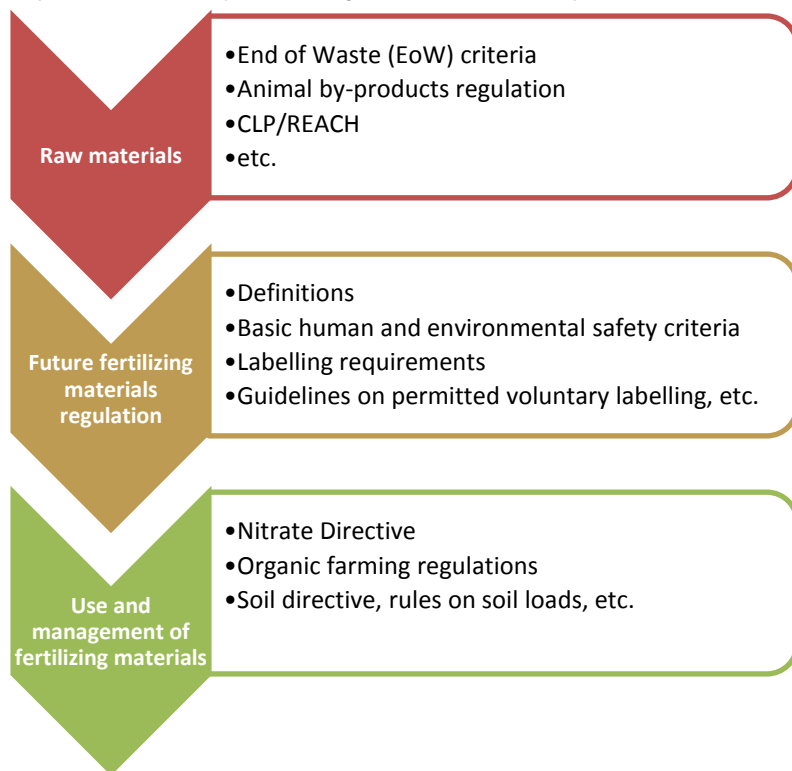


V8, 27 May 2014

ECOFI Responses and Proposals for Quality and Safety Criteria for Organic Fertilizers, Organic Soil Improvers and Organo-Mineral Fertilizers

ECOFI was created in March 2014 to represent the European producers of organic fertilizers, organo-mineral fertilizers and organic soil improvers. ECOFI's 14 members together account for roughly 60% of the European market in these products, which is worth about 250 million euros. ECOFI members are active in most European countries and also export or are active in many other countries, including the Mediterranean region and the Middle East. ECOFI is open to any European producer in the sector whose production fully ensures the upstream traceability and the origin of raw material components. Relevant associations are eligible to become affiliates.



Below, we have outlined our comments on the key issues regarding organic fertilizers, organic soil improvers and organo-mineral fertilizers and, providing the justification for the various positions taken.

As a reminder, in keeping with the scope of the future fertilizers regulation, these comments focus on the topics that are specifically related to the placing on the market of final products. Neither upstream requirements regarding safe and appropriate raw materials and downstream instruments related to the management of nutrients, etc. are included in these comments.

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ORGANIC FERTILIZERS AND ORGANIC SOIL IMPROVERS: DEFINITIONS AND QUALITY CRITERIA

Organic fertilizers and soil improvers are complementary products. While they share some common characteristics due to the presence of organic carbon, their vocation is different: the main function of organic fertilizers is to provide nutrients while the main function of organic soil improvers is to modify non-nutritive soil characteristics. It is therefore helpful to consider their definitions and quality criteria side by side.

	ORGANIC FERTILIZERS		ORGANIC SOIL IMPROVERS	Comments
	Solid	Liquid		
Definitions	ECOFI proposes to modify the Commission's proposal: "Organic fertiliser means a fertiliser whose main function is to provide nutrients under organic forms which consists of from organic materials of plant and/or animal origin."		ECOFI supports the Commission proposal: "Organic soil improver means a soil improver containing carbonaceous materials of plant and/or animal origin, whose main function is to maintain or increase the soil organic matter content"	It is important to differentiate the main target of an organic fertilizer and a soil improver. Soil improvers, by the proposed definition, should maintain or increase the organic matter content in soils but should not be rich in nutrients (including when the (higher) quantity used per hectare is taken into account). An organic fertilizer is meant to feed plants, so it is important that there is a minimum threshold for nutrients. This specification avoids misunderstanding for the farmer and misuse of agronomical terms. Specifying the origin of the nutrients in the definition of organic fertilizers is critical to distinguish from an organo-mineral fertilizer or a mixture of inorganic nutrients with an organic soil improver.
Minimum dry matter	40%	No minimum	40%	Minimum dry matter is necessary for several reasons: <ul style="list-style-type: none"> ○ It is an additional quality criterion that limits water content; ○ It is an additional criterion to help ensure that the raw materials used meet minimum safety

