EuropaBio response to the Call for Evidence on Soil health – protecting, sustainably managing and restoring EU soils

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The EU Soil Strategy for 2030, published in November 2021, noted that soils can contribute to key challenges linked to climate change, circular economy, human and environmental health, and water resources. Their capacity to do so, however, is jeopardized by soil desertification, degradation, and pollution. To address this, the Strategy outlined a number of aspects that should be considered in the impact assessment for soil health. We would particularly like to highlight measures that can contribute to reducing nutrient losses by at least 50% without deterioration in soil fertility (resulting in the reduction of fertiliser use by at least 20%).

Industrial biotechnology (IB) supports sustainable crop cultivation and soil health while providing an alternative to fossil-fuel derived products. For example, agricultural biostimulants include diverse formulations of substances and microorganisms that complement mineral fertilisers and are applied to plants or soils to improve crop vigour, yields, stress tolerance, and quality. They do so by enhancing plant nutrition and soil health. Industrial biotechnology derived microbials and microbial products also work as biological crop protection products, or biocontrols, and can help farmers to protect plants from pests and diseases, including weeds. Thus, they can be used to complement, or even replace pesticides. Bioherbicides (bio-based chemical molecules used in herbicides, for example pelargonic acid) represent a valuable alternative to conventional herbicides for improving the sustainability of herbicides in agriculture. Industrial biotechnology solutions, including microorganisms and products developed using microorganisms, should be considered as part of the toolbox for improving soil health and fertility.

Good soil health and nutrition is also a key part of the circular bioeconomy, in which bio-based solutions, derived from renewable feedstock and developed using industrial biotechnology, also play a role. For example, biodegradable and compostable plastics, whether bio-based or conventional, can also contribute to high-value bio-waste. Biodegradable and compostable plastics are designed for specific applications and follow specific end-of-life management processes, where they are collected separately and organically recycled with bio-waste. Bio-waste can in turn be used to produce high-quality compost and organic fertiliser that helps restore soil organic carbon, increase soil fertility, and tackle desertification.

Land degradation is a recognised problem in Europe, with large territories at risk. In this regard, the maintenance and improvement of soil health, with its many associated co-benefits, such as climate resilient agriculture, enhanced biodiversity, and carbon farming, should be prioritised. In this context methodologies and agricultural practices that increase soil organic matter content (e.g., incorporation

of cover crops, expansion of crop rotations and conservation tillage or no till soil preparation techniques) should be implemented and encouraged. At the same time, it is important to foster, promote and fund the development of new innovations (e.g., new genomic techniques). Enabling regulatory frameworks for innovative solutions will support the delivery of EU green ambitions, promote innovation and foster growth. Policy initiatives linked to soil health should consider the role that bio-based solutions developed by industrial biotechnology can play in improving soil health and increasing soil carbon sequestration.

Please see also:

Industrial Biotechnology Solutions for Sustainable Agriculture – EuropaBio report

Bioplastics – revolutionising the lifecycle and sustainability of plastic – EuropaBio UN SDG Case Study

Create sustainable bio-based and biodegradable plastics – EuropaBio Inspired By Life Case Study

EuropaBio *aisbl*
Avenue des Arts 53, 1000 Brussels
+32 2 735 03 13
www.europabio.org
VAT BE0477520310