



**ASOCIACION ESPAÑOLA DE FABRICANTES DE
ABONOS ORGANO-MINERALES Y ORGANICOS
(F.O.M.A.)**

COMMENTS HEAVY METALS LIMITS ON FERTILISING MATERIALS

Point 6 of the draft agenda FWG 2nd June 2014: Revision of the Fertilisers Regulation:

(a) Feedback of the FWG members on essential safety requirements discussed on 17.03.2014

Spain, 25th April 2014

FOMA, as you know, is the Organic and Organo-mineral Fertiliser Manufacturers' Spanish Association that joins the more representative Spanish companies on solid and liquid organic and organo-mineral fertilisers, organic soil improvers, amino acids, humic acids, growing media, etc.

In the last meeting of the Fertilisers Working Group on 17th March, Mr. Delvaux made the presentation "Essential safety and quality requirements for fertilising materials" taking like sources of information the outcomes of the Technical Working Groups on 2012, consults with stakeholders and the final report 2014 of JRC Sevilla on EoW criteria for biodegradable wastes.

FOMA would like to insist into the matter of the heavy metals in order to clarify our proposal submitted on June 2013 (Application rates. Limits non nutrients and micro-nutrients. Maximum loads. To see into CIRCABC)¹.

Relating to safety criteria, Mr. Delvaux said that limit values should be specific to each product categories taking into account their application rates.

We would like to remember this comparative table:

¹ [CIRCABC/Newsgrups/WG3/Application rates.FOMA.Heavy metals classes and loading](#)

Maximum permissible levels of heavy metals							
CONTAMINANT	Directive 86/278/EEC Concentration in soil	Directive 86/278/EEC Concentration in sludge	Draft Sludge DG Env 2010	EoW JRC 2014	Technical WG3 fertilisers 2012	Inorganic fertilisers FGW 2014	Organic fertilisers FGW 2014
Cadmium (Cd)	1-3	20-40	10	1,5	1,5-3	3	1,5
Cadmium (Cd) if P₂O₅ >5%	-	-	-	-	-	60** mgr/kg.P ₂ O ₅	-
Copper (Cu)	50-140	1000-1750	1000	200	300*		200
Nickel (Ni)	30-75	300-400	300	50	50-120	120	50
Lead (Pb)	50-300	750-1200	500	120	140-150	150	120
Zinc (Zn)	150-300	2500-4000	2500	600	600*		600
Mercury (Hg)	1-1,5	16-25	10	1	1-2	2	1
Chromium (Cr)	-	-	1000	100	100*	-	-
Chromium (CrVI)	-	-	-	-	2	2	0,5
Arsenic (As)	-	-	-	-	30-60	60	-

* Proposal of the Commission. Not agreement

** Discussed on FWG 2009, but not agreement because it was not based on risk assessment (SCHER Scientific Committee on Health and Environmental Risks, 2003, before SCTEE)

The maximum content in soil according to the Council Directive 86/278/EEC was used for some countries like reference, but it is not the same the concentration in soil of one heavy metal, that the concentration in a product applied to soil at a determined application rate. For example, a concentration of 1 mgr.Cd/kg. into soil, is for a arable layer of 30 ctms.(topsoil) with density of 1,1, is a weight of 3300 tonnes of soil per ha., namely, a load of 3300 gr.Cd/ha., whereas 1 mgr.Cd/kg in a sludge applied at 15000 kgs/ha. is 15 gr.Cd/ha, namely 220 times less.

And relating to the end of waste criteria (JRC Sevilla 2010-2104), taken like reference, they are fixed a very strict limits for considering that a waste ceases to be it, and like a product, can be applied to soil directly or used like raw material for manufacturing fertilisers, soil improvers or growing media, because is a biodegradable waste biological treated through aerobic (compost) or anaerobic (digestate) process and it must accomplish the criteria. These materials, when are applied to soil, the application rates are higher than soil improvers or fertilisers, usually more than ten times, then, the compost and digestates can not have similar limits for heavy metals. The typical application rates of these products are 15000 kgs/ha/year., while inorganic fertilisers and organo-mineral fertilisers are bellow 1000 kgs/ha/year and organic soil improvers 3000-5000 kgs/ha/year.

