrogen content (%) (reference to the test method used);*
- l) *Carbon/Nitrogen ratio;*
- m) *Total phosphorus (%) and total potassium (%) (reference to the test method used) ;*
- n) *For products for non-professional use, a statement about the stability of organic matter (stable or very stable);*
- o) *A statement on recommended methods of use;*
- p) *In non-professional applications: recommended rate of application expressed in kilograms of product per unit surface area (m<sup>2</sup>) per annum.*

#### **Criterion 12.2 - Growing media**

- a) *The name and address of the body responsible for marketing;*
- b) *A descriptor identifying the product by type, including the wording "GROWING MEDIUM";*
- c) *A batch identification code;*
- d) *The quantity (in volume or number of slabs, in case of mineral wool, specifying the dimensions of the slab);*
- e) *Range of moisture content;*
- f) *The main materials (those over 5% by volume) from which the product has been manufactured;*
- g) *The recommended conditions of storage and the recommended 'use by' date;*
- h) *Guidelines for safe handling and use;*
- i) *A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);*
- j) *pH (EN 13037);*
- k) *Electrical Conductivity (1:5 extraction);*
- l) *Germination inhibition (EN 16086-1);*
- m) *Growth inhibition (EN 16086-1);*
- n) *A statement about the stability of organic matter (stable or very stable);*
- o) *A statement on recommended methods of use;*
- p) *For mineral growing media, a statement about the professional horticultural application.* **Criterion 12.3 -**

### **Mulch**

- a) *The name and address of the body responsible for marketing;*
- b) *A descriptor identifying the product by type, including the wording "MULCH";*
- c) *A batch identification code;*
- d) *The quantity (in volume);*
- e) *Range of moisture content;*
- f) *The main materials (those over 5% by volume) from which the product has been manufactured;*
- g) *Guidelines for safe handling and use;*
- h) *A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);*
- i) *pH (reference of the test method used);*
- j) *A statement about the stability of organic matter (stable or very stable), where applicable, for non-professional uses;*
- k) *A statement on recommended methods of use;*
- l) *In non-professional applications: recommended rate of application expressed in mm.*

**Assessment and verification:** *The applicant shall declare that the product complies with this criterion and provide the Competent Body with a sample of the packaging or fact sheets or the text of the user information written on the packaging or accompanying fact sheets.*

As the outcome of the criteria validity assessment, the 52% of stakeholders considered that the criterion is adequate and does not need to be changed, whereas the 10% and 15% indicated the need for a thorough or light revision, respectively. In general, stakeholders requested to simplify the rules for the provision of information, as well as to assess if all information requested brings additional benefits to the end-user. It was also suggested to harmonise the provision of information with the labelling instructions established by FPR in combination with related EN Standards. Stakeholders noticed that some information should rather be incorporated into product technical dossier and not to be displayed on the product packaging.

## **5.1. Legal and technical aspects**

According to the FPR Regulation, EU fertilising product '*means a fertilising product which is CE marked when made available on the market*'. Harmonised product labelling is one of the key product requirements as specified by Art 4 of the FPR. If a product meets the safety, quality and labelling requirements, it can be placed on the market according to a specific conformity assessment procedure within the meaning of Article 15 in conjunction with Annex IV to the FPR. It can be CE marked and sold freely throughout the EU and may no longer be hindered by product-related national measures and regulations, which is expressly stipulated by Article 3 of the FPR. Accordingly, no Member State may demand additional marking elements for such EU fertilising products based on its national regulations, nor may national regulations result in EU fertilising products having to be changed in their composition. The Regulation (EU) No 2019/1009 ensures a level playing field for all fertilising products and enables the free trading that is an enormous advantage for companies operating throughout the EU.

The FPR applies to a CE marked product when made available on the market. The manufacturers of fertilisers that do not bear the CE marking will still have the opportunity of marketing and selling them on their local national market (under obligation to meet the national rules for fertilising products). This means that FPR will exist in parallel to national legislation and mutual recognition. Product manufacturer will accordingly have a certain freedom of choice.

In this respect, the main drawback of harmonisation with FPR can be attributed to the fact that a potential applicant that is targeting only national market would still need to adapt to the labelling requirements adopted by the FPR.

Annex III to FPR sets out the labelling requirements for EU fertilising products. The requirements laid down in Part II and Part III of this Annex for a given PFC, as specified in Annex I, apply to EU fertilising products in all subcategories of that PFC. Part III of Annex III informs about the permissible tolerances for the declared parameters. For a better visualisation, the key differences between the labelling rules established by the FPR and currently valid EU Ecolabel criterion 12 are marked in blue. The comparison includes general labelling requirements (Part I to Annex III to FPR) and product specific labelling requirements (Part II to Annex III to FPR) that address the product function category: growing media and organic soil improvers.

Table 6. Comparison between current criterion 12 on the provision of information and FPR requirements on product labelling.

