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A new analytical approach to determine compost quality



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Compost quality



The diagram illustrates the composting process. It starts with a brown 'BIOTONNE' bin for household waste and a smaller 'KOMPOST' bin for garden waste. An arrow points to a pile of organic waste, which then leads to a 'Humification' stage shown as a large pile of compost with steam rising from it. A final arrow points to a person holding a handful of dark, rich compost. Small inset images show various types of organic waste and soil textures.

Parameters to determine compost quality

- heavy metals limits
- hazardous organic compounds limits
- impurities limits
- no negative effect on plant germination
- positive phytosanitary effect
- plant available nutrient contents
- **stable organic matter**

limited **negative** properties

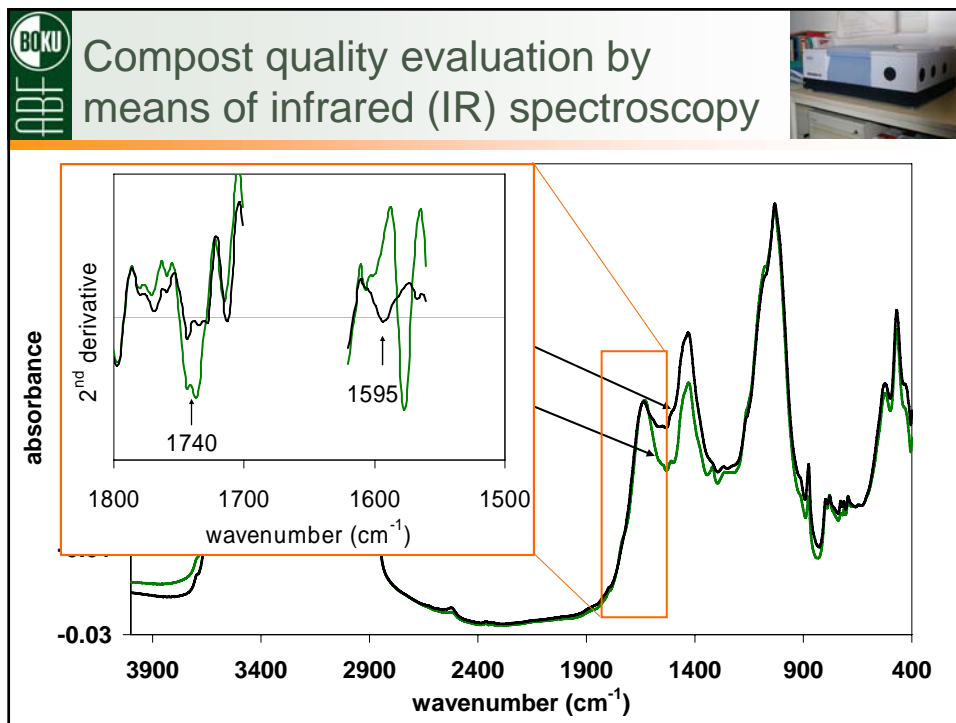
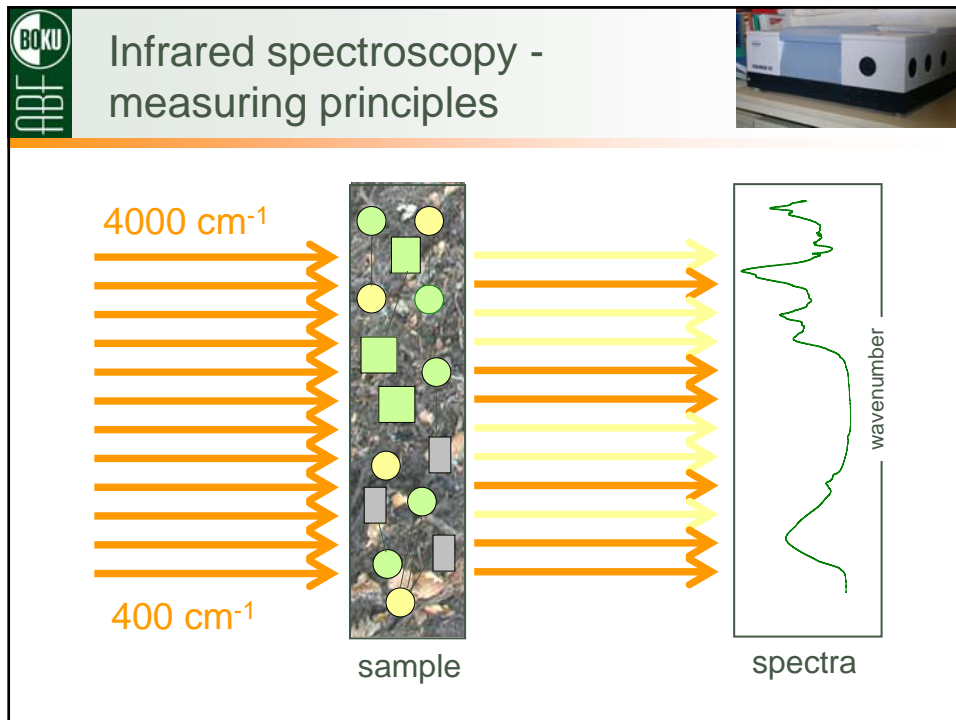
additional **positive** criteria