	ORGANIC FERTILIZERS		ORGANIC SOIL IMPROVERS	Comments
	Solid	Liquid		
				<p>standards;</p> <ul style="list-style-type: none"> ○ There is no such thing as a liquid soil improver, so it is not necessary to set a minimum for liquid organic fertilizers; ○ It is technically difficult to apply very humid products, reducing their practical value for farmers.
<p>Minimum organic Carbon content (expressed as % of the total packaged weight)</p>	15%	5%	10%	<p>Organic C is preferable to organic matter because its analytical determination is more precise (a simple, repeatable and inexpensive analytical method exists).</p> <p>ECOFI is aware that the TWG 2012 decided that minimum quality requirements should be expressed on dry matter. However, doing so is problematic for post-marketing surveillance of quality. Because humidity levels are affected by storage conditions, it is not unlikely that the humidity level of a product could change enough in the distribution chain for a product to be compliant with quality standards expressed in dry matter when placed on the market, but no longer be compliant by the time the product reaches the end user (or is controlled by authorities during post-marketing surveillance). Furthermore, classification by minimum value on dry matter could result in two products with the same declared real nutrient content being in two different categories because of significantly different humidity levels. (See the simulation below.)</p> <p>The lower minimum C_{org} threshold for organic soil</p>

	ORGANIC FERTILIZERS		ORGANIC SOIL IMPROVERS	Comments
	Solid	Liquid		
				improvers is due to the high humidity of manure and unprocessed products and ECOFI's position that product categorization for organic-based products should be based on product weight not dry matter to ensure coherent classification.
Nutrient content (expressed as % of the total packaged weight)	$\geq 2,5\% N_{tot}$ and/or $\geq 2\% P_2O_5_{tot}$ and/or $\geq 2\% K_2O_{water\ soluble}$	$\geq 2\% N_{tot}$ and/or $\geq 1\% P_2O_5_{tot}$ and/or $\geq 2\% K_2O_{water\ soluble}$	$< 2,5\% N_{tot}$ and $< 2\% P_2O_5_{tot}$ and $< 2\% K_2O_{water\ soluble}$	Crossing the threshold of any of three main nutrients should classify a product as an organic fertilizer. To be called an organic soil improver, the product must be below all three nutrient thresholds. A clear threshold helps the user understand the utility of the products. Since soil improvers only exist in sold form, it is not problematic that the thresholds for liquid organic fertilizers are slightly lower.
Minimum N_{org} (expressed as % of the total packaged weight)	2%	1%	No minimum but the value must be declared on the label	The presence of organic N is important to demonstrate that a product is organic. However, having a legal requirement that is high encourages fraud because N cycles rapidly between organic and inorganic forms (leading to highly variable levels of N_{org} in raw materials). While there is an agreed European analytical method for measuring N_{org} , it cannot distinguish between N_{inorg} originating from mineral fertilizers and N_{inorg} from the mineralization of organic-based products. The compromise solution could be the combination of a low legal threshold combined with label declarations of the minimum amount the manufacturer believes it can guarantee and the list of raw materials to demonstrate that organic sources of nutrients have indeed been used.

	ORGANIC FERTILIZERS		ORGANIC SOIL IMPROVERS	Comments
	Solid	Liquid		
C_{org}/N_{org} ratio	No minimum or maximum but the value must be declared on the label			Many Member States use C _{org} /N _{org} ratio to classify the fertilizers because they need to have information about the mineralization of the organic part of the fertilizers.
Granulometry for powder forms	To be considered a powder, at least 90 % of a product must be able to pass through a sieve with a mesh of 10 mm	N/A	To be considered a powder, at least 90 % of a product must be able to pass through a sieve with a mesh of 10 mm	

Arguments supporting the ECOFI proposals:

- In addition to the post-marketing surveillance issues cited above, indicating minimum nutrient contents as a percentage on the weight of the final product and not expressed as a percentage of dry matter is important to coherent categorization of the product.