Soil improvers	EU Ecolabel		FPR	
	Mulch	Growing media	PFC 3(A):ORGANIC SOIL IMPROVERS	PFC 4: GROWING MEDIUM Growing media
<b>The name and address of the body responsible for marketing;</b>	The name and address of the body responsible for marketing;	The name and address of the body responsible for marketing;	x	x
<b>A descriptor identifying the product by type, including the wording "SOIL IMPROVER";</b>	A descriptor identifying the product by type, including the wording "SOIL IMPROVER";	A descriptor identifying the product by type, including the wording "GROWING MEDIUM";	<p>-for EU fertilising products in PFC 1 to PFC 6, the designation as indicated in Part I of Annex I of the PFC corresponding to the product's claimed function; or</p> <p>-for EU fertilising products in PFC 7, the designations as indicated in Part I of Annex I of all the PFCs corresponding to the claimed functions of the component EU fertilising products;</p>	
<b>A batch identification code;</b>	A batch identification code;	A batch identification code;	x	x
<b>The quantity (in weight);</b>	The quantity (in weight);	The quantity (in volume or number of slabs, in case of mineral wool, specifying the dimensions of the slab);	<p>the quantity of the EU fertilising product, indicated by mass or volume;</p> <p>Quantity:</p> <ul style="list-style-type: none"> <li>—for mineral wool, expressed as number of pieces and the three dimensions length, height, and width;</li> <li>—for other pre-shaped growing media, expressed as size in at least two dimensions;</li> <li>—for other growing media, expressed as total volume;</li> <li>—except for pre-shaped growing media, quantity expressed as volume of materials with a particle size greater than 60 mm, when present;</li> </ul>	
<b>Range of moisture content;</b>	Range of moisture content;	Range of moisture content;	The dry matter content expressed as % by mass shall be declared	x
<b>The main materials (those over 5% by weight) from which the product has been manufactured;</b>	The main materials (those over 5% by weight) from which the product has been manufactured;	The main materials (those over 5% by volume) from which the product has been manufactured;	<p>a list of all ingredients above 5 % by product weight in descending order of magnitude by dry weight, including the designations of the relevant CMCs as referred to in Part I of Annex II to this Regulation, where the ingredient is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008.</p>	
<b>The recommended conditions of storage and the recommended 'use by' date;</b>	x	The recommended conditions of storage and the recommended 'use by' date;	<p>recommended storage conditions;</p> <p>production date.</p>	
<b>Guidelines for safe handling and use;</b>	Guidelines for safe handling and use;	Guidelines for safe handling and use;	<p>any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment;</p>	
<b>A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);</b>	A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);	A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles);	<p>-Where the EU fertilising product contains a substance for which maximum residue limits for food and feed have been established in accordance with Regulation (EEC) No 315/93, Regulation (EC) No 396/2005, Regulation (EC) No 470/2009 or Directive 2002/32/EC, the instructions referred to in point 1(d) shall ensure that the intended use of the EU fertilising product does not lead to the exceedance of those limits in food or feed.</p> <p>-Where the EU fertilising product contains derived products within the meaning of Regulation (EC) No 1069/2009 other than manure, the following instruction shall be provided on the label: 'Farmed animals shall not be fed, either directly or by grazing, with herbage</p>	

Soil improvers	EU Ecolabel		FPR	
	Mulch	Growing media	PFC 3(A):ORGANIC SOIL IMPROVERS	PFC 4: GROWING MEDIUM Growing media
			from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days'. -Where the EU fertilising product contains ricin, the following instruction shall be provided on the label: 'Hazardous to animals in case of ingestion'. -Where the EU fertilising product contains unprocessed or processed cocoa shells, the following instruction shall be provided on the label: 'Toxic to dogs and cats'. -Where the EU fertilising product contains a polymer with the purpose of binding material in the product, as referred to in point 1(c) of CMC 9 in Part II of Annex II, the user shall be instructed not to use the product in contact with soil, and in collaboration with the manufacturer, make sure of a sound disposal of the products after end of use.	
<b>pH (reference of the test method used);</b>	pH (reference of the test method used);	pH (EN 13037);	pH	pH
<b>Organic carbon content (%), total nitrogen content (%) and inorganic nitrogen content (%) (reference to the test method used);</b>			Where the information requirements in this Annex refer to organic carbon (Corg), the information may refer to organic matter instead of or in addition to organic carbon (Corg), in accordance with the following conversion factor: <i>organic carbon (Corg) = organic matter × 0,56.</i>	
			organic carbon (Corg) content, expressed as % by mass;	x
			minimum amount of organic nitrogen (Norg), expressed as % by mass, followed by a description of the origin of the organic matter used;	—nitrogen (N) extractable by CaCl <sub>2</sub> /DTPA (calcium chloride/diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
<b>Carbon/Nitrogen ratio;</b>			the ratio of organic carbon to total nitrogen (Corg/N).	x
<b>Total phosphorus (%) and total potassium (%) (reference to the test method used) ;</b>			The following nutrients expressed as % by mass shall be declared, if exceeding 0,5 % by mass: nitrogen (N), phosphorus pentoxide (P2O5) and potassium oxide (K2O).	—phosphorus pentoxide (P2O5) extractable by CaCl <sub>2</sub> /DTPA (calcium chloride/diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 20 mg/l; —potassium oxide (K2O) extractable by CaCl <sub>2</sub> /DTPA (calcium chloride/diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
<b>For products for non-professional use, a statement about the stability of organic matter (stable or very stable);</b>	A statement about the stability of organic matter (stable or very stable), where applicable, for non-professional uses;	A statement about the stability of organic matter (stable or very stable);	x	x
<b>A statement on recommended methods of use;</b>	A statement on recommended methods of use;	A statement on recommended methods of use;	instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms;	
<b>In non-professional applications: recommended rate of application expressed in kilograms of product per unit surface area (m2) per annum.</b>	In non-professional applications: recommended rate of application expressed in mm.	For mineral growing media, a statement about the professional horticultural application.		
x	x	Electrical Conductivity (1:5 extraction);	electrical conductivity, given as mS/m;	electrical conductivity given as mS/m, except for mineral wool;
x	x	Germination inhibition (EN 16086-1);	x	x
x	x	Growth inhibition (EN 16086-1);	x	x
x	x	x	Information other than the information required under points 1 to 6: (a) shall not mislead the user, for example by attributing to the product properties that it does not possess, or by suggesting that the product possesses unique characteristics which similar products also have; (b) shall relate to verifiable factors; (c) shall not make claims such as 'sustainable' or 'environmentally	

