

DEBATE on a European harmonization of marketing regulations for fertilizers, soils improvers and, growing media

Organic fertilizers, organo-mineral fertilizers
and soil improvers

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Definitions

- ***Organic fertiliser***: a fertiliser deriving from organic raw materials of animal or vegetable origin, composed by organic compounds to which main fertility elements are chemically bound in organic form or are part of the material.
- ***Organo-mineral fertiliser***: a fertiliser obtained by chemical reaction or by dry mixing of one or several organic fertilisers and/or one or several organic matrixes with one or several inorganic fertilisers.
- ***Organic matrix***: an organic product of natural origin, whose market standard can be identified, which main function is the production of organic and organo-mineral fertilisers.
- ***Soil improvers***: materials to be added to the soil in situ primarily to maintain or improve its physical properties, and which may improve its chemical and/or biological properties or activity.



From organic Industrial by-products.....

- By-products from industries processing meat, fish, hide and leather, sugar containing materials (molasses and fruits), pomace (from grapes, olive, oil seeds etc.)
- Supply significant amount of plant nutrient
- They need a treatment to be transformed in fertilizers



.....to market fertilizer products

- safe
- low heavy metal content
- low cost - the starting by product has generally a negative cost.
- good availability of raw materials (Eg. 2 large tannery districts in Italy, Atlantic fishing harbours in France)
- constant composition



Organic fertilizers and raw materials to prepare them: somewere in EU Regulations (1)

- **Animal by-products not intended for human consumption**

- REGULATION (EC) No 1774/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 3 October 2002

In ANNEX 1

.....

38. 'organic fertilizers' and 'soil improvers' mean materials of animal origin used to maintain or improve plant nutrition and the physical and chemical properties and biological activity of soils, either separately or together; they may include manure, digestive tract content, compost and digestion residues;

.....



Organic fertilizers and raw materials to prepare them:

somewere in EU Regulations (2)

- **EU Waste Legislation**

- Framework waste legislation

- [Decision 2000/532/EC](#) establishing a list of wastes, and particularly

- 20 02 01 Compostable waste
- 20 03 02 Waste from markets

- [Regulation \(EC\) No 1980/2000 on EU Ecolabel scheme](#)
(Voluntary scheme)

- In Progress

- A new EU biowaste directive according the specific request of the European Parliament



Organic fertilizers and raw materials to prepare them: somewere in EU Regulations (3)

- **EU regulation on Organic Farming**
 - COMMISSION REGULATION (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control
[ANNEX I - Fertilisers and soil conditioners]

It's necessary to harmonize the terminology of this regulation with the norms on fertilizers

