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Life Sciences and
Facility Management

Expert information for home composting

A quick guide to successful composting

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Home composting is a wonderful way to make good use of organic waste while at the same time contributing to environmental sustainability. Instead of disposing of kitchen and garden scraps in the ordinary rubbish, they can be transformed into nutrient-rich compost — a natural fertiliser rich in humus that promotes plant growth and closes nutrient cycles. The key requirement for this is having a sufficiently large garden where the compost can be used.

Ensuring the composting process works optimally, oxygen-loving bacteria, fungi, insects and worms break down organic waste. These tiny helpers decompose leaves, vegetable scraps and coffee grounds into valuable humus, which enhances soil quality and supplies plants with essential nutrients. Well-maintained compost remains low in odour; by ensuring the right balance of moist and dry, structured materials and regularly turning the compost, unpleasant smells can be avoided.

Beyond its ecological benefits, home composting also relieves pressure on municipal waste systems, as less organic waste needs to be disposed of. This not only reduces costs but also helps combat climate change by lowering CO_2 emissions from the transportation and industrial processing of organic waste.

Last but not least, it is simply a pleasure to observe the rotting process and to and make your personal contribution to the environment, and being rewarded a magnificent, thriving vegetable garden is a fulfilling experience. Home composting is sustainability in action — simple, effective and great for nature.

Space requirements and location

A composting area can be easily set up in your own garden. To ensure regular use, it should be easily accessible from the kitchen, even in bad weather. Ideally, the composting site should be partially shaded and sheltered from the wind to protect it from extreme weather conditions. The space needed for composting depends on the size of your household and garden. For a household of four, plan for 6 to 10 square meters of composting space. If you have more space, composting will be even easier to manage. Please also remember that you'll need enough space to use the finished compost. Avoid over-fertilising your garden by applying compost strategically to maintain a balanced nutrient level in the soil.

Composting methods

1. Wire mesh composter

Wire mesh composters are particularly suitable for smaller amounts of organic waste (a circa 4-person household) as they require only about one square metre of space. These composters can be fitted with a perforated plastic cover and a rain hood to ensure good air circulation while preventing excess moisture from rainfall. The primary purpose of the plastic cover is to prevent the outer edges from drying out. However, for proper wire mesh composting, two wire mesh composters are needed: one is regularly filled and fresh material is mixed in, while the other is left undisturbed to mature and can be emptied when needed. Placing the composter directly on natural soil allows beneficial composting organisms to access the material while preventing water from accumulating at the bottom.

2. Wooden slat composter

The wooden slat composter is also well-suited for small amounts of organic waste, as most standard models require only about one square metre of space. It is best to set up two composters so that one can mature undisturbed while the other is in use. Models with removable slats on one side make it easier to turn and transfer the compost. It is important that the slats are made of durable wood which does not rot easily, such as native larch.

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3. Rapid composter / thermal composter

Even a small garden has space for a compact rapid composter. These composters have a lid to protect the compost from excessive moisture. Some models include lateral flaps for easy removal of small amounts of finished compost, while others are lined with polystyrene on the inside to reduce heat loss through the walls. However, this insulation rarely leads to a significant temperature increase inside the compost, meaning thermal composters do not really live up to their name. This is because rapid composters have a relatively small volume and are usually filled with small amounts of organic waste at short intervals. As a result, only a minimal amount of heat is generated inside. The decomposition process in a rapid composter is usually no faster than in wire mesh or wooden slat composters.

4. Bokashi as a pre-treatment

The word ‘Bokashi’ comes from Japanese and means ‘fermented material’. The Bokashi system is therefore not composting as such, but rather a lactic acid fermentation process which pre-ferments organic material and stabilises it through its low pH value. This process is similar to silage treatment as an initial step before composting. Bokashis can be operated on a balcony or in a basement. They are started with a culture of micro-organisms (mainly lactic acid bacteria), often combined with a small amount of mature compost. In a second step, the so-called ‘humification’ or ‘soil formation’ occurs, which corresponds to aerobic composting.

When preparing bokashi, it is important to follow the instructions carefully: organic waste is chopped up, placed into the bokashi container and sprayed with the supplied microorganism mixture. Once the container is full, it is sealed so it is airtight and left to sit for six weeks, sometimes longer, e.g. over the winter. Following this, the material is mixed with garden soil or compost in a 1:4 ratio and left to mature for another three months in an open container, with occasional turning. After this final composting step, the material can be used as fertiliser in the garden. However, it is important not to use the contents of the bokashi container directly to fertilise plants, flowers or vegetables as it can harm them.