Soil improvers	EU Ecolabel		FPR	
	Mulch	Growing media	PFC 3(A):ORGANIC SOIL IMPROVERS	PFC 4: GROWING MEDIUM Growing media
			friendly' unless such claims refer to legislation, or clearly identified guidelines, standards or schemes, with which the EU fertilising product complies; and (d)shall not make claims by means of statements or visual representations that the EU fertilising product prevents or treats plant diseases or protects plants against harmful organisms.	
x	x	x	The phrase 'poor in chloride' or similar may only be used if the chloride (Cl-) content is below 30 g/kg of dry matter.	
x	x	x	Where the nutrient content information requirements in this Annex are expressed in oxidised form, the nutrient content may be expressed in elemental form instead or in addition to the oxidised form in accordance with the following conversion factors:  phosphorus (P)= phosphorus pentoxide (P2O5) × 0,436; potassium (K)= potassium oxide (K2O) × 0,830; calcium (Ca)= calcium oxide (CaO) × 0,715; magnesium (Mg)= magnesium oxide (MgO) × 0,603; sodium (Na)= sodium oxide (Na2O) × 0,742; sulphur (S)= sulphur trioxide (SO3) × 0,400.	

Source: (EC 2019, EC 2015)

From the table above it can be subtracted that the provision on a product labelling established by FPR is much broader than that laid down under criterion 12. The labelling rules under FPR addresses all fertilising product categories, whereas EU Ecolabel refers only to soil improvers and growing media. The accommodation of FPR labelling requirements under EU Ecolabel needs to be further cross-checked.

Of high relevance is that FPR requires provision of information on the product chemical profile (point 3-7, 9-10, see **Error! Reference source not found.** 1). Part III of Annex III to FPR also indicates the acceptable tolerances for the declared parameters. There is no specific reference to the test method, given that

The FPR does not specifically require the inclusion of: (1) The name and address of the body responsible for marketing; (2) A batch identification code; (3) germination inhibition and growth inhibition. It is to be clarified if the information included in point (3) are of additional value for the end-user.

In aim to support the policy harmonisation, it is considered relevant to accommodate under the scheme these products that are CE labelled in the product function category: soil improvers and growing media. For this reason, and ahead of all, it is proposed to harmonise the criterion's formulation with specification established by Regulation. This will simplify the compliance check and will establish the base to the consider CE marked product as deemed to comply.

## 5.2. Optional proposals for the revision of criterion 12 (provision of information) :

### Option I

The basic objective is to harmonise product labelling with the rules established by the FPR for the given product category, as follows:

This criterion applies to growing media, soil improvers, and mulch

The information on the product shall be provided in accordance with labelling requirements specified in Part I and II of Annex III to Regulation (EU) 2019/1009<sup>36</sup> for a given product function category soil improvers or growing media, as applicable, as defined in Part I of Annex I to this Regulation.

For mineral growing media, the provision of information shall include a statement about the professional horticultural application.

The information shall be provided with the product either on the packaging or in accompanying fact sheets or in the technical documentation, which accompanies the product.

The EU Fertilising product in the meaning of Regulation (EU) 2019/1009 shall be deemed to comply with the requirement.

**Assessment and verification:** *The applicant shall provide a declaration of compliance with this criterion, supported by a high resolution image of the product packaging that clearly shows the information written on the packaging, or a copy of accompanying fact sheets, or technical documentation that accompanies the product.*

*For EU fertilising product, the applicant shall provide a declaration of compliance with this criterion declaring that the product is CE marked and satisfied the applicable labelling requirements of Regulation (EU) 2019/1009. This shall be supported by a high resolution image of the product packaging that clearly shows CE marking together with the information written on the packaging, or copy of the accompanying fact sheets, or technical documentation that accompanies the product. Alternatively, an applicant can provide technical documentation that shall make it possible to assess the EU fertilising product's conformity with the relevant requirements, and shall include an adequate analysis and assessment of the risk(s).*

Referring to the rules established by FPR would simplify the verification of the criterion for these applicants whose product is CE marked. The mutual recognition would proportionate additional time-saving for the verification body.

## Option II

Another possibility is to withdraw Criterion 12 and to ensure the provision of information in line with labelling requirements specified under Annex III to FPR. This could be introduced in the preamble to the Annex of the revised Commission Decision that establishes the criteria for growing media, soil improvers, and mulch, as follows:

*(...) For EU fertilising product, the manufacturer shall affix the CE marking to each individual packaging of the EU fertilising product that satisfies the applicable requirements of the Regulation (EU) 2019/1009, or, where it is supplied without packaging, in a document accompanying the EU fertilising product. The manufacturer shall establish the technical documentation. The documentation shall make it possible to assess the EU fertilising product's conformity with the relevant requirements, and shall include an adequate analysis and assessment of the risk(s) (...). Non - EU fertilising product shall comply with the labelling requirements established by Regulation (EU) 2019/1009 and specified in Part I and II of Annex III to this Regulation. .*

The withdrawal of criterion 12 and incorporation of the requirement on the information provision into the preamble of the Annex to the Commission Decision, seems a good alternative to support implementation of EU-unified labelling rules. Similarly, to Option I, this could also generate several noticeable benefits to an applicant, verification body and an end-user, among them:

- Simplification of the criteria and removal of additional administrative burden for an applicant by the mutual recognition of CE marking
- Reduction of CBs workload if control mechanisms are fully or partially implemented at the EU level.
- Supporting FPR implementation towards the unification of EU fertilizer product labelling scheme.
- Consumer receives information in the “standardised” form.

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<sup>36</sup> Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003. OJ L 170, 25.6.2019, p. 1–114

### Option III

Alternatively, it is also possible to list these FPR labelling requirements that correspond to the currently valid criterion (see Table 1). It needs to be stressed that the further inclusion or exclusion of information that is required should be a subject of consultation with stakeholders.