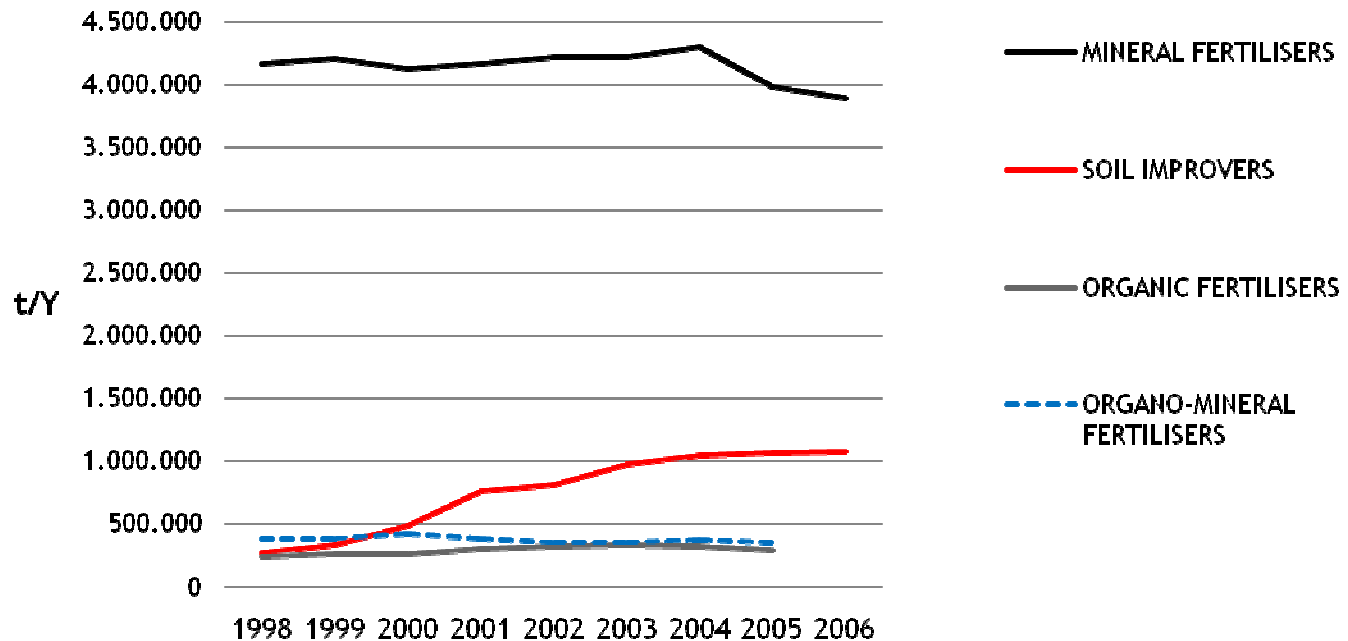


Plant nutrient content in organic fertilizers

	Meat and bone meal %	Bovine hides meal %	Vinasse from molasse %	Vinasse from grapes %
Organic nitrogen (N)	7,5 - 8,5	10,5 - 12,5	2,6 - 6,2	2,9 - 3,5
Total phosphorus (P ₂ O ₅)	12,0 - 14,0	0,2 - 0,3	0,2 - 0,3	0,6
Total Potash (K ₂ O)	n.d	n.d	2,4 - 3,2	1,8
Total Calcium (CaO)	14,5 - 16,5	0,5 - 1,0	0,2 - 0,3	2,7
Total organic carbon (C)	35,0 - 38,0	40,0 - 43,0	34,0 - 38,0	36,0



Fertilisers market (1998-2006)



Organic & organo-mineral fertilizers

Consumptions

- EU27 Production in terms of nutrients (av. 2005- 2007)⁽¹⁾:
Organic fert.

332.800 tons of N_{org} (2.9% of the total yearly N input)

540.800 tons of P_2O_5 (15,2 of the total yearly P_2O_5 input)

- Italy Consumption (2007)⁽²⁾:
Organic fert.

41.000 tons of N_{org} (5% of the total yearly N input)

2.500 tons of P_2O_5 (6% of the total yearly P_2O_5 input)

Organo-mineral N, NP,NK, NPK fert.

40.000 tons (average N_{org} 2-3%)

(1) Ifs proc. n° 641- Plant nutrients from organic industrial by-products - PL. Graziano *et al* (2008)

(2) ISTAT (2007) - Italian national Institute for Statistics



Composted materials (2007)¹

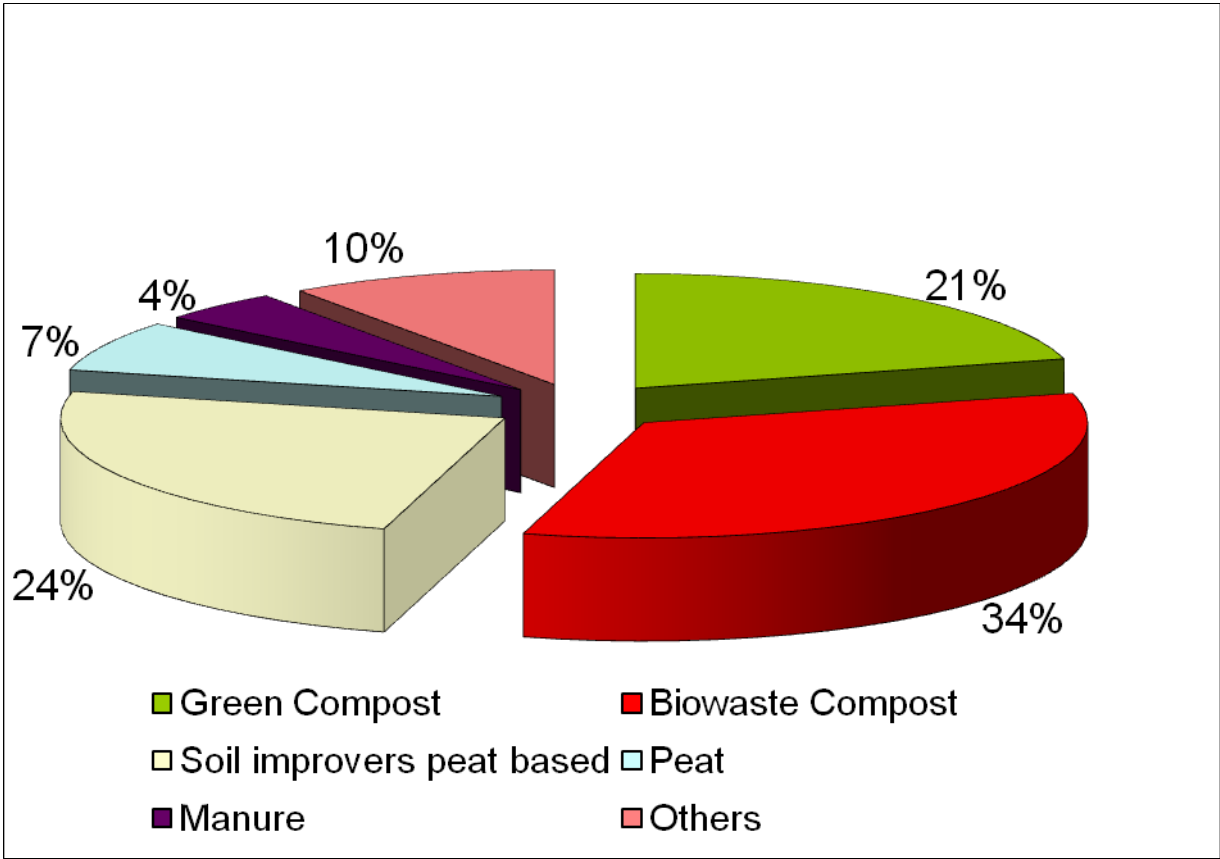
Mix and green composted soil improvers (without sludge compost)

