



The situation of Hungarian composting and green waste treatment

Tibor Nemcsek
CEO

History of composting

- ▶ Composting is one of the oldest recycling processes of mankind, because of the development of the chemical industry, the application of composting faded into the background. Evidences for composting can be found in the Bible and also in China 4,000 years ago, accordingly the procedure was already known ("hot fermentation"). Also in our European culture we could find several references of composting, from the ancient Rome to the Middle Ages until the present day. In the 10th century, the Arab scientist Kitub al Falakab described in great detail the preparation and use of compost in his work "Handbook of Agriculture".
- ▶ Already in the 13th century, the rules of the English abbeys prescribed the use of compost to save yield capacity of the soils. In the 1850s, a major wave of fertilization with artificial fertilizers began in Europe's countries, which is why the use of organic fertilizers, including compost, was significantly reduced. In 1859, Johnson described the process of composting from different materials.
- ▶ The method of composting was later on worked out by several researchers together. The method itself was brilliant for its simplicity and applicability. It is important to note that this was the first systematized form of composting in modern times.

The concept of composting

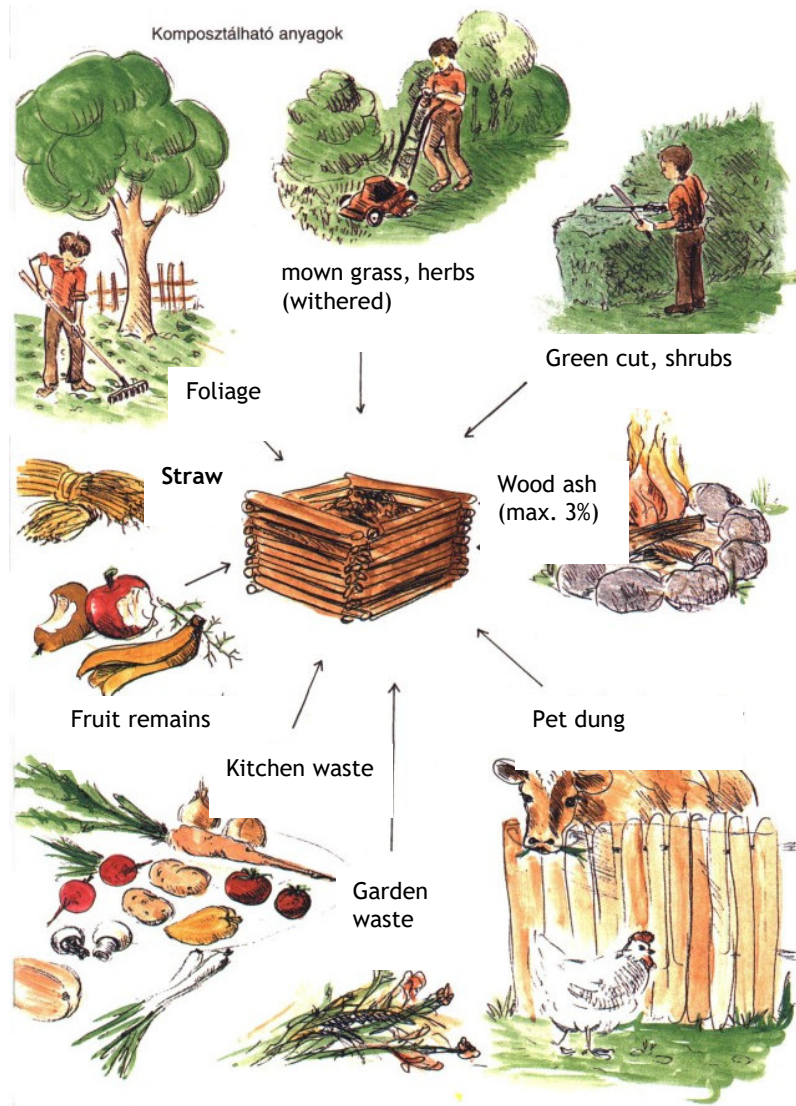
Composting is the degradation of separately collected biowaste with oxygen, as a result of this process you get enriched, humus-rich soil: this is called compost.