In this line, Option III considers harmonisation with FPR by listing these aspects of the information provision that are placed in the currently valid criterion 12, and correspond to the labelling requirements terminology established by Part I and II of Annex III to Regulation (EU) 2019/1009. The request to include batch identification code is not incorporated into the requirements of FPR, it is therefore proposed to be omitted. Accordingly, Option III considers only harmonisation of the wording mainly to open the door for the mutual recognition for EU fertilising products (CE marked), as follows:

*This criterion applies to growing media, soil improvers and mulch.*

*12.1. The following general information shall be provided with the product either on the packaging or in accompanying fact sheets or technical documentation.*

- (a) The name and address of the body responsible for marketing;*
- (b) The designation of the PFC corresponding to the product's claimed function as indicated in Part I of Annex I to Regulation (EU) 2019/1009*
- (c) Unless separately specified, the quantity of the EU fertilising product, indicated by mass or volume;*
- (d) A list of all ingredients above 5 % by product weight in descending order of magnitude by dry weight, including the designations of the relevant CMCs as referred to in Part I of Annex II to Regulation (EU) 2019/1009; where the ingredient is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008.*
- (e) Recommended storage conditions;*
- (f) Instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms;*
- (g) Electrical conductivity given as mS/m, except for mineral wool;*
- (h) Any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment;*
- (i) Where the EU fertilising product contains a substance for which maximum residue limits for food and feed have been established in accordance with Regulation (EEC) No 315/93, Regulation (EC) No 396/2005, Regulation (EC) No 470/2009 or Directive 2002/32/EC, the instructions referred to in point 1(d) shall ensure that the intended use of the EU fertilising product does not lead to the exceedance of those limits in food or feed.*
- (j) Where the EU fertilising product contains derived products within the meaning of Regulation (EC) No 1069/2009 other than manure, the following instruction shall be provided on the label: 'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'*
- (k) Where the EU fertilising product contains ricin, the following instruction shall be provided on the label: 'Hazardous to animals in case of ingestion.'*
- (l) Where the EU fertilising product contains unprocessed or processed cocoa shells, the following instruction shall be provided on the label: 'Toxic to dogs and cats.'*
- (m) Where the EU fertilising product contains a polymer with the purpose of binding material in the product, as referred to in point 1(c) of CMC 9 in Part II of Annex II, the user shall be instructed not to use the product in contact with soil, and in collaboration with the manufacturer, make sure of a sound disposal of the products after end of use.*
- (n) Where the information requirements in this Annex refer to organic carbon (Corg), the information may refer to organic matter instead of or in addition to organic carbon (Corg), in accordance with the following conversion factor:*
- (o) organic carbon (Corg) = organic matter × 0,56.*

*12.2. For soil improvers including mulch., product specific information shall be included*

- (a) The dry matter content expressed as % by mass shall be declared*
- (b) Organic carbon (Corg) content, expressed as % by mass;*
- (c) Organic carbon (Corg) content, expressed as % by mass;*
- (d) Minimum amount of organic nitrogen (Norg), expressed as % by mass, followed by a description of the origin of the organic matter used;*
- (e) The ratio of organic carbon to total nitrogen (Corg/N).*

- (f) The following nutrients expressed as % by mass shall be declared, if exceeding 0,5 % by mass: nitrogen (N), phosphorus pentoxide (P2O5) and potassium oxide (K2O).

12.3. For growing media, product specific information shall be included

- (a) Quantity:  
—for mineral wool, expressed as number of pieces and the three dimensions length, height, and width;  
—for other pre-shaped growing media, expressed as size in at least two dimensions;  
—for other growing media, expressed as total volume;  
—except for pre-shaped growing media, quantity expressed as volume of materials with a particle size greater than 60 mm, when present;
- (b) Production date;
- (c) Nitrogen (N) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
- (d) Phosphorus pentoxide (P2O5) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 20 mg/l;
- (e) Potassium oxide (K2O) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
- (f) For mineral growing media, the provision of information shall include a statement about the professional horticultural application

**Assessment and verification:** The applicant shall provide a declaration of compliance with this criterion, supported by a high resolution image of the product packaging that clearly shows the information written on the packaging, or a copy of accompanying fact sheets, or technical documentation that accompanies the product.

For EU fertilising product, the applicant shall provide a declaration of compliance with this criterion declaring that the product is CE marked and satisfied the applicable labelling requirements of Regulation (EU) 2019/1009. This shall be supported by a high resolution image of the product packaging that clearly shows CE marking together with the information written on the packaging, or copy of the accompanying fact sheets, or technical documentation that accompanies the product. Alternatively, an applicant can provide technical documentation that shall make it possible to assess the EU fertilising product's conformity with the relevant requirements, and shall include an adequate analysis and assessment of the risk(s).

#### Option IV

No changes

#### Question:

Which is the most appropriate option for the revision of criterion 12 on provision of information)

## 6. Presentation of the result from the survey on heavy metal contents in the EU Ecolabelled product

The validity of criterion 5.1. (Limits for Heavy metals) as to the reference values for each element and required test methods needs to be analysed and tailored to fit the EU fertilising product policy and best practices approach. On that account, the primary intention of the revision is to establish the PTEs' reference values that, to the state of knowledge, are assumed as safe for the environmental and health, and that, as a minimum, meet mandatory legal requirements established by Fertilising Product Regulation (FPR).

