

Session 2

European composting landscape – Quo vadis?

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Wageningen University & Research

- Wageningen University + 9 Research institutes
 - Wageningen Food & Biobased Research



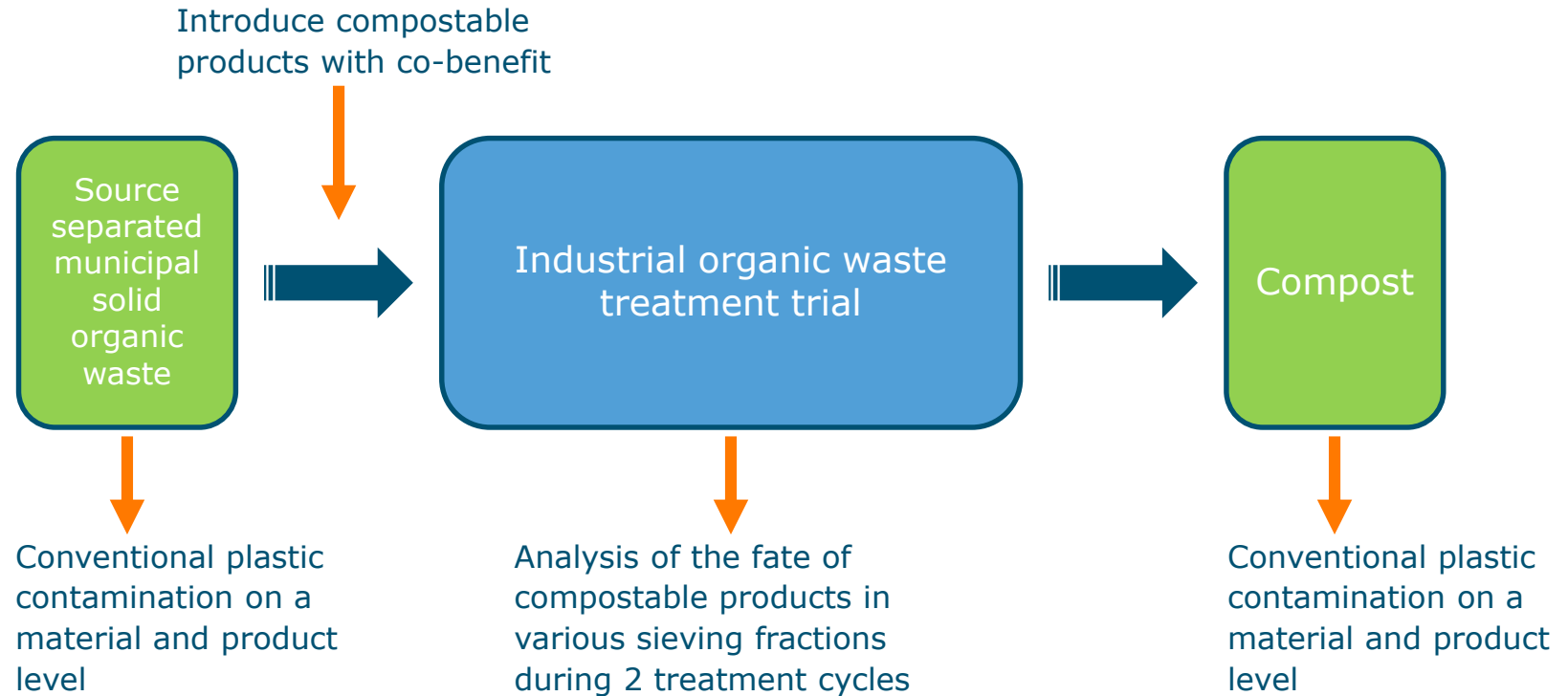
To explore
the potential
of nature to
improve the
quality of life