Aims of composting: reducing the amount of waste;
improving soil quality through the return of organic substances;
structural improvement of soil;
improvement of nutrient absorption;

Benefits of compost for the soil:

In the humus content of the compost, nutrients are present in such a form that the plants can easily adsorb them;
due to the water-binding capacity of the compost, the water balance of the soil improves significantly;
increase of the biological activity in the soil;

The situation of Hungarian composting and green waste treatment



Composting

Nature itself offers
the opportunity and
the raw material.

I compost everything
I can!

Composting

Nature itself offers the opportunity and the raw material. I
compost everything I can!

Large-scale industrial
dimensions!



In rural areas, public service
providers are making more
and more compost baskets
available to the population.



Green waste treatment guidelines for the National Waste Management Plan (OHT)

By 2020, the distribution of own and municipal composting and the local recycling of green waste must be achieved.

The dissemination of natural substances in soil management, fertilisation and their methods of use must be encouraged, such as the development of the economy of organic substances, compost from green waste, etc.

The agricultural use of compost from agricultural and food waste and as well by-products must be encouraged.

- ▶ The final disposal of biodegradable plant by-products and waste in landfills must be restricted or stopped. Decentralised (self-, local- and settlement-) composting should be distributed, mainly at the source of organic waste.
- ▶ Composting plants and biogas plants should be built simultaneously with the development of the quality assurance of compost.

Green waste

The collection and disposal of green waste, which is the responsibility of public services, should be ensured in a certain way and with a minimum frequency.

Collection



- ▶ Separate collection
- ▶ Bundling
- ▶ On-site crushing, disposal of crushed pieces
- ▶ waste collection site, recycling centre or
- ▶ other possible acceptance points

Disposal



- ▶ At least ten times a year in areas built up with family houses
- ▶ At least four times a year in residential areas



Composting process

Activity of microorganisms and modification of organic matter

initiated phase

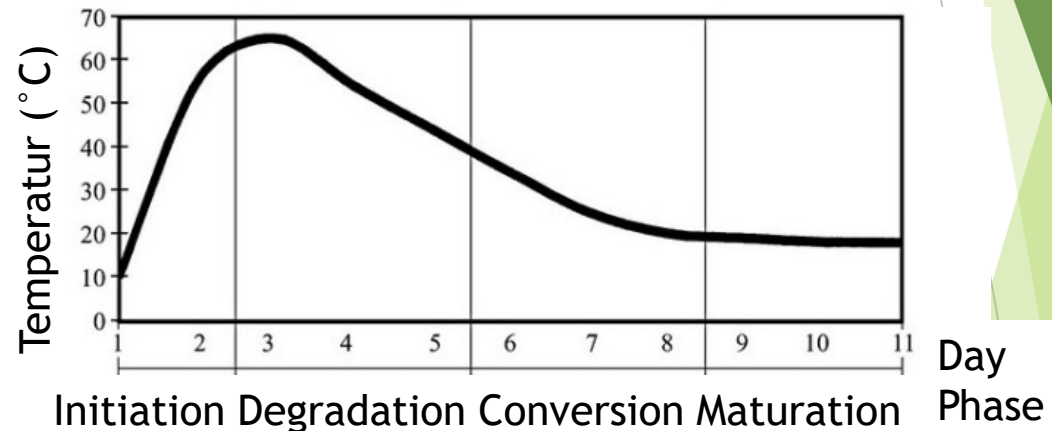
- Phase of degradation
- Phase of conversion
- Phase of maturation