### 6.1. Brief explanation of legal and technical aspects

One of the objectives of the EU Fertilising Product Regulation is to maximize the incorporation of the secondary raw materials into the EU fertilisers market and so to save on the primary raw materials. This approach enables composts and digestate products to access, in form of organic fertilisers and soil improvers, the EU internal market so that they can compete on an equal level with mineral fertilisers. Classification of compost and digestate as a component of EU fertilizing product accommodates the overall principle of Article 6 (1) and (2) of

the Waste Framework Directive (EC, 2008)<sup>37</sup>, according to which certain specified waste ceases to be waste when it has undergone a recovery operation (including recycling) and complies with specific criteria. The concept of zero production of waste in 2030 can lead to an increased re-use in agriculture of various product groups, and applying or recycling of waste materials will thus become increasingly important. However, the level of contaminants in fertilizers must be restricted because accumulation in time may lead to adverse effects including excess uptake by arable crops, leaching to groundwater or impact on the soil ecosystem.

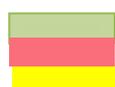
Quality requirements for specific fertilizing product, such as the maximum allowed limit values for heavy metals (cadmium, chromium, mercury, nickel, lead and arsenic) for each Product Function Category (PFC), among them organic and inorganic soil improvers (PFC 3(A) and PFC3(B)) and growing media (PFC 4) are specified in Annex I Part 2 to the Fertilizing Product Regulation. For compost and digestate products, the FPR requirements are, similarly to the criteria under revision, largely based on the End of Waste Criteria for Biodegradable Waste Subjected to Biological Treatment (JRC, 2014)<sup>38</sup>. In addition to requirements covering the production process and product quality, only separately collected organic waste is permitted as input materials for composting and anaerobic digestion.

## 6.2. Analysis of the ambition level of the currently valid criterion 5.1

Table 7. Maximum allowed limits for heavy metals content in a fertilizing product established by FPR and EU Ecolabel.

Product	Soil Improvers			Growing media	
	Fertilizing Product Regulation		Current EU Ecolabel criterion	Fertilizing Product Regulation	Current EU Ecolabel criterion
Contaminant/Maximum content in the product	PFC 3(A) Organic SI [mg/kg DM]	PFC 3(B) Inorganic SI [mg/kg DM]	Criterion 3.5(a) SI, M and organic constituents of GM [mg/kg DW]	PFC 4: GROWING MEDIUM [mg/kg DM]	Criterion 3.5(b) GM [mg/kg DW]
Cadmium Cd	2	1.5	1	1.5	3
Chromium Cr	2 (Cr (Vi))	2 (Cr (Vi))	100 (total Cr): <i>NOT DIRECTLY COMPARABLE</i>	2 (Cr (Vi))	150 (total Cr): <i>NOT DIRECTLY COMPARABLE</i>
Copper Cu	300	300	100	200	100
Mercury Hg	1	1	1	1	1
Nickel Ni	50	100	50	50	90
Lead Pb	120	120	100	120	150
Zinc Zn	800	800	300	500	300
Inorganic arsenic (As)	40	40	x	40	x

### Legend:



- EU Ecolabel reference value is more restrictive than PFC3 or PFC4 threshold value
- EU Ecolabel reference value is less restrictive than PFC3 or PFC4 threshold value
- EU Ecolabel reference value is equal to PFC3 or PFC4 threshold value.

Source: EC 2019, and EC 2015

<sup>37</sup> Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. OJ L 312, 22.11.2008, p. 3–30

<sup>38</sup> JRC, 2014. Saveyn, H. and Eder, P. End-of-waste criteria for biodegradable waste subjected to biological treatment (compost & digestate): Technical proposals. European Commission. Joint Research Centre. Institute for Prospective Technological Studies. doi:10.2791/6295

Table 7. compares the maximum allowed limits values for heavy metals content in a fertilizing product established by FPR and EU Ecolabel<sup>39</sup>. For the analysis of Soil improvers category, the UE Ecolabel requirements were contrasted with values settled down under Product Function category PFC 3(A) - Organic Soil Improvers (EC, 2019). In line with FPR “*organic soil improver shall contain 20 % or more dry matter. Organic carbon (Corg) content in an organic soil improver shall be at least 7,5 % by mass*”. Following currently valid Criterion 8 (Organic matter and dry matter), soil improvers and mulch should contain at least 15 % dry weight (% DW) of the organic matter as loss on ignition of the final product and dry matter content of the final product shall be at least 25 % of the fresh weight (% FW). Additionally, EU Ecolabel criteria defines ‘soil improver’ as a *material added to soil in situ whose main function is to maintain or improve its physical and/or chemical and/or biological properties, with the exception of liming material*. Altogether, the current scope of the product group generally targets organic soil improvers, and hence the comparison with PFC3(A) category seems justified.

For soil improvers, mulch and organic constituents of growing media the EU Ecolabel ambition level for heavy metals content is on average equal or higher when referring to the FPR limits. In the most favorable case (Copper), the EU Ecolabel reference value is 3 times lower for soil improvers, and 2 times lower for growing media than the maximum permitted content established by FPR. For Growing media in the most unfavorable cases, the ambitious level of EU Ecolabel for maximum allowed content of cadmium, nickel, and lead is 100, 80, and 25%, respectively, lower than FPR limits, and therefore requires further revision.

### 6.3. Analysis of the performance of currently licensed products

To evaluate the performance of currently licensed products and cross check the validity and stringency of applicable limit values, data were collected from 26 licensed soil improvers, mulches and organic components of growing media (Criterion 3.5(a)), and from 5 growing media products, including mineral growing media (2 products) (Criterion 3.5(b)). Table 9 summarises the information collected, whereas Figure 1 and Figure 2 illustrate the overall PTEs performance of licensed products (SI and GM) as of 2020, and compare the PTEs content with the requirements established by currently valid EU Ecolabel criteria for the product group, and FPR. The figures systematise data collected, with each element being visualised separately and allocated to a specific product.

