

Twinning Project

PHARE RO/06/IB/EN/06

Romania - North Eastern Region

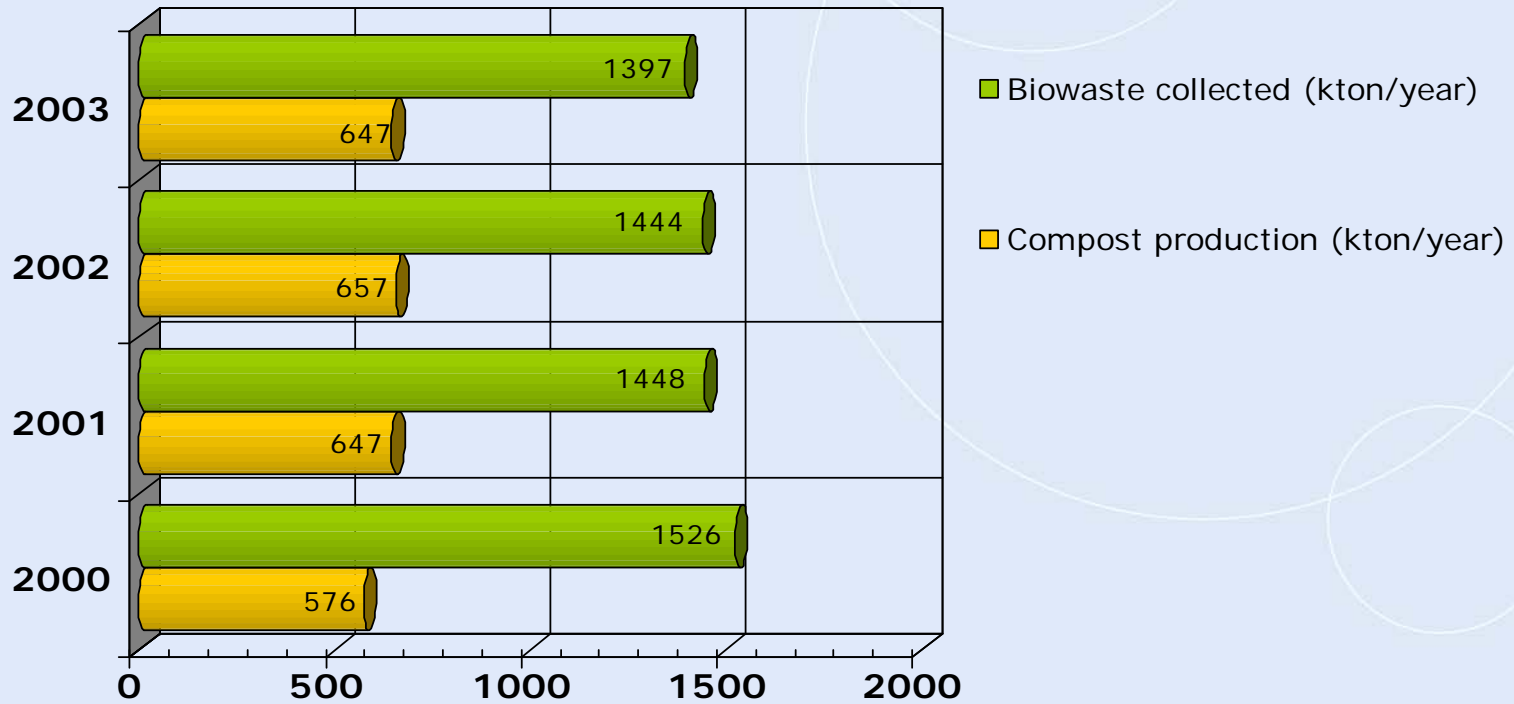
Application of Biowaste Compost

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Compost production in NL



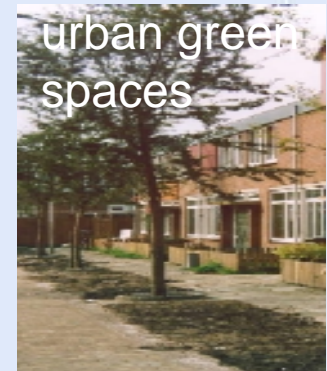
Modes of application



fruit



retail, consumers



urban green spaces



agri- and horticulture

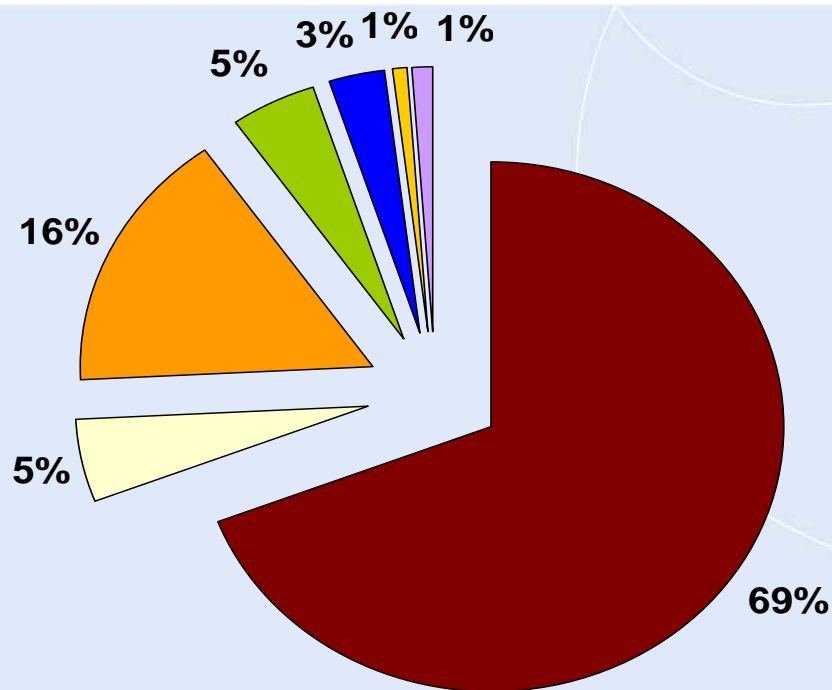


recreation/greens/landscaping





Amounts to sectors



- | | |
|------------------|--------------------|
| Agriculture | Greenhouses |
| Potting soil | landscaping/greens |
| consumer | horticulturist |
| soil remediation | |



Agri- & horticulture

- Soil amendment
- Enhancing physical, chemical, biological properties of soils
- Peat replacement
- Ingredient in container media
- Bagged for retail consumers



Peat replacement





Soil amendment

- Arable (harvested cropland, cover crops)
- Bulbs
- Tree nursery / silviculture
