

# Green Johanna



**A handbook on the art of composting**

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# Creating a recycling society

Food waste and garden rubbish don't disappear just because we've thrown them away. Too often, they are piled in with general plastics and other household detritus and condemned to become landfill or to be incinerated. But rules are gradually being introduced to encourage everyone to pay more attention to exactly what they are throwing away, and to consider the practical alternatives that are available.

So whether you need to comply with rules, or simply because it is fun and economical, it's a good idea to learn how to compost.

Natural waste breaks down naturally. Plants absorb nutrients, grow, die and decay ... thus creating new nutrients. Properly managed, more than half of the mountain of domestic and garden waste could be dealt with in this way.

Composting not only reduces the amount of waste in the rubbish bin, it also lowers the cost of rubbish collection. Important nutrients are returned to the soil and expensive artificial fertilisers become redundant. Most important, composting does the rest of the world a great service by reducing the waste mountain.

# This is Green Johanna

GREEN JOHANNA is a unique closed, hot composting container, designed in Sweden. GREEN JOHANNA provides good ventilation, is easy to empty, and is available with an insulating winterjacket which allows successful composting throughout the year.

## The lid

closes around the container's ventilation system. The vents are holes with a diameter of 4.5 mm. Simply by turning the lid, even when it is locked, it is easy to regulate air circulation and the temperature depending on the season.

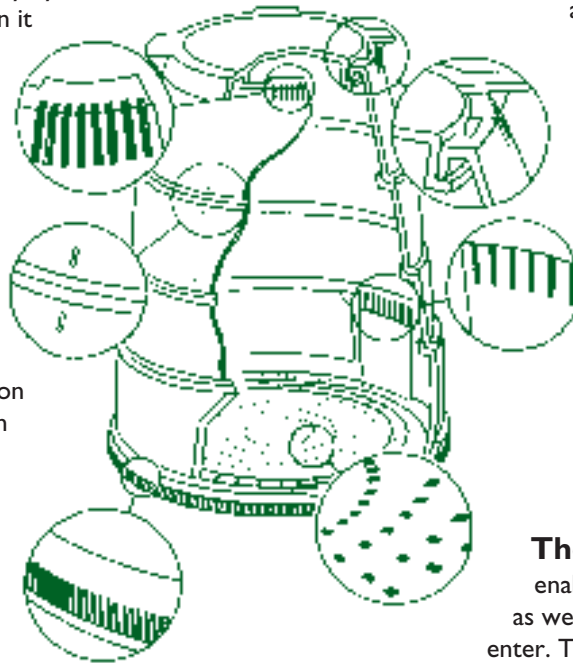
## When

### assembling

the GREEN JOHANNA the arrows on each section of the bin must be kept in line.

## The round shape

ensures that there will be no cold corners and that the heat is spread more evenly through the compost.



## The cone-shaped design

ensures that the compost does not stick to the sides and instead sinks down towards the centre. This enables air to circulate, oxygenating the compost.

## Sliding doors

on the front and rear make it easy for you to inspect the ongoing process and to remove the compost when it's ready. The simplest way to remove the compost is to rake it out with the stirring stick.

## The base plate

enables both good ventilation as well as allowing worms to enter. The holes in the base plate have a diameter of 4.5 mm, which means that mice and rats cannot penetrate the composter. Four inward-facing air vents lead in from the base plate, allowing air upwards into the container.

## The winter jacket

is made of foam polyethylene. The winter jacket should be fitted when the average outdoor temperature consistently falls below 5°C, and removed when the temperature is constantly above 10°C. It is essential that the winter jacket is removable during the process, or otherwise the compost will burn, in which event the microorganisms die and the process is halted.