Table 8. Analysis of the PTEs content in the EU Ecolabel product contrasted with EU Ecolabel limit values (as of 2020)

PTEs	Soil improvers, mulches and organic components of growing media [mg/kg DW]			Growing media [mg/kg DW]		
	Mean	Range (min-max)	EU Ecolabel threshold [mg/kg DW]	Mean	Range (min-max)	EU Ecolabel threshold [mg/kg DW]
<b>Cadmium (Cd)</b>	0.28	0.04-0.60	1	0.14	0.01 - 0.23	3
<b>Mercury (Hg)</b>	0.09	0.01- 0.50	1	0.013	0.002-0.021	1
<b>Nickel (Ni)</b>	4.93	0.20- 20.50	50	2.81	2.11 - 4.12	90
<b>Lead (Pb)</b>	9.74	0.16 - 46.0	100	3.43	0.4 - 5.51	
<b>Zinc (Zn)</b>	51.77	4.5 - 202.0	300	33.47	30.7 - 38.1	

Source: Internal survey

*Note:* Due to the high level of aggregation of products with different origin (i.e. bio waste derived products with forestry material), broad data distribution and limited number of sample information collected should only be treated indicatively<sup>40</sup>. Similarly, the extrapolation of information on growing media, based on

<sup>39</sup> *Note:* the unit established by FPR is kg per dry mass, and by EU Ecolabel kg per dry weight. The units are considered equivalent

<sup>40</sup> The limited number of samples and the level of differences between products do not allow application of reliable statistical analysis (i.e. for Hg content in SI). The standard deviation indicates the negative confidence interval for the mean. Standard deviation of a sampling distribution is its standard error. It measures variability in a data set informing about to which extent the individual numbers in the set are different from each other.

the performance of 5 samples (3 organic growing media, and 2 mineral growing media) should only be used as an additional asset for the criteria evaluation.

It is important to stress that for soil improvers, mulches and organic components of growing media Products No 5 to 10 represent compost based on bio-waste from a separate collection, whereas other products refer to mulches or organic components of growing media such as i.e. hazelnut shells. The high concentrations of heavy metals in compost depend mainly on the chemical composition of the initial feedstocks. Ehlert et al (2013)<sup>41</sup> compiled information on the composition of fertilisers most commonly used in the Netherlands, concluding that: (...) *When considering all organic waste materials, animal manure is the main source of copper, zinc, mercury, nickel, chromium and arsenic in the total load to soils. Zinc and copper mainly originate from additives in feed; in addition to this copper in waste from hoof disinfection baths is the second most important source but remains poorly quantified. Compost is the main source of lead but also significantly contributes to the total load of arsenic, chromium, nickel, mercury and zinc. Mineral fertilisers are the main source of cadmium (...)* It is also well ascertained that municipal solid waste composts are rich in heavy metals and, among them, Zn, Pb, and Cu are generally present in the largest amounts (Smith 2009)<sup>42</sup>. Abundant number of studies confirm that the higher concentration of heavy metals in compost is not necessarily proportional to their uptake by a plant. The addition of compost to the growing substrate tends to reduce the metal bioavailability through pH increase (Paradelo et al. 2020<sup>43</sup>, Ostos et al, 2008<sup>44</sup>, Mininni et al. 2015<sup>45</sup>, Castaldi 2004). Possibly, high pH is related to the higher content of alkaline elements in compost (Mininni et al. 2015).

All in all, data collected indicate a very good overall performance of the licensed products as to the requirements of criterion 5.1(a), and (b), as they are far below the mandatory limits.

For the most favourable case, almost 81% of SI products (21 data points) contain mercury in the range of 0,01 – 0.33 mg Hg/kg DW that, when referring to the upper data range, is 77% beneath the EU Ecolabel limit value, whereas for GM the maximum reported Hg content is of 0.021 mg/kg DW.

The least favourable case has been observed for cadmium content in SI. The 38% of products (10 samples) situates in the range of 0.208 – 0.378 mg Cd/kg DW that, when referring to the upper data range, is 62% beneath the EU Ecolabel limit value, whereas 23% of products contain cadmium in the range of 0.378 – 0.718 mg Cd/kg DW. For growing media the least favourable value of Cd content corresponds to 0.23 mg Cd/kg DW. Still, the reported values for SI and GM are below the maximum Cadmium limit of <1,5 mg/kg that FPR applies for organic soil improvers and growing media. The current EU Ecolabel limit for SI (1.0 mg /kg) might therefore be considered as a guarantee of product quality and safety.

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<sup>41</sup> Ehlert, P.A.I., L. Posthuma, P.F.A.M Römkens, R.P.J.J. Rietra, A.M. Wintersen, H. Van Wijnen, T.A. van Dijk, L. van Schöll, J.E. Groenenberg (2013). Appraising Fertilisers: Origins of current regulations and standards for contaminants in fertilisers; Background of quality standards in the Netherlands, Denmark, Germany, United Kingdom and Flanders. Wageningen, Wettelijke Onderzoekstaken Natuur & Milieu, WOt-werkdocument 336. 128 p.