- Cutting flowers
- Field grown vegetables



Organic Soil Improver





Compost as soil amendment - 1

- General: Enhancing physical, chemical, biological properties of soils
- Plant nutrition
 - Directly (supply with NPK)
 - Indirectly (effect on nutrient cycling)
- Soil improvement: mainly organic Matter
- Suppression plant diseases and pests



Compost as soil amendment - 1

Soil Organic Matter (SOM)

- Compost is a stable source of SOM (>20%) and improves soil organic matter content (SOM)
- Reduction of soil organic matter content is of worldwide concern
- SOM: key parameter for many functions and processes of soils



Suppression of diseases - 1

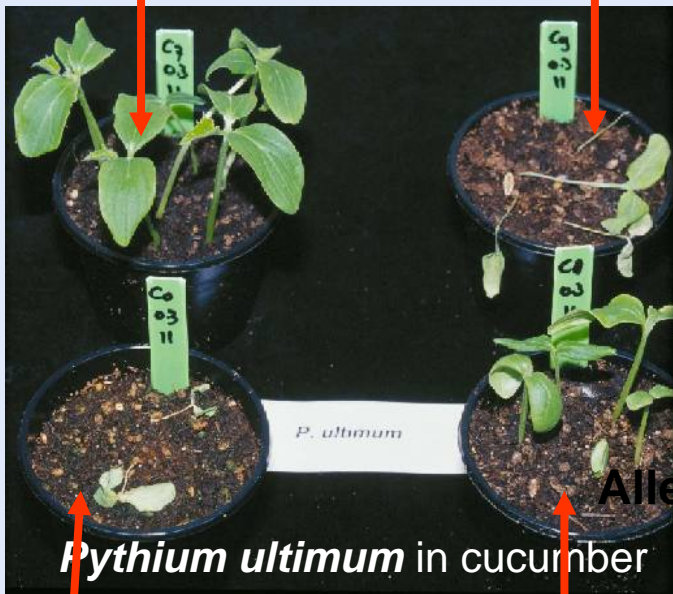
- Competition for nutrients by beneficial mo's
- Antibiotic production by beneficial mo's
- Successful predation against pathogens by beneficial mo's
- Activation of disease-resistant genes in plants by composts
- Results in less pesticides



