2024-01-19 Report from SOFIE3, Brussels, about Organic vs Biobased Fertiliser

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European Sustainable Phosphorus Platform (ESPP) organised 2024-01-18 in Brussels the working meeting “Defining “Bio-Based Fertilisers” and FPR “solely biological origin” with over 200 registered participants, most of them online. Around 30 persons participated in the room, among them from Sweden Nicola Parfitt (Sanitation360) and Håkan Jönsson (SLU). The ESPP seems to be the main speaking partner of the commission concerning biobased fertilisers and thus ESPP events are important.

The purpose of the working meeting “Defining “Bio-Based Fertilisers” and FPR “solely biological origin” was to reconcile the requirement in the fertiliser product regulation (FPR) that the product fertiliser category (PFC) organic fertiliser should only contain carbon and nutrients of “solely biological origin” with the definitions and calculation of the biobased fraction calculated as given in the standard EN16575. This proved not possible, as the commission does not have the mandate to change the definition of organic fertiliser given in the FPR. However, the commission is mandated to give the requirements on the label describing the fertiliser product. The proposal from the working meeting was that this label can describe the fertiliser as “Biobased” if the proportion of biobased carbon and nutrients in the product is above 90% (100% minus a tolerance of 10%) and as Partly biobased if the proportion of biobased C or nutrients in the product is above 10% but below 90%. At the meeting, an alternative suggestion was to skip the term “Partly biobased” all together and instead require that fertilisers with more than 10% being biobased should be labelled “Biobased X%” if they want to declare anything about being biobased. This suggestion was supported by us from Sweden.

Several presentations by the European commission before the working meeting proper and during the two days of 3rd SOFIE (Sustainable Organic Fertilisers in Europe) had given the background on why a good definition of biobased fertilisers is needed. Bertrand Vallet (European Commission DG RTD, Research & Innovation), explained that “Bio-Based” fertilisers are a key part of the EU Bioeconomy Strategy and thus of R&D project funding targeting the Circular Economy. Fabien Santini (European Commission DG AGRI) talked about the problem with fertiliser availability in EU 2023, and how EU works to improve the availability. One strategy is to decrease the need by improving the use the fertilisers. Together with increased recycling of nutrients and increased production in EU this will improve the availability of fertilisers in the EU. The goal of 25% organic agriculture in EU and growth of more legumes and more N-fixing crops will also decrease the need. In order to follow the fertiliser situation, EU Fertiliser Market Observatory has been founded. It follows fertiliser prices, trade and production data and the statistics are public at:
Theodora Nikolakopoulou (European Commission, DG GROW Fertilisers), suggested that incentives are needed to facilitate uptake of secondary fertilisers, and therefore that clear and agreed definitions are important, for “bio-based”, “recovered” and “recycled” fertilisers.

Only certain well specified Component Material Categories (CMCs) are allowed for production of fertilisers in the EU fertiliser product regulation (FPR (EU) 2019/1009). Initially, neither manure nor wastewater sludge was allowed as CMC, a weakness which the commission is very aware of. Therefore, the commission is actively investigating which waste and wastewater fractions can be safely included within the CMCs. Thus, in 2021 struvite and phosphate salts recovered from municipal wastewater was allowed as CMC 12 ((EU) 2021/2086) within the FPR and struvite was also allowed for use in EU certified Organic Farming. The EU commission has also just started a two-year project (EC DG GROW/2022/OP/0046 LOT 2) investigating a number of other waste and wastewater fractions to see which of them can be allowed as CMC and under which conditions.

Human excreta including source separated urine is among the materials investigated. The time plan is that a 1st interim report will be published mid 2024 and a second spring 2025. Both interim reports will be discussed at virtual workshops. The final report with suggestions on new CMC material is due autumn 2025. The project is led by Brent Riechelman and the reports will be published on EU CIRCABC platform (https://circabc.europa.eu/). Background on new materials for inclusion as CMC can be sent to brent.riechelman@nmi-agro.nl.

Kerstin Rosenow (European Commission, DG AGRI Research and Innovation) stressed the importance of healthy soils and sustainable fertilisation and soil management. Over 60 % of soils in Europe are unhealthy and cropland soils are losing 0.5 % SOC per year. 65-75 % of agricultural soils are fertilised at a rate that increases the risk of eutrophication, 24 % have unhealthy erosion. Estimated nutrient surpluses are 50 kg N and 2 kg P/ha. Nutrient losses are 50-60 % of application in some regions. Nutrient losses should be reduced by 50 % by 2030 according to the EU’s Green New Deal’s Farm to Fork strategy. For soil management there is a knowledge – practice divide. More knowledge is needed on biodiversity, contamination, carbon farming, waste management. This is the reason for the EU soil strategy, the soil monitoring law, and for sustainable carbon cycles and why they have decided on the EU soil observatory and the EU soil mission Soil Deal for Europe.

The soil mission (https://ec.europa.eu/eusurvey/runner/mission-soil-manifesto) includes all land, agriculture, forestry etc. including urban soils. The plan is to start 100+ living labs and lighthouses with a total of 1000+ testing sites for soil. The living labs should be real-life sites in rural or urban areas in which people from various sectors and backgrounds experiment and test solutions in a co-creative manner (https://mission-soil-platform.ec.europa.eu/living-labs/). They should show-case sustainable and regenerative soil management practices and increase the awareness of the importance of a healthy living soil. A living lab is composed of a group (10-20) of sites and actors such as farmers, researchers, advisors, SMEs, citizens. Lighthouses are individual sites, such as a single farm, of exemplary performance to show-case good practices. So far some 20-25 have started and there will be successive calls to reach the goal of 100 by 2027. An opportunity for building confidence in biofertilisers is if they are included in living
labs and light houses
(https://www.youtube.com/playlist?list=PL48jYWfH7LrB0sm5vGDmvBPdP1ZxVJtHV).

An interesting presentation on the correlation between organic carbon input to soils and crop yields was held by Renske Hijbeek, Wageningen University. She has done several meta-analyses on the correlation between organic carbon inputs to soils and the crop yield. In a study with 20 long term experiments in mainland Europe from Madrid in the south to Oldenburg in the north, Madrid in the west to Iasi in the east, on average no additional benefit was found from the input of organic material when the effects of plant nutrients had been accounted for. However, for certain types of organic fertilisers there was on average a positive effect, especially for farmyard manure but also for straw plus green residues. There was also a positive effect for certain crops, especially potatoes, but also maize and sugar beet and for spring sown cereals (Hijbeek et al., 2017). The promised win-wins effects of organic input to soil, increased sequestration and increased yield, do not occur on the same place. On sandy soils, organic input on average increases the yield, but the soil carbon sequestration is low to very low. On clay soils, the sequestration potential is large, but the yield increase is low and for autumn sown cereals usually even negative (i.e. yield decrease).

Reference.