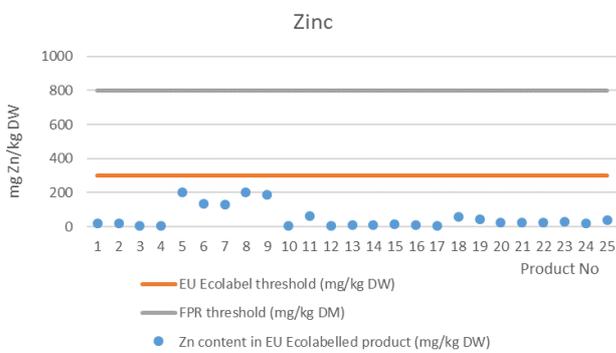
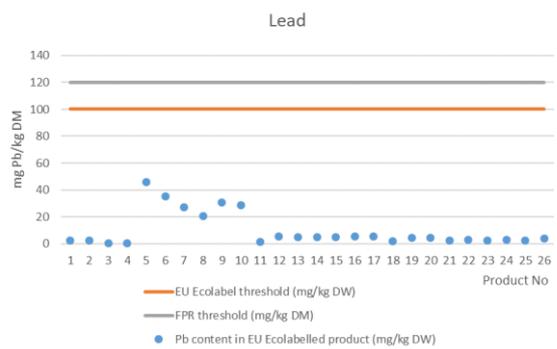
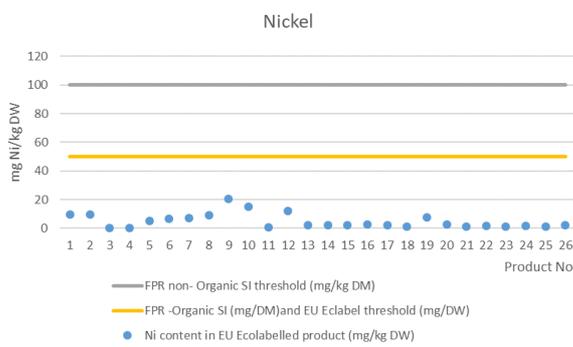
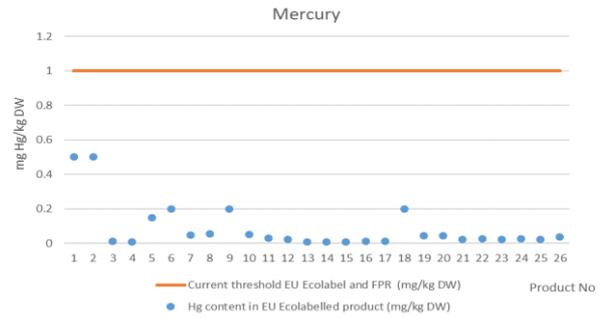
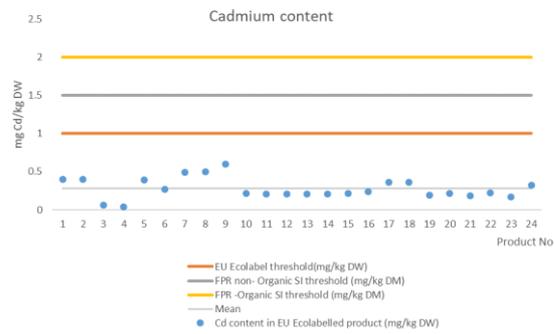
<sup>42</sup> Smith, S.R. 2009. A critical review of the bioavailability and impacts of heavy metals in municipal solid waste composts compared to sewage sludge. *Environment International* 35, 142–156.

<sup>43</sup> Paradelo, R., Villada, A. Barral, M.T. 2020. Heavy Metal Uptake of Lettuce and Ryegrass from Urban Waste Composts. *International Journal of Environmental Research and Public Health* 17, 2887, doi:10.3390/ijerph17082887

<sup>44</sup> Ostos, J.C., López-Garrido, R., Murillo, J.M., López, R. 2008. Substitution of peat for municipal solid waste- and sewage sludge-based composts in nursery growing media: Effects on growth and nutrition of the native shrub *Pistacia lentiscus* L. *Bioresource Technology* 99 (6), p 1793-1800, doi.org/10.1016/j.biortech.2007.03.033

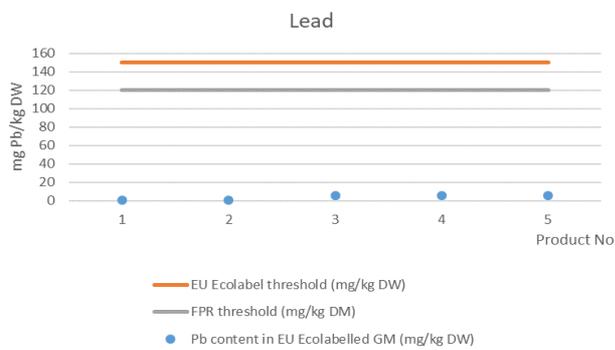
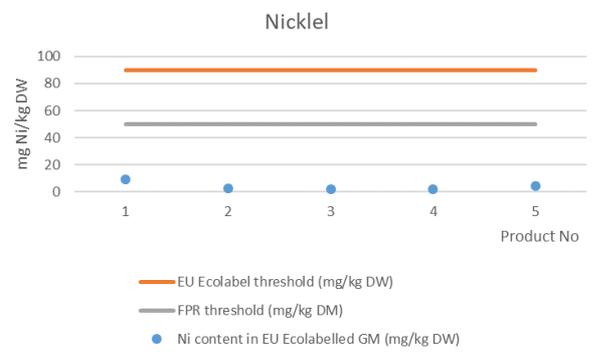
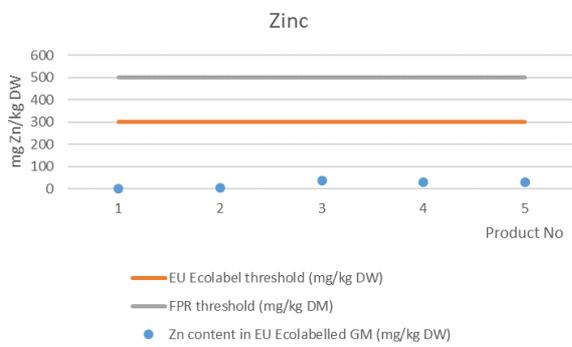
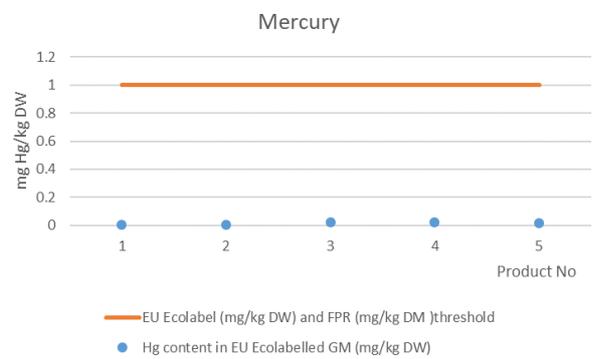
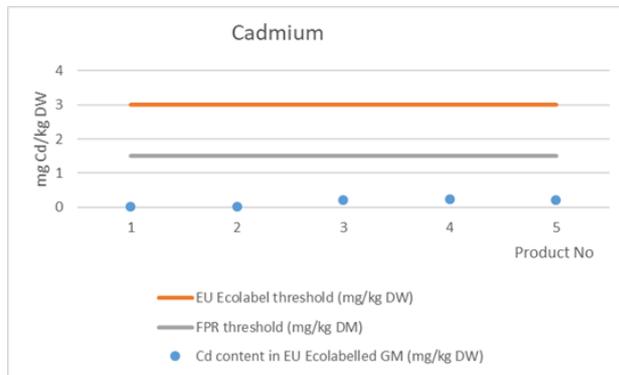
<sup>45</sup> Mininni G., Blanch A.R., Lucena F., Berselli S., 2015. EU policy on sewage sludge utilization and perspectives on new approaches of sludge management. *Environ. Sci. Pollut. Res.*, 22, p. 7361- 7374.