- EU27 Production (t/year):
10.200.000 tons (80% made by D, UK, NL, I, F, AT)
- Italy Production (t/year):
1.000.000 tons (80% made by northern Italy)

(1) Centemero, M. (2008). *Iswa Beacon Conference, Perugia (I), may 2008.*



Soil improvers - % weight (Italy)



European agronomic needs and use for organic and organo-mineral fertilizers

- Different
 - Mediterranean countries higher than in northern EU countries
 - for climate and soil conditions
 - different consumption/mineralization of organic matter in soil
 - Tradition
 - e.g. Production of energy from poultry manure
- Common (particularly for hydrolyzed proteins)
 - Cash crops in greenhouses
 - Horticultural and ornamental crops



Research

- In plant nutrition
 - Slow release effect
 - Biostimulant effect
 - Phosphorous availability
- In soil science
 - Soil fertility
 - Microbiological activity

In progress

- New products
- New cultural techniques
- Organic farming



non-EC fertilizers

National regulations in MS

- The same approach of the EC-fertilizers (e.g. Belgium, France and Italy)
 - Positive list of products with:
 - type designation
 - method of production and essential ingredients
 - minimum content of nutrients
 - Declaration
 - Others
- Registration approach (e.g. Greece, Hungary)
 - Each product must be accepted by the National administrative body and registered one by one
 - No specific values for the characteristics but heavy metals.
- Intermediate approach (e.g. Austria, Slovakia)
 - List of raw materials
 - Manufacturing rules
- In Denmark and Finland, it is compulsory that 'organic fertilizers are of animal and/or plant origin'.
- In Germany and Spain a fixed list of permitted materials is imposed.



Reg. (EC) 764/2008 on Mutual Recognition (MR)

- MR is a method for ensuring free movement of goods in the non-harmonized area within the EU
 - Whatever are non-EC fertilizers regulated in each MS, MR applies to knock down technical barriers to products lawfully marketed in other Member States
- Even if it is more difficult to put barriers to free movement, it is possible a denial of mutual recognition by competent authorities according a specified procedure providing technical or scientific justification for their decision on the grounds of Article 30 of the EC Treaty or mandatory requirements recognized by EU



The mutual recognition principle applied to fertilisers

According EC Directorate Enterprise and Industry:

- Fertilisers have particularly complex requirements
- What about, organic and organo-mineral fertilisers, growing media, soil improvers?
 - Tour de table: how MS apply Mutual recognition + industry experience




A good job has already done....!

