The composting process.

Decomposition phase: two to three weeks. A sufficient volume (approx. 1 cu-metre of a good mix of shredded material is needed to create high temperatures. Quick heating, from 40 ℃ upwards, warmth-loving fungi and spore-forming bacteria begin to break down the cellulose, and the temperature increases to 65—70 ℃. The thermal phase destroys weed seeds and harmful organisms.

Conversion phase: a further 2 to 3 weeks. Fungal growth intensifies and the composting material becomes totally covered with mould fungus. The temperature drops to 35 ℃ and ammonia is organically absorbed by fungi. so there are no bad odours, but an increasing oxygen requirement. The compost shrinks in volume by about one third, as certain plant material decomposes quickly. Wet conditions prevent air from getting in and lead to poor decomposition. Dry or cold conditions stop the decomposition process.

Composition phase: several months, depending on the time of year and the ambient temperature, a lot of oxygen is also required, and the work is now completed by worms, isopods, soil mites. maggots and springtails. They break the material down into suitable nutrients for muckworms and compost worms. These combine mineral and organic substances in their intestines. enrich the compost with their faeces and build up stable humic forms and clay humus compounds. Plant tolerance is achieved at the end of this phase. A fungal odour (actinomycetes) is a forest smell and a sign of maturity.

The compost.
The plant decomposition process can be anaerobic (without air) or aerobic (with air). Without the supply of air the plants decompose badly in a vile-smelling metabolic process. Good compost is only created with a sufficient air supply. When new compost is laid down. “old compost” or coarse, filtered components of finished compost can be mixed in as a compost starter.

If shredded material is used there is no need for a compost starter. In principle, no additional fertiliser is needed if the C/N ratio is correct (25:1). The addition of stone dust can counter the development of odours, increase the mineral content and assist the formation of stable clay-humus complexes. Good compost must get really hot. If the self heating process fails, decomposition can be stimulated by turning and adding fresh grass cuttings. Material on the outside is brought into the middle where temperatures are higher. However, good-quality compost can also be achieved at lower temperatures, though this takes longer. Mature compost feels like a squeezed out sponge.

Maturity test.
Plant tolerance is tested by sowing cress in a vessel filled with an even mix of garden earth and compost. If the cress grows quickly without turning blue, the compost can be used without any problems. If there is poor growth and leaf damage, the compost is only suitable for mulching.