Example: Two products containing 1,8 % N by product weight:

- If one product contains 90% dry matter, it would contain 2% N on dry matter. This product would be classified as an organic soil improver according to the TWG's recommendation to use values on dry matter for categorization and a threshold value of N=2,5%.
- If the other product contains 50% dry matter, it would contain 3,6% N on dry matter and be classified as an organic fertilizer.

Both products would have the same amount of N per unit of product, yet be classified in different product categories! This aberration undermines the role of the product categories to indicate the main functional use of products. The main function of organic-based products can only be determined in the form that it is actually applied given the highly variable level of humidity and the potentially large deviations between values as a percentage of dry weight and values as a percentage of product weight.

Today, similar situations create confusion where the per unit content is often not specified in the commercial documentation, leading farmers to believe that the product with 3,6% N on dry matter is better, when he or she is actually worse off with the 3,6% product because he or she is buying 50 kg of water for every 100 kg of product (with all the negative knock-on sustainability effects that entails).

For organic-based products, it would therefore be more straightforward to classify the products according to their nutrient content per product weight.

- Recommended storage conditions should be specified on the label to minimize evaporation and foster stable proportions as a percent of final product weight;
- Organic C is preferable to organic matter because its analytical determination is more precise (a simple, repeatable and inexpensive analytical method exists).

ORGANO-MINERAL FERTILIZERS

DEFINITION

ECOFI proposes the following definition of organo-mineral fertilizers to replace the Commission's proposed definition:

"Organo-mineral fertilizer means a complex fertilizer¹ obtained by industrial co-formulation of one or more inorganic fertilizers with one or more organic fertilizers and/or organic soil

¹ The definition of a "complex organo-mineral fertilizer" would differ slightly from a complex mineral fertilizer in that it would be possible to have only one major nutrient (N) present as long as it was formulated into a complexed product with one or more organic fertilizers. ECOFI would recommend that this exception to the definition of "complex fertilizer" be specified in the future regulation.

improvers into solid forms (with the exception of dry mixes) or liquids. In the final product, the organic C and the mineral nutrients must be present in each unit.”

Other approved fertilizing materials, besides primary nutrients and organic C, may also be included in the final product but are not part of the characterization of what determines an organo-mineral fertilizer.

This definition would contrast with blends where different raw materials are still clearly distinguishable from one another (see images of sample products below) and different units of the products have different Specific Weights. Powders are not included in the list of acceptable forms of organo-mineral fertilizers because they would be blends/dry mixes.

The co-presence of organic C and nutrients in each unit of an organo-mineral fertilizer is an easily controllable criterion for post-marketing surveillance, whereas no such criterion exists for powders.

The reference to “inorganic fertilizers, organic fertilizers and organic soil improvers” as the raw materials is intended to indicate the need for a certain level of screening of raw materials to prevent a situation where an organo-mineral formulation is produced for the sole purpose of diluting a raw material containing excessive levels of pollutants. Each raw material should meet the same requirements for contaminants and pollutants as final products of the same nature. This is currently the approach in several EU members. This wording is not meant to exclude raw materials that meet the requirements for contaminants and pollutants but are sold only as intermediates.

Arguments supporting the ECOFI proposal:

- It reflects the safety principle of the Commission: the raw materials for the organo-mineral product are fertilizing materials (inorganic fertilizers and organic fertilizers and/or organic soil improvers) which has specific safety criteria defined by the future EC Regulation on fertilizers;
- The definition fosters industrial technology and innovation: the organo-mineral product is manufactured through an industrial process that guarantees product homogeneity and consistency;
- Because the presence of organic C improves the nutrient use efficiency, the presence of organic C in each representative sample is critical for determining the product’s unique performance (compared to a simple blend);
- To demonstrate that organo-mineral isn’t a simple mix, scientific publications emphasize their unique agronomical characteristics which include the formation of complexed compounds like humates, slow release of nutrients, enhanced mineral nutrient efficiency, etc. ECOFI is currently in the process of compiling a bibliography on this point;
- The definition mirrors that of complex mineral fertilizers in Regulation (EC) 2003/03 (and many other references):

- (j) 'Compound fertiliser' means a fertiliser having a declarable content of at least two of the primary nutrients and obtained chemically or by blending or by a combination of both.
- (k) 'Complex fertiliser' means a compound fertiliser, obtained by chemical reaction, by solution, or in its solid state by granulation, having a declarable content of at least two of the primary nutrients. In its solid state each granule contains all the nutrients in their declared composition.
- (l) 'Blended fertiliser' means a fertiliser obtained by dry mixing of several fertilisers, with no chemical reaction.