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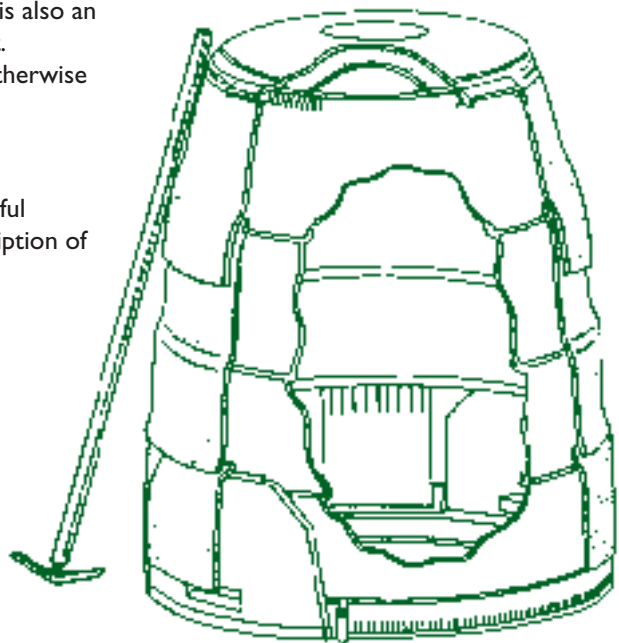
## The stirring stick

is an accessory which helps you aerate the compost effectively. It is made of wood and has two movable metal blades at one end. It is also an ideal tool for removing the final compost. Do not aerate deeper than 10-15 cm. Otherwise you will disturb the ongoing process.

## Warranty

Green Johanna helps you make a successful compost. You will find a detailed description of making compost in the handbook.

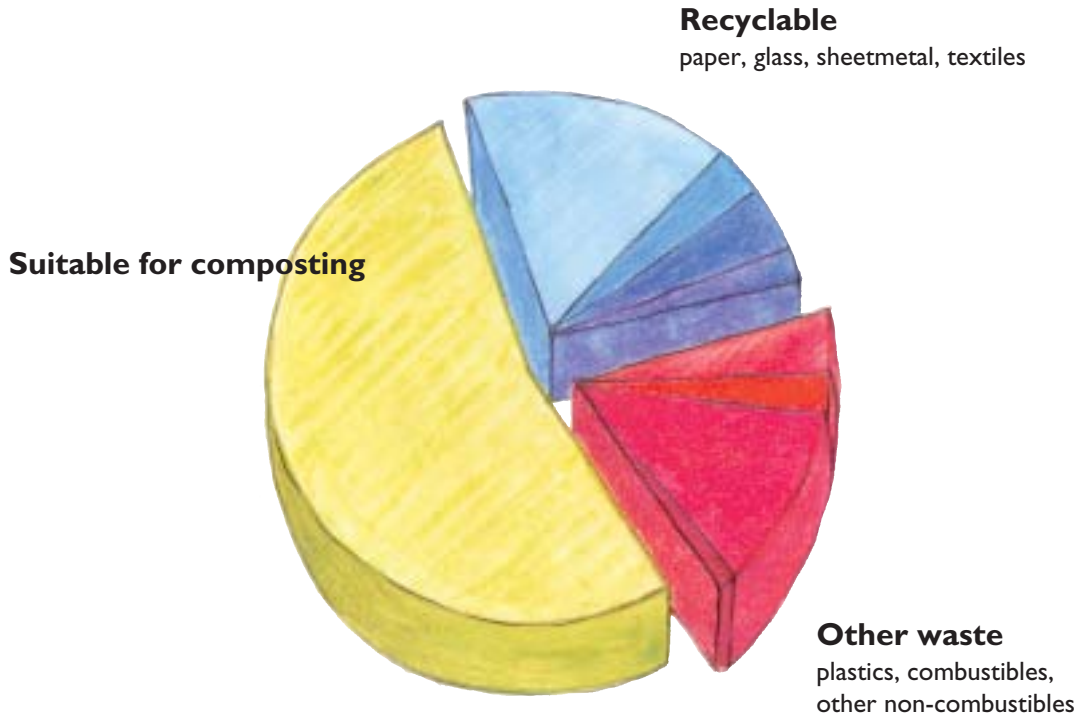
5 years warranty.



# Why make compost?

The waste mountain is a major problem, yet more than half of our rubbish is biodegradable and can be composted. The nutrients that we take from the earth are now primarily replaced with artificial fertilisers which are expensive to manufacture. Natural nutrients, which are free and can be found in our rubbish bins, currently lie on a waste mountain which is becoming ever larger and more impossible to control.