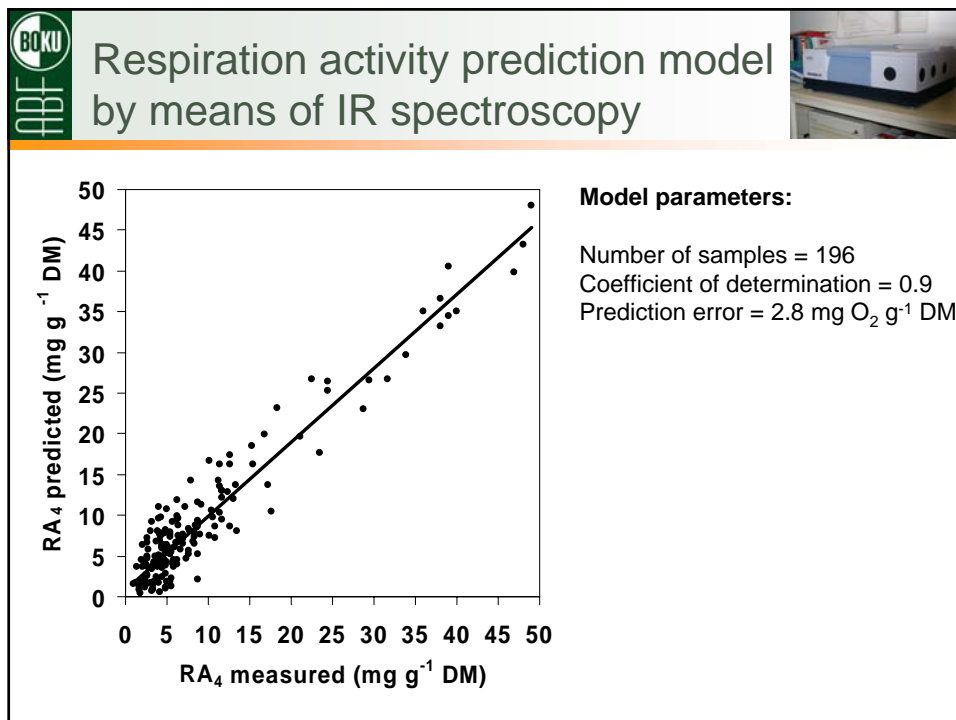
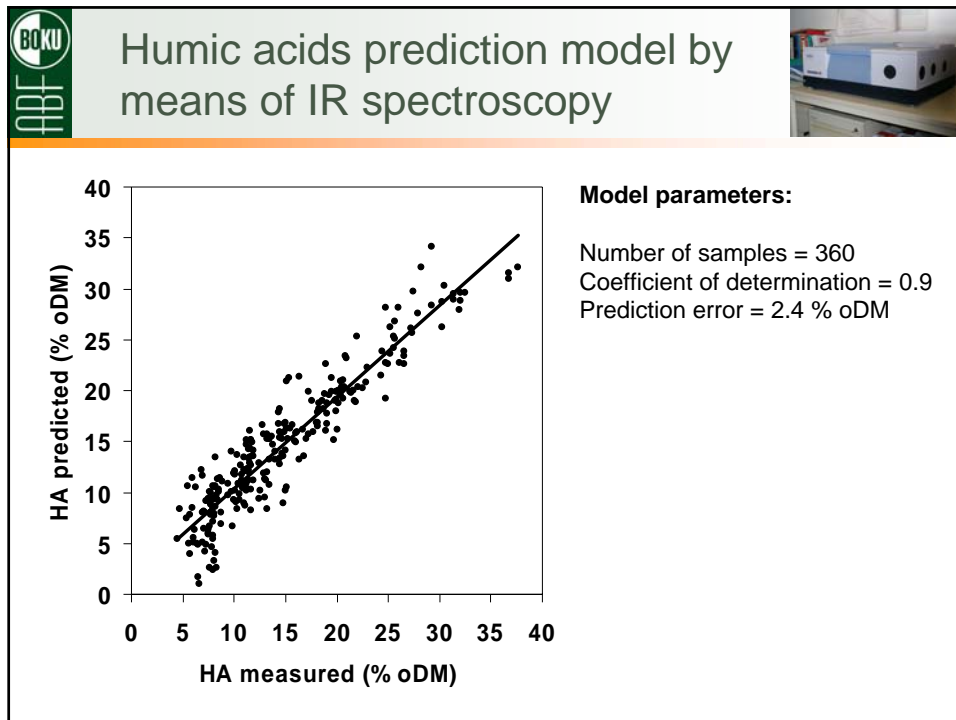
Application of infrared spectroscopy and thermal analysis