Just as the definitions cited here differentiate between a complex fertilizer and a blend, there is a visible difference between a simple mix of organic materials with mineral fertilizers and an organo-mineral product. (See images of sample products below) The complex products are of uniform composition whereas the distribution of the elements is variable in the blend.

Mineral complex NPK fertilizers



Compound blend of mineral and organic fertilizers



Complex organo-mineral NPK fertilizers



MINIMUM QUALITY CRITERIA FOR ORGANO-MINERAL FERTILIZERS

There are 4 denominations of organo-mineral fertilizers:

- Organo mineral fertilizer N with $N_{tot} \geq 2,5\%$ (2% for a liquid product)
- Organo mineral fertilizers NP with $N_{tot} + P_2O_{5\ tot} \geq 4,5$ (4% for a liquid product)
- Organo mineral fertilizers NK with $N_{tot} + K_2O_{water\ soluble} \geq 4,5$ (4% for a liquid product)
- Organo mineral fertilizers NPK with $N_{tot} + P_2O_{5\ tot} + K_2O_{water\ soluble} \geq 6,5$ (6% for a liquid product)

This table presents the general requirements for the organo-mineral in complement of the previous specifications:

Parameter	Solid OM (% on the weight)	Liquid OM (% on the weight)	Comments
Dry matter	> 60	no minimum	Minimum dry matter content helps to determine that a product is an organo-mineral and not inorganic fertilizer.
C _{org}	7.5	3	Organic C must be specified as an essential and characterizing element of the organo-mineral category. The presence of the organic C indicates that the mineral fraction is linked to the organic matter, which creates a different release pattern enhancing agronomical efficiency of the product. Organic N and C are the most important criteria for defining truly organo-mineral products; To differentiate organo-mineral products from mineral fertilizers, organic C and at least one of the primary nutrients must be declared to characterize the category; It is preferable to use Organic C as the reference and not organic matter because its analytical determination is more precise (a simple, repeatable and inexpensive analytical method exists).
N _{tot}	2,5	2	Minimum nutrient contents must be determined as percentage on the weight of the final product and not expressed as a percentage of dry matter because these products contain different levels of dry matter (which means the proportion of nutrients would be variable for the same value on the label). Definition as a percentage of the packaged weight ensures accurate and clear information about the nutrient contents to the end users. It is also the only practical approach for liquid products.
N _{org}	1	0,5	
In addition, the manufacturer must declare on the label how much N _{org} the product contains as well as the sources of raw materials so that the end user can choose a product that includes a good percentage of organic nitrogen and ensure that at least some organic raw materials were indeed used (to differentiate from a straight mineral product).			
P ₂ O ₅ tot	2	2	
K ₂ O _{water soluble}	2	2	

			Recommended storage conditions should be specified on the label to minimize evaporation and foster stable proportions as a percent of final product weight.
C_{org}/N_{org} ratio	No minimum or maximum but the value must be declared on the label		

Each organo-mineral fertilizer has the following properties, but the exact expression of these properties is unique to each product and cannot be quantified at the level of the category:

- Each unit of the product has a comparable Specific Weight;
 - Each unit of an organo-mineral product contains both organic C and the declared mineral nutrients.
- Scientific literature clearly identifies unique agronomic qualities of organo-mineral fertilizers; however, these are too varied, depending on the product composition, to use to define criteria for characterization of organo-mineral fertilizers. ECOFI is submitting a supporting bibliography on this topic.

Arguments supporting the ECOFI proposal:

- Different levels are needed for solid and fluid products because in order to obtain a solution, the nutrient content is diluted. Also the Regulation (EC) 2003/2003 indicates lower percentages of N, P and K for the fluid fertilizers;

SECONDARY NUTRIENTS, MICRONUTRIENTS, AND OTHER AGRONOMIC PARAMETERS

Organic fertilizers, organic soil improvers and organo-mineral fertilizers may also contain some naturally occurring or added secondary nutrients or micro-nutrients.

Producers may choose to declare secondary or micro-nutrients if the values are higher than those specified in the future fertilizing materials regulation for inorganic fertilizers. See Article 17 and tables E22 and E23 of Reg (EC) 2003/2003 for the current declaration thresholds, as well as the reference to chloride in the table defining NPK fertilizers. Declaration values should also be included in the future regulation for Selenium; while Se is not a plant nutrient, fortifying fertilizers with Se has proven to be an effective way to positively impact public health where soils are Se deficient.

