

The technology of windrows composting is used at the experimental composting facility at FH MENDELU. When using this technology, the input materials are formed into windrows of a triangular profile. The total duration of the composting cycle depends mainly on the temperature of the environment and ranges from 12 - 16 weeks. The composting facility's production capacity is 105 t·year⁻¹.

THE FOLLOWING INPUT MATERIALS ARE USED TO MAKE COMPOST AT THE EXPERIMENTAL COMPOSTING FACILITY

CUT WOOD CHIPS



LEAVES



CUT GRASS



POMACE



WASTE FROM FRUIT AND VEGETABLES



THE COMPOSTING PROCESS CONSISTS OF THE FOLLOWING PHASES

ESTABLISHING AND FORMING THE WINDROW

The input materials affect the composting process and the resulting quality of the compost. This is why, when creating the windrows, it is important to adhere to the correct recipe with regard to the C:N ratio (35:1 is optimum) and input materials of the correct particle size. Wood and stem material should be crushed or chipped before placing in the windrow. The development of the key parameters, i.e. temperature, moisture and oxygen content in the windrows, must be monitored during the composting process.



TURNING

Turning is one of the most important activities affecting the progress of composting, during which the individual components in the windrows are mixed and, more importantly, the mass is aerated. This activity is carried out using a tractor-mounted compost turner at 7 - 14 day intervals. Aeration has a positive effect on microorganism activity and is usually linked to an increase in temperature within the windrow.



SIFTING

After completion of the whole process, the resulting compost is sifted. During this phase, the finished fine compost is separated from other components, which have not broken down fully during the composting process. This separated waste is added to new windrows, where it continues to break down and also acts as an inoculant due to the microorganisms it contains.



APPLICATION OF COMPOST

Mature compost is added to substrates, used as an organic fertiliser for production and decorative areas, and as a regeneration and reclamation material. The results of executed experiments indicate that compost has a positive impact on improvement of the physical properties of soil, it reduces soil erosion and improves water retention.