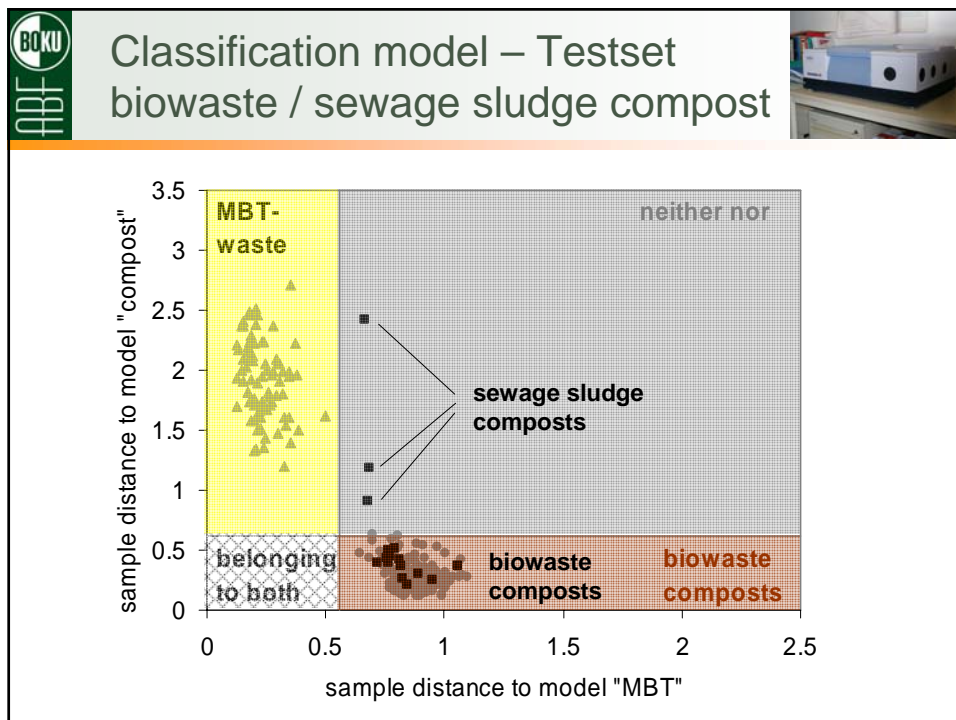
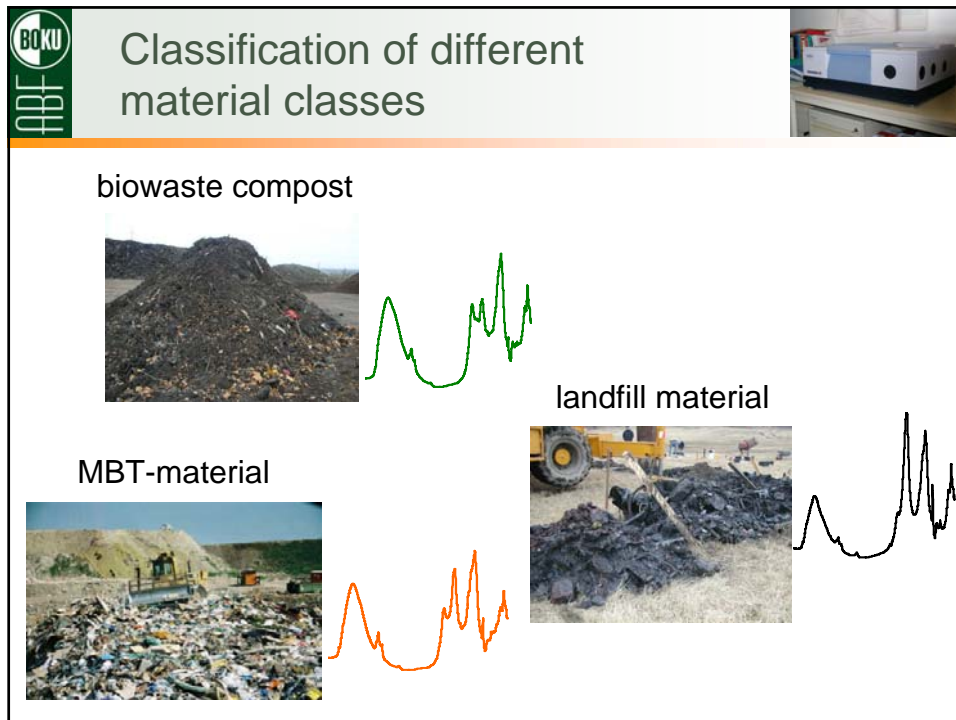
Infrared spectroscopy