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Basic guidelines for compost management

Shredding and mixing
The recommendation is to chop coarse organic waste such as potted plants, shrub cuttings, cut flowers, straw and hay into pieces of 5 to 7 cm in size, using a shredder if necessary. When composting, ensure that sufficient structural material from the garden is added to moist organic waste from the kitchen. Newly added materials must be worked into the compost. Compact waste, such as paper-based coffee capsules, should be cut into smaller pieces to ensure effective composting.

What can and cannot go into the compost?

Suitable: From the kitchen and household: fruit and vegetable scraps, peelings, kitchen waste such as leftovers*, eggshells, coffee grounds, compostable paper-based coffee capsules, tea leaves and palm leaf bowls with home composting label. Small animal manure (only from herbivores), including feathers.

From the garden: loose plant residues, waste such as balcony and potted plants, leaves, fallen fruit, lawn and meadow clippings, cut flowers, shrub and tree trimmings, straw, hay and sawdust from untreated wood.

Unsuitable: Meat, meat waste, bones, plants affected by disease, cigarettes, cigarette butts, ash, vacuum cleaner bags, disposable nappies, cat litter, large amounts of animal excrement, oils and fats in large quantities, aggressively spreading and root-forming weeds, shells, animal carcasses, biobased and biodegradable materials without label for home composting, neophytes, textiles, heavily printed paper and metals.

Collecting the material

Kitchen waste should be collected in a waterproof container with a lid before being added to the compost. Containers with lids are useful to prevent insects from laying eggs in the compost. Additionally, waste should not be stored in the collection container for too long as mould and decay-causing pathogens can quickly develop. Therefore, kitchen containers should be emptied on a daily basis or at least every few days and thoroughly rinsed. Collecting organic waste has the advantage of accumulating larger amounts, which promotes the compost's self-heating process. This ultimately reduces the composting time required for maturation.

*Food scraps may be added to the compost only if the compost has been functioning well for several months. Newly added food waste must be mixed in thoroughly and covered with structural material or a mix of soil and compost.

Follow these basic rules!

- Chop: Chop organic waste into pieces of 5 to 7 cm in length, especially bulky waste like woody garden waste, paper-based coffee capsules and palm leaf dishes.
- Mix: Mix moist, nutrient-rich waste such as food scraps or grass clippings with an equal amount of dry, coarse material like mature compost, straw, hay or wood chips. Repeat this each time you add new moist material.
- Keep moist: The compost mixture should always be about as moist as a well-squeezed sponge. If the compost drips when squeezed, it is too wet; if it doesn't stick together compactly, it is too dry (fist test). Water as needed but avoid waterlogging.
- Cover: Cover containers or compost heaps with compost fleece or a lid.
- Turn: Turning involves flipping the material or transferring it to another compost bin. In home gardens, turning twice a year is usually sufficient. Turning the compost heap more often speeds up the decomposition process.
- Use of compost: The compost is usually mature after about 6 to 12 months. Signs that it is ready include the disappearance of compost worms, crumbly texture and a smell of forest soil. Sift out any non-decomposed wood pieces from the mature compost and spread the compost in moderation in spring and autumn. Recommended amount: 3 to a maximum of 5 litres per square meter per year.

Troubleshooting composting issues

Compost which is too dry
Compost which is too dry often has a greyish-white mould and smells like mushrooms. In this case, numerous woodlice are usually present. In most cases, this is due to too much dry material like leaves or shrub clippings being added to the compost and bulky materials not being chopped enough. This must be corrected by re-chopping, turning or adding moist organic waste or water (see above ‘keep moist’).

Compost which is too moist
If the compost bin is exposed to rain or too much moist organic waste from the kitchen is added, the compost will become too wet. This must be quickly corrected by covering the compost and mixing in dry material.

Bad odour
If the compost smells bad, an anaerobic decomposition process has begun because the air supply was too low. Larger quantities of grass clippings also start to smell unpleasant fairly quickly. Mix in some shrub clippings and/or mature compost on top.

Fruit flies
These small flies love to feast on the contents of the organic waste collection container as they mainly feed on overripe fruit. In summer, the waste can be covered with a bit of garden soil or mature compost. Adding rock flour also reduces the number of flies.

Temperature
Unlike industrial composting, garden compost rarely reaches temperatures above 50 °C for long periods. This means that pathogens are not sanitised and plant seeds and sprouting plant parts are not completely destroyed which is why it is important to use suitable organic waste material.

Legislation on composting and anaerobic digestion by the Swiss Federal Office for the Environment – FOEN

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