

External organic matters for circular economy and soil health: towards better knowledge and management practices

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The use of external organic matters (EOM) in agriculture has been realized since many years through the application of animal manures and slurries. Now it becomes mandatory to recycle biowastes from urban activities (from homes, restaurants, stores) and their application on soils after treatment contribute to nutrient cycling and bioeconomy in territories, together with organic carbon contribution to soils and climate mitigation. Before application, different treatments may be applied that increase the diversity of characteristics of the EOM applied on soils, increase or decrease the efficiency of nutrient recycling. Such EOMs may also carry contaminants (organic contaminants, impurities, trace elements) that needs to be known and controlled to prevent environmental impacts associated with EOM recycling. To consolidate the uses of these EOMs in fertilizing practices with maximum nutrient use efficiency, positive carbon budget and economically viable without environmental impacts, it is important to improve the knowledge of the available EOM (quantity and quality), on the relationship between treatments and EOM characteristics and efficiencies and on the multi and simultaneous impacts of their use. Long-term experiments with repeated EOM application are useful tools for such assessments. Recommendation for good management of organic wastes treatment and use as fertilizers need to be produced for end users at the farm or territory scale together with policy recommendation at the territory or national level. Moreover, understand the economic potential of these EOMs and their impact on the current fertilizer market as well as on farmers cash flow.

The session will address these questions of best management practices in recycling EOMs to close nutrient and carbon cycles for sustainable territorial bioeconomy.