Declaring the humic and fulvic acid(s) (known together as humic substances) content also confers added value on organic-based products. However, there is currently no agreed European or international standard for determining the humic substances content, which makes it difficult to set the threshold today. However, ISO is already addressing this issue, and it is likely that the technical means will be in place before the future regulation comes into effect. We would recommend that the possibility to declare humic substances be foreseen in the draft regulation, with the technical standards to be finalized by ISO during the legislative procedure and implementation period.

KEY POINTS ABOUT SAFETY CRITERIA

HEAVY METALS CONTENT

In order to promote high safety standards, ECOFI proposes using a unified approach to safety criteria for organic fertilizers, organo-mineral fertilizers and organic soil improvers. The sole exception is organo-mineral fertilizers where the possible addition of mineral phosphate products necessitates limits that are aligned with those for mineral fertilizers in some cases.

Most of the values below are derived from the JRC study on the issue. The proposals have also been compared with an inventory of ECOFI members' products to determine their feasibility.

Substance	ECOFI's proposal for Max. conc. (mg/kg dry matter)
Cd (for Organic soil improver, organic fertilizers and organo-mineral fertilizers containing <5% P ₂ O ₅)	3
Cd (for organo-mineral fertilizers containing ≥5% P ₂ O ₅)	Same as inorganic fertilizers
Cr(VI)	2
Hg	2
Ni	50
Pb	120

Copper and Zinc must be treated separately, because they have also fertilizing effects. Some crops like corn, rice, fruit trees are sensible to their deficiency due to a lack in the soil or a bad assimilation.

ECOFI propose to keep the recommendations of DG Enterprise and to declare on the label the content of these nutrients if the values are higher than the following values:

Cu	200
Zn	600

Regarding the loading rates, ECOFI does not support including any requirements in the future regulation, because it is impossible for the producers to check if the farmers respect the limit values, because they can use different fertilizers on the same field each year. Loading rates are out-of-scope for a regulation that focuses on the placing on the market of products and would be better handled by regulations concerning agricultural management practices and/or environmental protection.

PATHOGENS

ECOFI can accept the same limits of the Regulation (EC) 1069/2009 for organic and organo-mineral fertilizers and organic soil improvers in according to the Commission proposal:

Pathogens	Maximum limit values
Salmonella spp	No Salmonella species in 25 g sample
Escherischia coli	1000 CFU/g product

ORGANIC CONTAMINANTS CONTENT

ECOFI supports the Commission's proposal:

Substance	Max. conc. (mg/kg dry matter)
PAHs (16 congeners)	6

VIALBE WEED SEEDS CONTENTS

ECOFI proposes to delete this requirement because no official analytical method is available. Furthermore, the added value of the criterion is questionable because organic fertilizers, organo-mineral fertilizers and organic soil improvers are added primarily to soils that already contain weeds and weed seeds. (This is different from the case of growing media.)

MACROSCOPIC IMPURITIES

At the March 2014 FWG, the Commission proposed the following limits for physical impurities for organic fertilizers:

- 0,5% on dry matter weight for glass, metal and plastics above 2 mm to be determined by dry sieving method.
- Stone exceeding 5 mm : no proposed maximum limit value

ECOFI comments

- It's not clear why only organic fertilizers are subject to these limits. Indeed, the likelihood of such impurities is higher in organic soil improvers. Production processes make these impurities irrelevant for organo-mineral fertilizers and liquid products.
- The French Agency for the Environment and Energy has conducted ring tests that concluded dry sieving (and washing with water) are less reliable methods than washing with bleach (equivalent to the French method NF U44-164). The CEN / TC 400 work on Horizontal standards in the fields of sludge, biowaste and soil has recently reached similar conclusions (the dry method and washing with water are not effective and the bleach method should be refined).

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- Given the conclusions on the sorting method, it would make sense that the proposals not be more stringent than those set by the French authorities using the bleach washing method. ECOFI therefore proposes the following values:
 - Polystyrene and films: <0,5% DM above 5 mm
 - Other plastics: <0,8% DM above 5 mm
 - Glass and metal: <0,5% DM above 2 mm
 - Stones: no limits as stones are naturally occurring in soil-based cropping environments.

LABELLING AND CONTROLS

ECOFI will provide a specific position paper on these topics.

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Final considerations:

The inclusion of products containing biological organic carbon is a true innovation in the new regulation. To more clearly differentiate between mineral (inorganic) and organic products, organic fertilizers, organic soil improvers and organo-mineral fertilizers, should mention this essential element.