Temperature change

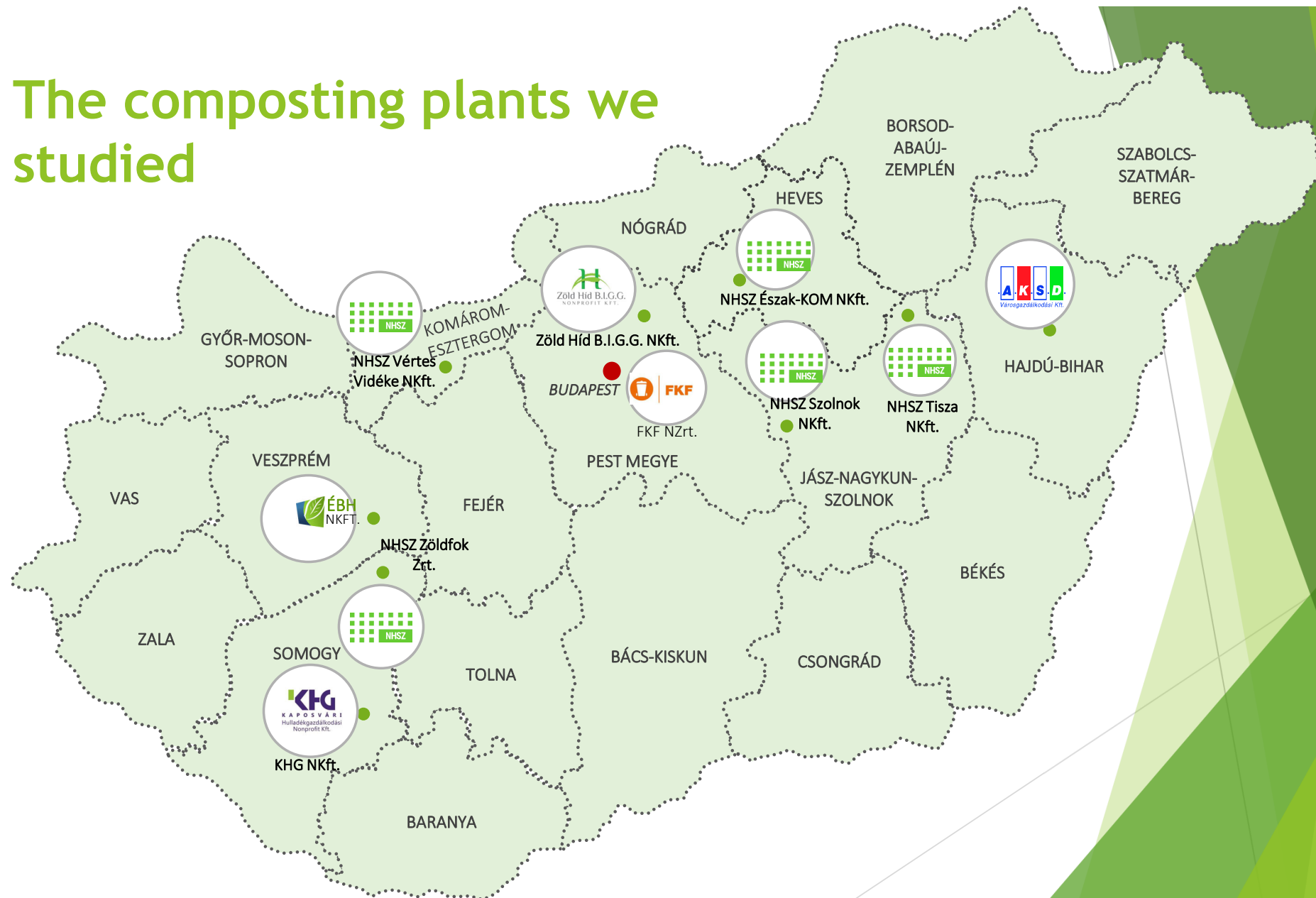
- Warming
- Heat phase
- Cooling
- Temperature, environmentally dependent

The processes

- Beginning of the reaction
- Processes of degradation
- Processes of construction
- Humus formation, synthesis