- Starting point CEN Report (BT C 53/1996)
- MS legislations on the subject
 - WG fertilizers collected info
- Industrial experience
 - Trade problems in EU and outside EU
 - Registration in other countries



European Commission, Directorate General Industry, mandate M/072/1994

- To CEN TC 260 to make a proposal for the inclusion of **Organo-Mineral fertilizers** into annexes of Directive 76/116/EEC.
- Task Force in the WG 4 called “Organic and Organo-Mineral Fertilizers”; convenor the Italian UNI delegate.
- 1996: CEN Report (BT C 53/1996) as a draft,
- Results of the vote: thirteen Member Bodies agreed and five disagreed for procedural lacks.  no action was adopted



CEN Report BT C 53/1996 (1)

- Three organic-mineral fertilizers
 1. OM Fertilizers: obtained by chemical reaction or by dry mixing of one or several inorganic fertilisers with one or several organic fertilizers
 2. Organo based fertilizers: obtained by chemical reaction or by dry mixing of one or several inorganic fertilisers with lignite and/or peat
 3. OM Fertilizers: obtained by chemical reaction or by dry mixing of one or several inorganic fertilisers with one or several organic fertilizers and/or lignite or peat.



CEN Report BT C 53/1996 (2)

- For each organic mineral fertilizer several type designation
 - Organo-Mineral nitrogenous fertilizer
 - Organo based nitrogenous fertilizer
 - Organo-mineral NPK, NP, NK, PK fertilizer
 - Organo based NPK, NP, NK, PK fertilizer
- in the proposal indication concerning :
 - the method of production and essential ingredients.
 - minimum content of nutrients (percentage by weight)
 - nutrient content to be declared
 - forms and solubilities of nutrients;



Organo-Mineral Straight Fertilizers

Nitrogenous fertilizers

N°	Type designation	Indication concernig the method of production and essential ingredients	Minimum content of nutrients (percentage by weight)	Other Requirements	Nutrient content to be declared forms and solubilities of the nutrients; other criteria
1	2	3	4	5	6
1 a	Organo-Mineral nitrogenous fertilizer	Product obtained chemically or by mixing nitrogenous mineral fertilizers or their component parts with organic fertilizers	Total N 10% of which Organic N 1%		Total N Organic N Any form of nitrogen must be declared when more than 1%. The statement "Contains organic material - of animal origin (give name as appropriate) and/or - of vegetable origin (give name as appropriate)" shall be given. May be declared: Organic matter content Organic C Humic C Humification ratio
1 b	Organo based nitrogenous fertilizer	Product obtained chemically or by mixing nitrogenous mineral fertilizers or their component parts with lignite and/or peat	Total N 10% Organic C 5%		Total N Organic C Any form of nitrogen must be declared when more than 1%. The statement "contains organic material



N°	Type designation	Indication concernig the method of production and essential ingredients	Minimum content of nutrients (percentage by weight)	Other Requirements	Nutrient content to be declared forms and solubilities of the nutrients; other criteria
1	2	3	4	5	6
					- lignite and/or -Peat” shall be give. May be declared: Organic matter content Humic C Humification ratio
1 c	Organo-mineral nitrogenous fertilizer	Product obtained chemically or by mixing nitrogenous mineral fertilizers or their component parts with organic fertilizers and/or lignite and/or peat	Total N 10% or which Organic N 1% Organic C 5%		Total N Organic N Organic C Any form of nitrogen must be declared when more than 1%. The statement “Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate) and/or -lignite and/or -peat” shall be given



N°	Type designation	Indication concernig the method of production and essential ingredients	Minimum content of nutrients (percentage by weight)	Other Requiremets	Nutrient content to be declared forms and solubilities of the nutrients; other criteria
1	2	3	4	5	6
					May be declared: Organic matter content Humic C Humification ratio



Organo-Mineral Compound Fertilizers

I. NPK fertilizers

N°	Type designation	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 a	Organo-mineral NPK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers	N+P+K 11%	Total N 2% of which Organic N 1% P2O5 3% K2O 3%	Total N Organic N Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB1 (NPK) of EEC directive 76/116 for mineral solubilities	K2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" shall be given. Also may be declared: organic matter content Organic C Humic C Humification ratio



N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 b	Organo based NPK fertilizers	Product obtained chemically or by mixing mineral fertilizers or their component parts with lignite and/or peat	N+P+K 11%	Total N 2% P2O5 3% K2O 3% Organic C 5%	Total N Organic N Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB1 (NPK) of EEC directive 76/116 for mineral solubilities	K2O water soluble	The statement "Contains organic material -Lignite and/or peat" shall be given. Also may be declared: organic matter content Humic C Humification ratio
1 c	Organo - Mineral NPK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers and/or lignite and/or peat	N+P+K 11%	Total N 2% of which Organic N 1% P2O5 3% K2O 3% Organic C 5%	Total N Organic N Organic C Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB1 (NPK) of EEC directive 76/116 for mineral solubilities	K2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" and/or -lignite and/or -peat" -shall be given