Suppression of diseases - 2

Compost with good disease suppressive

Compost without disease suppressive



Control

Compost with medium disease suppressive

Alleen veen

Pythium ultimum in cucumber

medium disease suppressive compost



Rhizoclonia solani in carrots

Control

Compost without disease suppressive



Mitigate Global warming

- **Carbon Sequestration**

CO₂ in compost will be in the soil and be released slowly to the atmosphere

- **Replacement of peat**

1 m³ of peat replaced by compost reduces CO₂ emissions by 247 kg



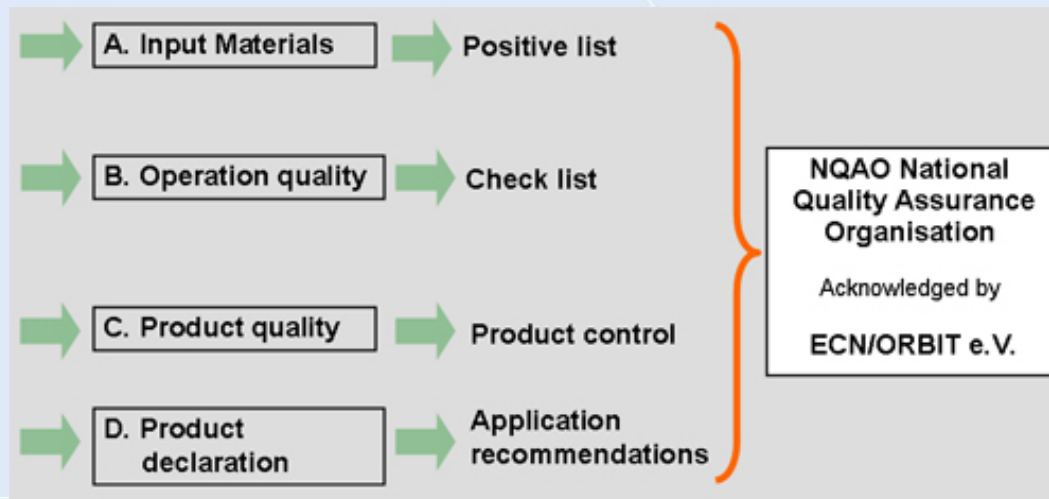
Watch out for contaminants

- Heavy metals (standards for Cd, Cr, Cu, Ni, Pb, Zn, As, Hg)
- No visible impurities: plastics, glass, stone, metal
- Stability level of organic matter (degradation far enough)
- No negative effects on plant growth (salts, fatty acids)
- Hygienic: free of human pathogens
- Free of germinable seeds and plant parts
- Favorable C/N ratio
- Favorable contents of nutrients and organic matter



Compost quality certificate

- Quality of compost can be very diverse
- Quality standards and their control are needed to guarantee:
 - environmentally safe application
 - successful marketing and markets



More info: <http://www.compostnetwork.info/>



Aspects of compost product quality

Various EU countries have established quality criteria for biowaste compost

- Heavy metals
- Visible impurities (plastics, glass, stone, metal)
- Stability level of organic matter (degradation far enough)
- No negative effects on plant growth (salts, fatty acids)
- Hygienic: free of human pathogens
- Free of germinable seeds and plant parts

Austria	Belgium	Germany	Italy	NL



Conclusion

- Compost(ing) is indispensable for the increase of the sustainability of agriculture and for the management of greenhouse gases
- Composting of biowaste and compost application in agriculture has many positive effects
- Most of these effects are hard to quantify and to express in monetary units
- Criteria are necessary to guarantee quality of compost and assist marketing



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