In the TWG3 April 2012, the ranges of heavy metals were fixed taking like reference the concentrations in soil and the EoW criteria provisional works 2010 (similar to final report 2014) and the regulations of only 2-3 countries. And into the presentation of Mr. Delvaux 17th March 2014, the table for inorganic fertilisers showed the lower limits of the range, and for organic fertilisers the higher limits of the range (proposed by EU EoW). Note that it makes not sense, because the bioavailability of the heavy metals is higher in inorganic fertilisers than in organic fertilisers, because is known that the organic matter chelates the heavy metals and allows the recovery of contaminated soils (numerous scientific bibliography), then the limits for organic fertilisers should be less strict than for inorganic fertilisers.

It is not possible to set the same limits for fertilisers than for compost or digestates. For example, on the final report of JRC 2014 taken like reference, the limit for cadmium is 1,5 mgr/kg. and the typical application rate is 15000 kgs/ha. Then for an organic fertiliser with a typical application rate of 3000 kg/ha., the limit should be $1,5 \times 5 = 7,5$ mgr/kg. For organo-mineral fertilisers with a typical application rate of 900 kgs/ha. the limit for cadmium should be $1,5 \times 16,6 = 25$ mgr/kg.

and for organic soil improvers with a typical application rate of 4500 kgs/ha. the limit for cadmium should be $1,5 \times 3,33 = 5$ mgr/kg.

You can see following some examples, taking like reference EU EoW:

Maximum permissible levels of heavy metals (mgrs/kg)									
	EU EoW JRC 2014	Biostimulants	Inorganic fertilisers	Organo-mineral fertilisers	Organic fertilisers	Organic soil improver	Inorganic soil improvers	Compost digestate	Unprocessed manures
Typical application rate	15000 kgs/ha	40 kgs/ha	900 kgs/ha	900 kgs/ha	3000 kgs/ha	4500 kgs/ha	6000 kgs/ha	15000 kgs/ha	25000 kgs/ha
Cadmium (Cd)	1,5	563	25	25	8	5	4	1,5	0,9
Copper (Cu)	200	75000	3333	3333	1000	667	500	200	120
Nickel (Ni)	50	18750	833	833	250	167	125	50	30
Lead (Pb)	120	45000	2000	2000	600	400	300	120	72
Zinc (Zn)	600	225000	10000	10000	3000	2000	1500	600	360
Mercury (Hg)	1	375	17	17	5	3	3	1	0,6
Chromium (Cr)	100	37500	1667	1667	500	333	250	100	60
Chromium (CrVI)	-	-	-	-	-	-	-	-	-
Arsenic (As)	-	-	-	-	-	-	-	-	-

Our proposals¹ about heavy metals in organic and organo-mineral fertilisers, organic soil improvers and other products are based on the Directive 86/278/EC (concentration of heavy metals in soil and in sludge), draft Sludge DG Environment 2010, EoW criteria JRC 2010-2014 and TWG-3 2012, moreover taking into account their application rates according the premise of the Commission into their presentation 17th March by Mr.Delvaux "Essential requirements" (the limit values would be specific to each product categories taking into account their application rates).

Then, one possibility is to set limit values specific to each product categories taking into account their application rates like are shown in our proposals (organo-mineral fertilisers July 2013 and organic fertilisers and organic soil improvers April 2014), but the problem of the ranges is the border effect, namely, the non proportionality near the border of the ranges. Similar doses can have different maximum limits of heavy metals. Other complexity of these criteria is to manage different tables for each category. Then, we insist is better to define a single table to limit the maximum load to add to the soil per year, similar to what has been established in several countries. We have proposed the maximum acceptable heavy metals yearly additions in our porposals¹ based in numerous works and regulations of different European countries, USA and Canada, then the manufacturers should check their products and to set into the label the advised maximum application rate to use by the farmer for not exceeding the maximum loading, and the competent authority can analyse random samples to check the enforcement of the regulation.

We hope that the European Commission and the stakeholders assess positively our proposals about the limits of heavy metals¹ into the future regulation of the fertilising materials, and we remain at your disposal for any clarification on this subject.



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FOMA

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