



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

**COMMENTS ESSENTIAL QUALITY REQUIREMENTS FOR ORGANO-MINERAL  
FERTILISERS (point 6.e Draft Agenda FWG meeting 2<sup>nd</sup> June 2014)**

**Spain, 16<sup>th</sup> May 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 17<sup>th</sup> March, the President Mr. Buescher said that would be interesting to have a parameter in order to differentiate organo-mineral fertilisers versus a single blend or mix of inorganic fertiliser and organic fertiliser, to establish them like separated category. We know that the agronomical efficacy of the organo-mineral fertilisers is higher than a single blend and the assimilation of their mineral nutrients is more gradual.

Then, in relation to the point 6.e. of the draft agenda meeting FWG 2<sup>nd</sup> June 2014, definition and essential quality requirements for organo-mineral fertilisers, FOMA would like to make the following comments:

In July 2013, FOMA submitted a proposal about organo-mineral fertilisers (CIRCABC/Newsgrups/WG1/Association FOMA Organo-mineral fertilisers proposal)

Relating to the definition, we revised the definitions of the European Committee of Normalization (CEN), Technical Committee TC 260, Fertilizers and liming materials 1996, the International Organization for Standardization (ISO) into TC 134/WG1 2013-2014 (ISO/DIS 8157), our Spanish Royal Decree n° 506/2013 and finally the conclusions of the fourth meeting of the technical working group WG-1 2012. Then we proposed:

*Organo-mineral fertilisers means a fertiliser obtained by combining inorganic materials or inorganic fertilisers and organic materials or organic fertilisers and/or inorganic/organic soil improvers that usually are placed on the market in granulated or pellet form.*

And in relation to the necessity to establish an specific category, we mentioned that the organo-mineral fertilisers are a separated category mainly because they have a special production process (mainly granulated or pellet form) and they constitute a differential and important market in Spain, France, Italy, The Netherlands, Portugal, Greece, Germany, Belgium, etc. and outside the European Union with numerous specialised industries that manufacture this kind of fertilisers. The only difference with the inorganic fertilisers is that besides the inorganic raw materials, they use also organic raw materials into the production process. They are not simply mixed fertilisers.

The granulated process is the same used for the known inorganic complex fertilisers (that nobody doubts is an specific category) and includes dosage of the raw materials into the drum granulator in acid solution, drying system in a rotating cylinder, sieving in adequate vibrational mesh system, cooled in a fluid bed and finally a conditioning with anti-caking and other additives. The usual granulometry is diameter 3-5 mm.

The pelletizing process include dosage of the raw materials into the pellet machine where the material is forced by extruding and compression to pass through small holes of a ring-shaped matrix at high temperature and pressure, cooling system in a fluid bed, sieving to eliminate the powder and finally a conditioning with additives. The usual size is cylinders of 4-6 mm. diameter and length 5-10 mm.

Moreover, the organo-mineral fertilisers have special agronomical characteristics (nutritional efficacy) that make them differentials of the inorganic fertilisers, forming a separated category. The combining of the organic matter (specially its humified proportion or humic substances) and the mineral nutrients, increase the efficiency of the assimilation of the nutrients by formation of complexed compounds (humophosphates, potassic humates, ammonium humates, micro-nutrients fulvates, etc.) and improving the organic matter and the fertility. The organo-mineral fertilisers are a suitable way to make an efficient fertilisation.

It is possible to revise the numerous scientific literatures about this matter, but it not easy to establish a specific parameter to differentiate the organo-mineral fertilisers of the blendings inorganic fertilisers with organic matter.

One possibility is the slow release of the nutrients, mainly, nitrogen, phosphorus and potassium. The complexed compounds formed into the organo-mineral fertilisers, slow the release of the nutrients and make its assimilation more gradual and adapted to the rate of uptake nutrients by the crops. Then it is possible to set a similar CEN method EN 13266 or ISO/CD 18644 to determinate this slow release and slow availability by the crops, through a different mechanism to the nitrification inhibitors and urease inhibitors or coated fertilisers.

It is possible to validate a method with elution of a test portion of a organo-mineral fertiliser with a specified volume of water and determination of the concentration of the nutrients, which have been dissolved in defined time intervals (after 24 h., 7, 14, 21 days, 1-8 months) following similar guidelines to EN 13266 or to determinate the initial release rate of nutrient in 24 h. and the cumulative release mass fraction of nutrient and the stated release time following ISO/CD 18644. The CEN could study a specific method for organo-mineral fertilisers.

Other possibility is determinate the ratio of the complexed compounds, humophosphates and fulvophosphates, potassic humates, ammonium humates, magnesium humates, micro-nutrients fulvates, etc. We know the AOAC 983.03 modified method<sup>1</sup> based on the precipitation of the inorganic forms at pH 9 for the determination of complexing capacity of micronutrients in fertilisers. In this way, the complexed forms of one element remain in solution and are separated from the not complexed forms. The complexed forms are collected and its concentration is determined by flame atomic absorption spectroscopy FASS, as well as the total concentration of the elements. It is possible to develop a similar method for macronutrients to determinate for example the total nitrogen in an organo-mineral fertiliser and the complexed fraction in humate form, or the total phosphorus and the complexed fraction in humate or fulvate form, or the total potassium or magnesium and its complexed fractions in humate forms, etc. The CEN could study a specific method for organo-mineral fertilisers.

We hope that the European Commission and the stakeholders assess positively our comments about quality requirements for organo-mineral fertilisers into the future regulation, and we remain at your disposal for any clarification on this subject.



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<sup>1</sup> Villén, M, Lucena, J.J., Cartagena, C., Bravo, R., Garcia-Mina, J.M., Martin de la Hinojosa, I. 2007. *Comparison of two analytical methods for the evaluation of the complexed Metal in fertilizers and the complexing capacity of complexing agents*. Journal of Agricultural and Food Chemistry, 55. pgs. 5746-5753.