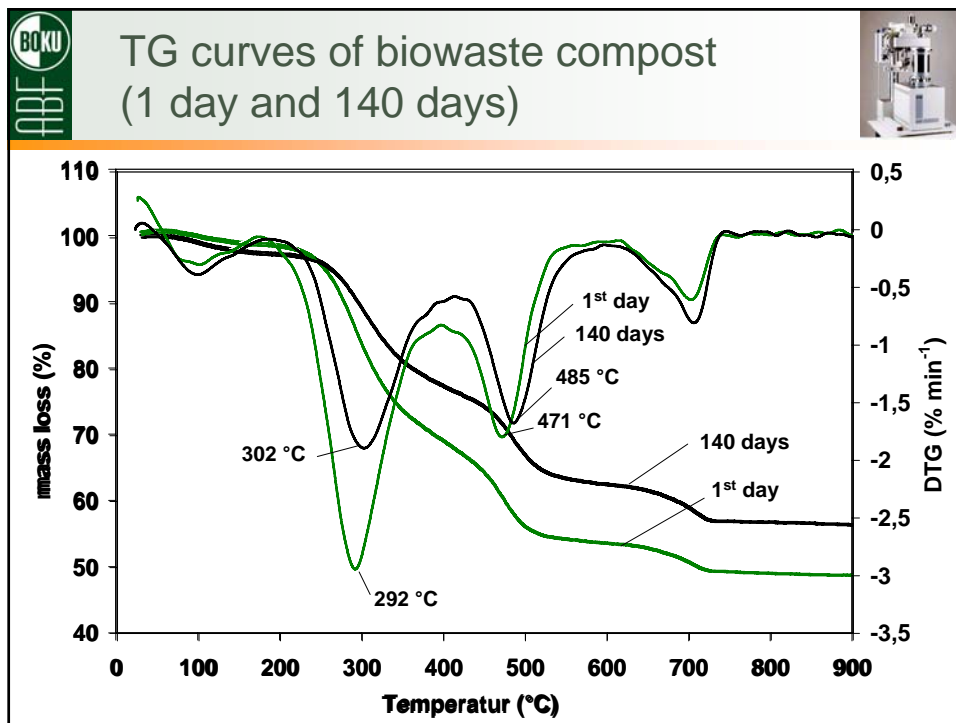
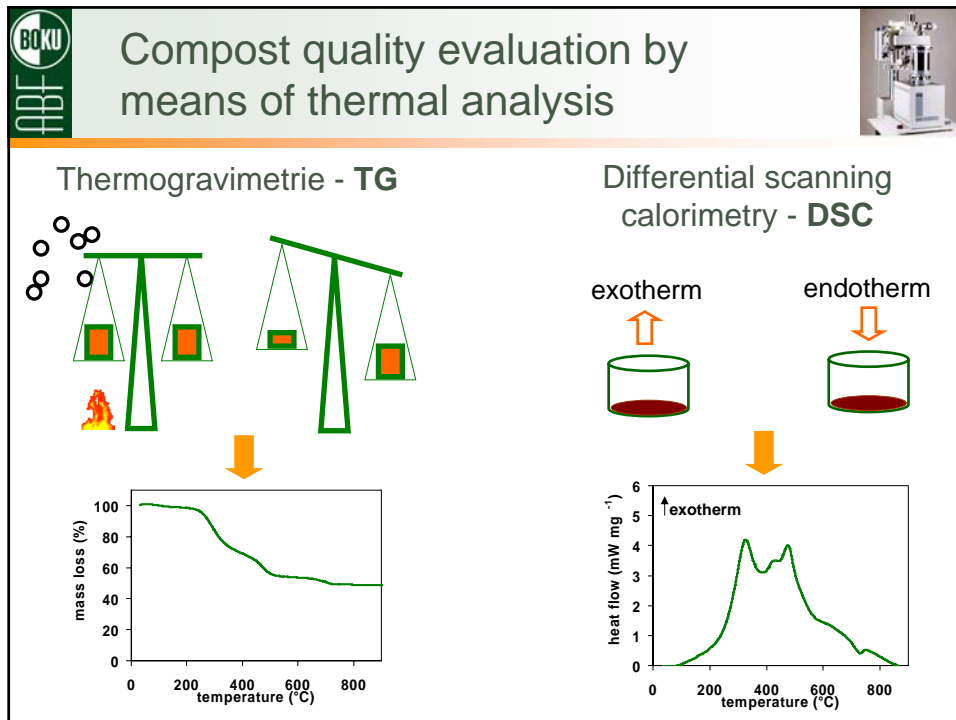
Infrared light