But despite all the gloomy figures about how much we waste and throw away (320 kg of rubbish per person per year), the future is looking brighter. More and more people are beginning to participate in Nature's cycle and are becoming conscious about what we buy, use and throw away.





## Start at the kitchen sink

This is where you must begin separating the glass, plastic and metal from the material which can be composted. Simply add another bin in your kitchen and separate the waste that can be composted from that which cannot.

All food waste can be composted: vegetables, fruit, dairy products, bread, meat, bones, fish remains, soup and egg shells. Coffee filters

containing coffee grounds, tea bags, household paper, egg cartons, and wilted flowers and pot plants can also be added to the compost.

Grass clipping, leaves, twigs, weeds, bark, etc. can also be composted. It is recommended to cut the waste into small pieces, as this gives the micro-organisms more surface area to work on, producing compost more quickly!

# This is how you do it.

## 1. Where should it stand.

Stand the container level on earth or grass in a shady corner of the garden. The container should be in as sheltered a location as possible and not too far from the house.

## 2. How do you start?

Cover the whole base plate with a looser layer of twigs and other coarse garden material to a depth of 10-20 cm. This should be covered with a layer of fine garden waste, followed by mature compost or soil. You can now begin to add your household waste. In the winter, you follow the same process, also adding one or two bucketfuls of compost from an ongoing composting process.

## 3. The importance of layering

It is important to layer garden and household waste properly. The best combination is one part garden waste (or soil, planing shavings, sawdust) to two parts kitchen scraps. Layers of one substance should never be too thick. Don't forget to scatter and mix the material as finely as possible, as this helps to speed up the process.

## 4. Aerating

Mix and aerate the uppermost layer of the compost every time you add new material. This ensures that the micro-organisms, which live and work in the compost, are able to do their job successfully. Once in a while, it is necessary to aerate the compost deeper down. This is done by carefully moving the stirring stick up and down in the compost.



## 5. Covering new waste.

Always cover the new household waste with garden litter. It is your own advantage to make your own from hedge clipping, trimmings from bushes and trees and other garden waste, simply by grinding it in a compost mill. This is the best litter for your compost and, during the autumn, you should save garden waste to use in winter.

## 6. When is it ready and how do you empty it out?

Depending on the conditions the compost will be ready after four to six months. It looks and feels like soil, smells good, is pleasant to the touch and crumbles readily. The easiest way to empty your GREEN JOHANNA is to remove the composted material through the two doors at the base. That way, you'll only get mature compost, and you'll avoid having to sort and start the process over again. It's even better if you have two or more JOHANNAS, as you'll be able to let the compost in one mature fully while you continue adding to the other. Try to organise your composting process, so that you have humus ready in time for spring, when you need the nutrients for your plants.

## 7. Where do you put the mature compost?

The mature compost, which has become humus, can be spread on the earth all year round (e.g. around trees, bushes and on vegetable patches). The compost can be dug in, but if the mulch is not

ready, the decomposition process will continue and steal the oxygen from the plants. In the autumn, however, half-ready compost is ideal for digging in to the earth. You can also let the compost lie and mature in a simple container or in a covered heap if you do not need it straight away.

## 8. There is no better compost than home-made compost.

No soil is as nutritious and of such high quality as that which comes from a hot compost and which contains both garden and household waste. The compost produced in GREEN JOHANNA is a rich nutrient supplement for your garden.



# What do you need to be successful?

## Air

Oxygen in the compost is necessary for the millions of micro-organisms to be able to carry on their work. A lack of oxygen can cause the compost to smell bad, and cause the breaking down process to take longer. Add the compost material loosely so that oxygen is available throughout.

## Heat

As the micro-organisms break down the waste, heat is released. Temperature changes in the compost are controlled by the micro-organisms themselves and are important for the composting process. Different organisms work at different temperatures.

## Water

Without water, the composting process cannot begin, although subsequent watering is not usually necessary since both household and garden waste contain moisture. The compost should be as damp as a squeezed bath sponge.



