

**EIP AGRI Fertilizers focus
group:mini paper on organic
sourced fertilizers
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Sources of organic fertilizers

- animal origin: farm yard manure, slurry/ separated solid and liquid slurry, compost, digestate/ separated solid and liquid digestate, products from digestate (e.g. struvite, phosphates), hydrolized proteins from animal by-products,
- non-animal origin: compost/food waste, sewage sludge, digestate/ separated solid and liquid digestate, vermicompost, feed residues, peat and plant residues,
- non-agricultural resourced: sewage sludge, compost from sewage sludge, vermicompost, compost (BR 09, CH01, CH03 from Nutrihort), biochar, food industrial residues (brewery, beverage, oil mills residue, filtration residues, starch, fruit and vegetable, milk, forestry (wood chips),
- mixture of fertilizers from group 1-2-3

Agronomic and environmental advantages

- increase the soil organic matter(SOM)content,
- improve soil structure, water retention capacity,
- improve plant growth/deeper rooting,
- valuable nutrient resources for plants/already mineralised , macro and microelements,
- increase soil biological activity/ beneficial microorganisms
- soil pH stabilisation/neutralising value,
- GHG emission: chemical fertilizers 3069 kg CO₂e/t NH₄NO₃ (330 kgN/t) (Yara 2010 with 9,3 kg CO₂e/kg N), pig manure 0,08 kg CO₂e/t (330 kgN/t = 5,28 kg Co₂e), cattle manure 0,581 kg CO₂/t, (330 kgN/t=38,28 kg CO₂e),
- Digestate GHG saving estimation 20 - 30kg CO₂e/m³

Particularities and bottlenecks

- nutrients are not concentrated, in general lower nutrient content /large volumes,
- slow nutrient release (nitrification and denitrification),
- some major nutrients are not in sufficient quantity,
- the fertilizing value can be variable/input dependent,
- large amounts, extra transportation costs/lowers the acceptance by farmers,

Bottlenecks

- lack of common requirements (quality standards, marketing),
- different legislation constrains at EU, national, regional level,
- limited knowledge on sustainability of the products in terms of energy consumption, overall GHG emission, crop applicability,
- lack of knowledge on the availability and on the characteristics of the new organic fertilizers,

To be discussed

- which organic sourced fertilizers are the most used (for the future) and suitable for horticultural crop production? why?
- what are the specific aspects in regions with organic fertilizer shortage and regions with excess?
- is the organic fertilizer trade/exchange monitored? what is the farmers behaviour in using these fertilizers?
- in case of marketable organic products how sustainable is the product in terms of energy consumption, GHG emission, financial costs and fertilizer efficiency and which product or combination of products are suitable for different EU regions?
- what is the N-P-K and micronutrients substitution value of different organic sourced fertilizers?
- which products to be considered as organic sourced fertilizers and what are the required qualities (physical, chemical, biological parameters)? is there a need for quality assurance and certification?

Thank you for your
attention

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