N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
								Also may be declared: Organic matter content Humic C Humification ratio



II. NP fertilizers

N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 a	Organo-mineral NP fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers	N+P 10%	Total N 2% of which Organic N 1% P2O5 3%	Total N Organic C Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB2 (NP) of EEC directive 76/116 for mineral solubilities		The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" shall be given. Also may be declared: organic matter content Organic C Humic C Humification ratio
1 b	Organo based NP fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with lignite and/or peat	N+P 10%	Total N 2% P2O5 3% Organic C 5%	Total N Organic C Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB2 (NP) of EEC directive 76/116 for mineral solubilities		The statement "Contains organic material -Lignite and/or peat" shall be given. Also may be declared: Organic matter content Humic C Humification ratio

N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 c	Organo-mineral NP fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with lignite and/or peat	N+P 10%	Total N 2% of which Organic N 1% P2O5 3% Organic C 5%	Total N Organic N Organic C Any form of nitrogen must be declared when more than 1%	Total P2O5 plus other appropriate mineral solubilities as required at annex IB2 (NP) of EEC directive 76/116 for mineral solubilities		The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" and/or -lignite and/or -peat" shall be given. Also may be declared: organic matter content Organic C Humification ratio



III. NK fertilizers

N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 a	Organo-mineral NK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers	N+K 10%	Total N 2% of which Organic N 1% K2O 3%	Total N Organic N Organic C Any form of nitrogen must be declared when more than 1%		K2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" and/or -of vegetable origin (give name as appropriate)" shall be given. Also may be declared: organic matter content Organic C Humic C Humification ratio
1 b	Organo based NK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with lignite and/or peat	N+K 10%	Total N 2% K2O 3% Organic C 5%	Total N Organic C Any form of nitrogen must be declared when more than 1%		k2O water soluble	The statement "Contains organic material -Lignite and/or peat" shall be given. Also may be declared: Organic matter content Humic C Humification ratio



N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 c	Organo-Mineral NK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers and/or lignite and/or peat	N+K 10%	Total N 2% of wich Organic N 1% K2O 3% Organic C 5%	Total N Organic C Any form of nitrogen must be declared when more than 1%		k2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" and/or -lignite and/or peat" shall be given. Also may be declared: Organic matter content Humic C Humification ratio



IV. PK fertilizers

N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 a	Organo - mineral PK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers	P+K 10%	P2O5 3% K2O 3%		Total P2O5 plus other appropriate mineral solubilities as required at annex IB4 (PK) of EEC directive 76/116 for mineral solubilities	k2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) shall be given. Also may be declared: Organic matter content Humic C Humification ratio
1 b	Organo based PK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with lignite and/or peat	P+K 10%	P2O5 3% K2O 3% Organic C 5%	Organic C	Total P2O5 plus other appropriate mineral solubilities as required at annex IB4 (PK) of EEC directive 76/116 for mineral solubilities	k2O water soluble	The statement "Contains organic material - lignite and/or peat" shall be given. Also may be declared: Organic matter content Humic C Humification ratio



N°	Type Destination	Data on method of production	Minimum content of nutrients (percentage by weight)		Forms, and nutrients to be declared			Data for identification other requirements
			Total	For each of the nutrients	N and C	P2O5	K2O	
	1	2	3	4	5	6	7	8
1 c	Organo - mineral PK fertilizer	Product obtained chemically or by mixing mineral fertilizers or their component parts with organic fertilizers and/or lignite and/or peat	P+K 10%	P2O5 3% K2O 3% Organic C 5%	Organic C	Total P2O5 plus other appropriate mineral solubilities as required at annex IB4 (PK) of EEC directive 76/116 for mineral solubilities	k2O water soluble	The statement "Contains organic material -of animal origin (give name as appropriate) and/or -of vegetable origin (give name as appropriate)" and/or -lignite and/or -Peat" shall be given: Also may be declared: Organic matter content Humic C Humification ratio



Conclusions

- Two tools to facilitate a free exchange of Organic and Organo-mineral fertilizer in Europe:
 - An EU Regulation
 - The wide application of the “Mutual Recognition”
[Reg. (EC) 764/2008]
- A Regulation is more easier to apply and to manage
- “Mutual Recognition” is more difficult to control



Thank you for your attention