# ed for composting to be

## Balanced amount of carbon and nitrogen

Micro-organisms require nutrition in the form of carbon and nitrogen to be able to work. Your compost should have a good carbon/nitrogen balance. For this reason, you should mix garden waste with the household waste. A good balance would be one part carbon-rich material (garden waste) to two parts nitrogen-rich material (household waste).



## CARBON

- Fresh sawdust*
- Wood shavings*
- Paper chips*
- Dry Leaves*
- Bark*
- Straw*
- Leaves*
- Fruit*
- Carrots*
- Potatoes*
- Mixed food*
- Grass mowings*
- Meat and Fish*

## NITROGEN



# The creatures in your compost

For successful compost production, you need heat – but not too much. GREEN JOHANNA has a removable insulating layer which makes it easier to regulate the temperature of the compost. This means that the compost does not dry out so easily, becoming too warm for the worms, insects and micro-organisms carrying on their important work.



## Mite

The compost's cleaner, smaller than a grain of sand. Leaves, rotten wood and old flowers are all part of its diet

## Worm

Eats decaying vegetable and animal matter.  
Worm paths aerate the compost.



## False-scorpion

A carnivore, has glands in its front claws and lives on nematodes, worms and larvae.

## Wood-louse

Feeds on decayed material in the compost.  
Its delicate, gill-like breathing organs require moisture.



## Springtail

As many as 100 million can be found in one cubic metre of compost! The springtail gets its name from the “jumping fork” under its stomach, which it uses to launch itself into the air. Springtails eat most compost material.



## Nematode

Lives on decaying plants, bacteria and fungi. One handful of compost can contain several million nematodes, invisible to the naked eye.

## Centipede

A vegetarian which lives on decaying plant material.



## Earwig

A nocturnal creature which avoids daylight. Some are carnivores while others eat almost anything.

This is only a few examples of what kind of creatures who lives and work up in GREEN JOHANNA

# Problems which can arise and how to remedy them

## **Flies in the compost.**

*Cause:* Insufficiently covered, nitrogen-rich compost.

*Remedy:* Stir the surface layer of the compost and cover with garden litter or earth.

## **Ants in the compost.**

*Cause:* Compost too dry

*Remedy:* Carefully water the compost and stir – the compost should be as damp as a squeezed bath sponge.

## **The compost smells of ammonia or stable.**

*Cause:* Too much nitrogen-rich waste, e.g. fresh grass clippings or animal/fish offal.

*Remedy:* Add carbon-rich material and mix in. Then cover with more material, such as half-composted mulch from lower down.

## **The compost smells rotten or like a rubbish bin**

*Cause:* The compost is too compact or poorly aerated

*Remedy:* Add coarse garden litter and stir properly so that the compost is thoroughly aerated. The smell may also mean that the compost is too wet, and therefore poorly aerated. If this is the case, you should mix in covering material with good absorbent qualities, e.g. sawdust.

## **discard.**

*Cause:* The compost has of some reason been unusable.

*Remedy:* GREEN JOHANNA is entirely recycable.

## **Activity in the compost has stopped.**

*Cause 1:* Compost may have been fed too much carbon-rich material, e.g. dry leaves, chopped twigs and sawdust.

*Remedy:* Add nitrogen-rich material that is too coarse, e.g. fresh grass mowings, or kitchen scraps and mix in.

*Cause 2:* Compost contains material that is too coarse, such as twigs, so it becomes too airy and dry.

*Remedy:* Remove this material and either discard it or chop more finely and re-mix in thoroughly.

*Cause 3:* There is too little material in the compost for the micro-organisms to work on.

*Remedy:* Add more material of the correct composition – remember the carbon/nitrogen balance.

*Cause 4:* The compost is too compact, the air doesn't get in.

*Remedy:* Stir properly and, if necessary, add coarse garden litter.

*Cause 5:* The compost is too dry.

*Remedy:* Carefully water the compost and stir – the compost should be as damp as a squeezed bath sponge.

*Cause 6:* The compost is too cold

*Remedy:* When the weather is cold it is important to add new waste materials as often as possible - preferably every day - and to keep the compost properly aerated. If the average daily temperature falls below 5 deg C, you should put the insulating jacket on the Green Johanna.



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