Background of the composting study

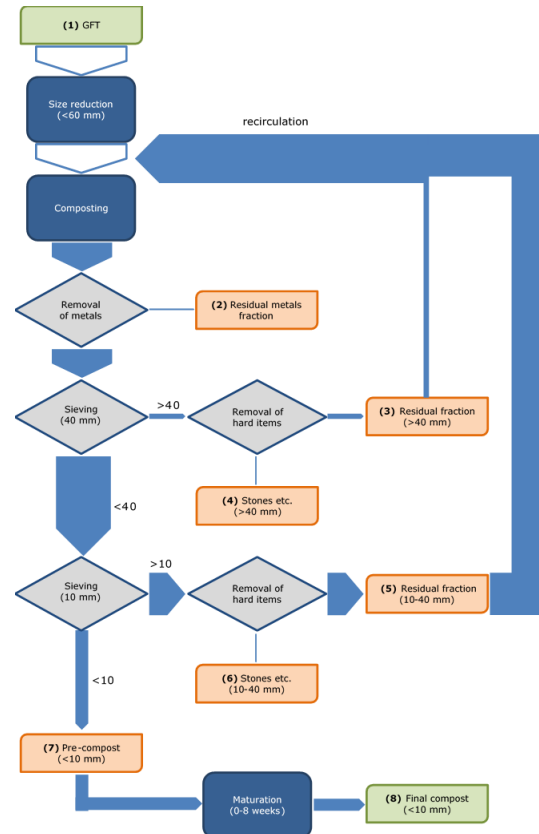
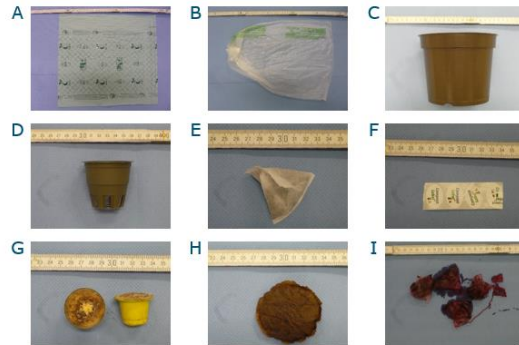
- >20 years of debate: acceptance of compostable products in biowaste bin (source separated municipal solid organic waste)
 - Waste treatment sector (Vereniging Afvalbedrijven, VA)
 - Companies producing bioplastics (Holland Bioplastics, HB)
- Current problem for VA: increase in pollution of biowaste stream
- Need for clarification: is the standard for compostable products still applicable for the current practice?
- Do certified products disintegrate fast enough in the current practice?

Scope of the study



Approach of the study

9 different test products:
biowaste collection bags,
plant pots, tea bags,
coffee pads, fruit labels,
coffee capsules,



Introduced in the process:
as such and in mesh bags

Analysis of the fate during
2 treatment cycles



Summarizing findings (1 of 4)

- ~20% of the reactor output is compost (<10 mm)
- ~80% ends up in residual fractions
 - ~70% in 10-40 mm fraction (always recirculated)
 - ~10% in >40 mm fraction (usually recirculated)
 - <1% in the rest
- Main residual fractions: predominantly organic matter (consistent with short residence time) and some plastics
 - ~1% in 10-40 mm fraction, ~8% in >40 mm fraction
- Plastic fractions: predominantly non-compostable plastics

Summarizing findings (2 of 4)

- Some test products were actually found in residual fractions
 - In >40 mm fraction: predominantly biowaste collection bags
- Some plastics found in the compost fraction (<10 mm) but no compostable products identified

Summarizing findings (3 of 4)

- One waste treatment cycle (11 days) was sufficient for the PLA plant pot (product D) to completely disintegrate.
- Most other products needed more than 1 waste treatment cycle to fully disintegrate (including banana skin and orange peel references)
- None of selected test products are likely to cause visual contamination of the final compost by plastic residues (except for brightly coloured coffee capsules)
- None of selected test products are likely to increase the residue to be discarded (further decomposition during recirculation)

Summarizing findings (4 of 4)

- Extrapolating findings to other organic waste treatment facilities: some selected test-products will end up in discarded residue fractions depending on:
 - Pre-treatment processes installed (sieving/grinding/...)
 - Residence time in composting phase
 - Turning frequency and impact of shear/mechanical force during pre- and post-treatment
 - Recirculation/discarding protocol for residues

Questions?

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The full research report is available for free on:

<https://edepot.wur.nl/514397>