Figure 1. Analysis of the PTEs content in EU Ecolabel licensed soil improvers, mulches and organic components of growing media contrasted with the currently valid EU Ecolabel reference values and requirements of Fertilizing Product Regulation



Source: Internal questionnaire

Figure 2. Analysis of the PTEs content in EU Ecolabel licensed growing media contrasted with the currently valid EU Ecolabel reference values and requirements of Fertilizing Product Regulation



Source: Internal questionnaire

## 6.4. Assessment and verification

The rule applied within the former revision was to require the CEN/TC 223 standards for the criterion verification, unless there is no CEN/TC 223 standard for the parameter to be tested (e.g. Hg limit value).

The European Standard EN 13650 (Soil improvers and growing media - Extraction of aqua regia soluble elements) specifies a method for the routine extraction of aqua regia soluble elements from soil improvers or growing media. The Standard declares that aqua regia will not totally dissolve most soil improvers or growing media, and the efficiency of extraction for particular elements differs from element to element. Such efficiency might also differ for the same element in different matrices. Elements extractable in aqua regia cannot therefore, be described as "Totals"; conversely they cannot be regarded as the "bio-available" fraction, as the extraction procedure is too vigorous to represent any biological process<sup>46</sup>. For mineral constituents in growing media, based on the above information and being supported by stakeholders input, the extraction method proposed for mineral growing media was EN 13651 (Soil improvers and growing media - Extraction of calcium chloride/DTPA (CAT) soluble nutrients and elements). Commission Delegated Regulation<sup>47</sup> introduces a specific derogation to the limit value for nickel (Ni) in a growing medium totally composed by mineral constituents and offered for professional use in horticulture, green roofs or green walls, shall apply to the bioavailable content of the contaminant. **This means that the NI content monitoring in mineral growing media should follow EN 13651 methodology. All other metals should however be analysed in line with EN 13650.**

The European Standard EN 16175 (Sludge, treated biowaste and soil - Determination of mercury) specifies a method for the determination of mercury in aqua regia or nitric acid digests of sludge, treated biowaste and soil, obtained according to EN 16173 or EN 16174 using cold-vapour atomic fluorescence spectrometry (CV-AFS). The lower working range limit is 0,003 mg/kg (dry matter basis).

Most stakeholders that participated in the Assessment of the criteria validity conducted via survey in October 2020 asked for ensuring the high level of consistency between EU Ecolabel criteria and the Fertilising Products Regulation. This includes harmonising with EN standards developed/being developed/being revised by CENTC 223.

Table 9. Revised test methods for the PTEs content verification

PTE	Symbol	Method of measurement	Method of extraction
<b>Cadmium</b>	Cd	EN 13650	For soil improvers, mulch, organic constituents of growing media and growing media, except for nickel content in mineral growing media  EN 13650 Soil improvers and growing media - Extraction of aqua regia soluble elements  <u>For the analysis of nickel content in mineral growing media</u>  EN 13651 Soil improvers and growing media - Extraction of calcium chloride/DTPA (CAT) soluble nutrients and elements
<b>Chromium (total)</b>	Cr	EN 13650	
<b>Copper</b>	Cu	EN 13650	
<b>Mercury</b>	Hg	EN 16175	
<b>Nickel</b>	Ni	EN 13650	
<b>Lead</b>	Pb	EN 13650	
<b>Zinc</b>	Zn	EN 13650	

<sup>46</sup> <https://www.en-standard.eu/csn-en-13650-soil-improvers-and-growing-media-extraction-of-aqua-regia-soluble-elements/>

<sup>47</sup> Pendant to be officially published in the Official Journal

Last but not least, the Regulation as part of the labelling system requires referencing to the relevant harmonised standards or to the common specifications used or references to the other technical specifications in relation to which conformity is declared. Indeed, The European standardisation organisations (CEN) is developing harmonised standards for testing methods to accompany FPR implementation and CE-Mark validation. The work is on-going but the adoption of those standards by CEN should be set whenever it is technically feasible before the date of the adoption of the Regulation. Otherwise, if for technical reasons it is not deemed feasible to develop a harmonised standard before 16 July 2022, CEN will adopt technical specifications in the form of European standardisation deliverables as a first step. These specifications could help manufacturers to prove conformity of their products with requirements of the Regulation until harmonised Standards can be developed.

For the above-mentioned reasons the test methods indicated under assessment and verification are targeted to be fully harmonised with the requirements established by FPR and on-going work of the CEN Technical Committee.