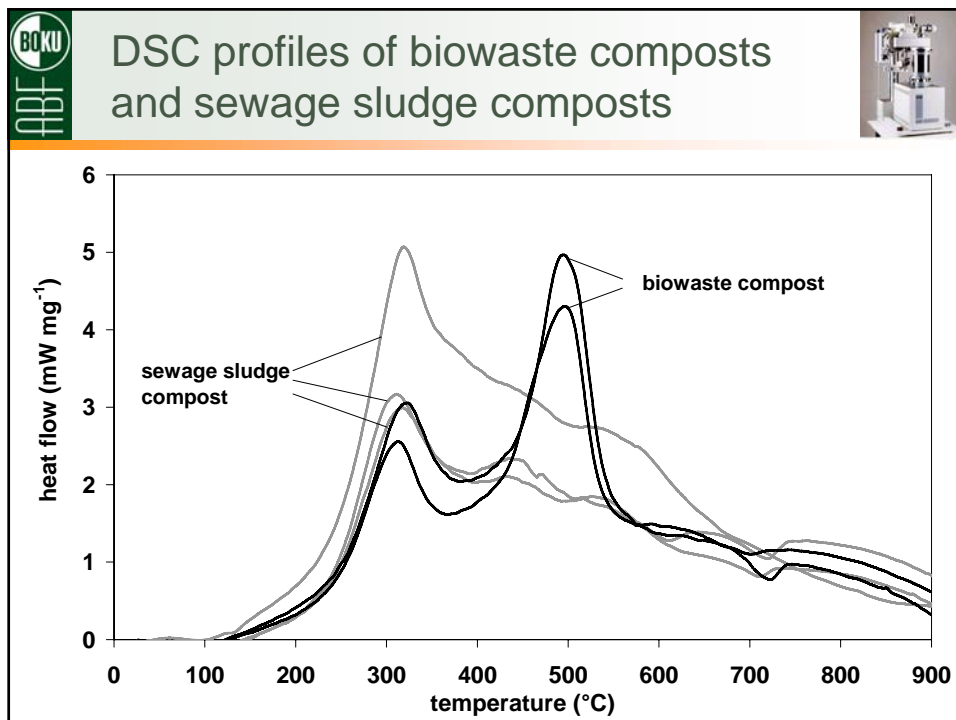
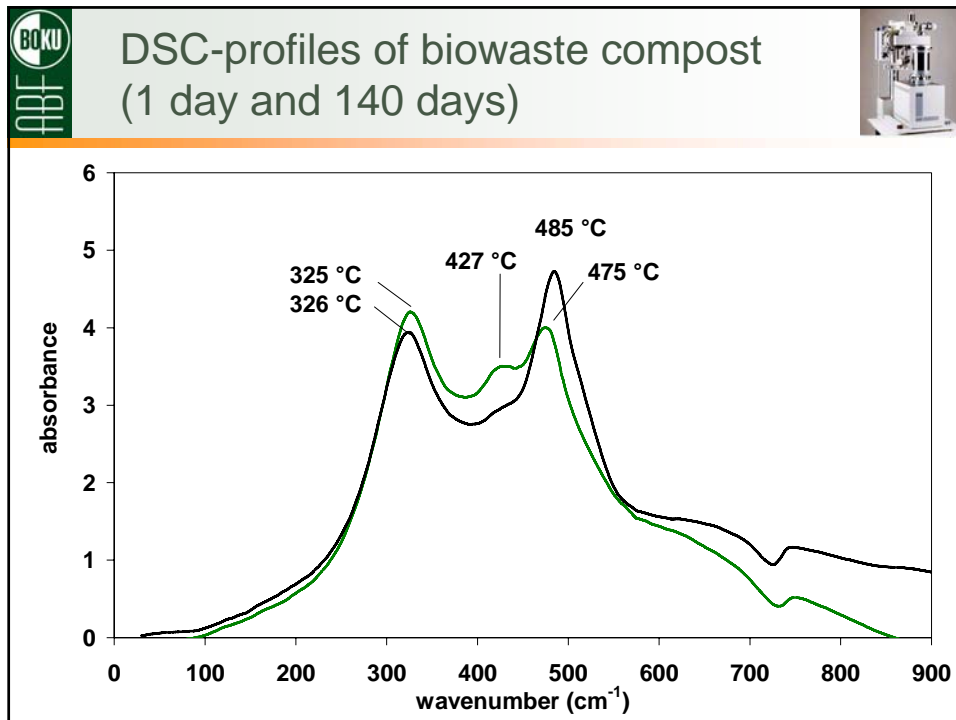
Thermal analysis















 **Conclusion**

- **Infrared spectroscopy** and **thermal analysis** are analytical tools to determine compost quality
- The application of **evaluation tools** e.g. parameter prediction, classification are promising for practical application
- Evaluation tools for infrared spectroscopy are available
- Evaluation tools for thermal analyses are currently developed
- Current activities: Near infrared spectroscopy analyses

 **Booklet**

Peter Lechner (Ed.)
Humus - A quality criterion for composts
Infrared spectroscopy (FTIR)
A new evaluation tool and its application in practice



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Thank you for your attention!