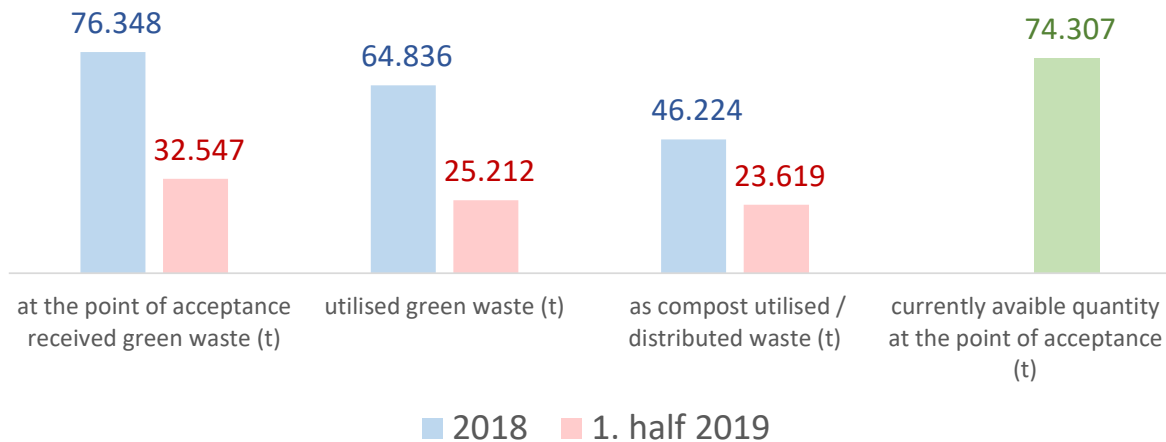


The composting plants we studied



Data from the studied composting plants

- ▶ Quantity of green waste accepted at the receiving point in 2018 and in the first half of 2019 (own levy, external levy, levy at the recycling centre),
- ▶ Quantity of green waste used and registered as compost in 2018 and in the first half of 2019 (t)
- ▶ Quantity recycled / distributed as compost in 2018 and in the first half of 2019 (t)

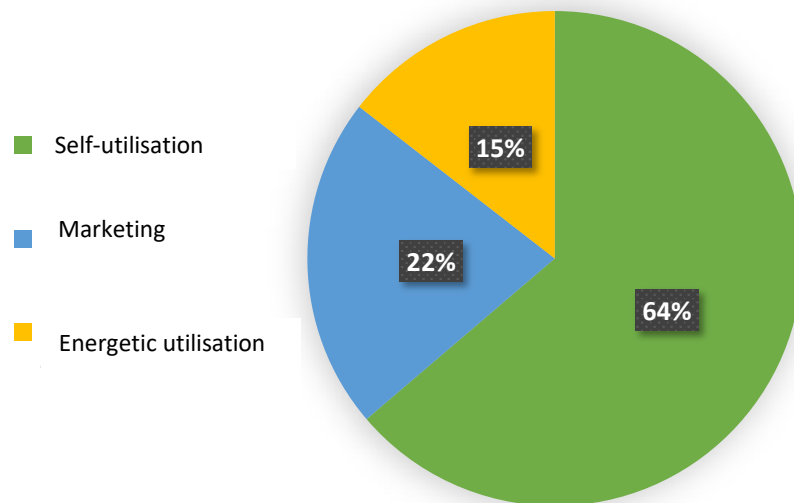


Data from the studied composting plants

Type of utilisation

(2018, or rather 2019 in relation to the first half of the year)

- ▶ Self-utilisation (e.g. cleaning)
- ▶ Marketing (e.g. as quality compost for retail sale)
- ▶ Energetic utilisation



Special features for the overall picture:

There are such plants that use 97% of the compost energetically

One plant can distribute 100% of the resulting compost

I compost everything I can!



In 2018 and 2019, several educational institutions were or rather will be equipped with such compost baskets from various project funds.

Thank you for your attention!

