



# Bokashi Composting

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## How does composting work?

**Composting** is a natural process where organic materials are mixed together and slowly break down (decompose) in a controlled way, resulting in a soil-like material called **compost**. **Soil microbes** (bacteria/molds/fungi) and other macro organisms create a mini ecosystem inside of a compost pile. Different microbes thrive at different stages of the process. As materials decompose, the pile heats up and progresses through distinct heat phases, cooling overtime, creating finished compost. Composting takes time, but certain management practices can help speed up the process!

## Why should you try Bokashi composting?

### PROS

- Manage food scraps that are harder to compost using conventional methods (meat, bones, dairy, citrus, oily foods, cooked foods, etc.)
- The resulting "pickled" bokashi material is undesirable to pests (deter bears, opossums, etc.)
- Accelerator helps material break down faster, creating finished compost faster
- Doesn't take up much space to do
- Fun, easy, inexpensive



### CONS

- Not a stand-alone method of composting
- Not a good solution to manage yard waste
- If purchasing bran, it can be costly
- If making your own bran, it takes a while
- "Ick factor"



## What's the Difference?

### Composting

- Aerobic bacteria
- Feedstock components include “browns” and “greens”
- Maintenance – turning, mixing, size reduction, etc.
- Finished product – humus

### Bokashi

- Anaerobic bacteria
- Feedstock components can include meat, fats, oils, bones, dairy, cooked leftovers, citrus, etc.
- No maintenance required
- “Unfinished product” – pickled food scraps, requires additional composting

## Bokashi Bran

Bokashi Bran, also called Bokashi flakes, is the inoculated material that is sprinkled onto the food scraps to ferment them. Bran can be successfully made from sawdust, coffee chaff, rice/wheat/oat bran, or even dry crumpled leaves. More commonly, rice bran is used. **Finished bran contains four ingredients:** wheat bran, molasses, water, and a special accelerator called EM-1

### What is EM-1?

EM (Effective Microorganisms) is the brand name given to group of microbial-based products using a technology developed in the 1980s by Japanese Scientist/Horticulturalist Dr. Teruo Higa.

\*Teraganix is the exclusive distributor of all EM products sold in the USA and Canada.

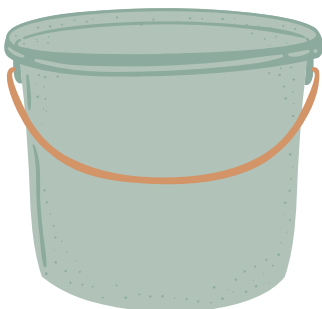


**Lactic Acid Bacteria**  
(lactobacillus)

**Yeast** (same used in baking and brewing)

**Phototrophic Bacteria** (similar to blue/green algae, found naturally in soils)

## Bokashi Supplies



- 2 fermentation vessels (such as 5 gallon buckets stacked together, and the inner bucket has drainage holes)
- Tool for compaction (a circular piece of cardboard works fine)
- Bokashi Bran (can be commercial quality or homemade)
- An airtight storage container for bran (if homemade)

# How to Make DIY Bokashi Flakes

Source: Rebecca Louie, *The Compostess*, [www.thecompostess.com](http://www.thecompostess.com)

## Materials

- **1.5 TB EM-1**
- **3 lb. Flake material:** Wheat bran can be purchased in bulk at Mother Earth's for about \$1.59/lb. Considering a 2 lb. bag of finished bokashi flakes can cost upwards of \$15, you're in for some serious savings!
- **1.5 TB Molasses:** This serves as food source for the microbes.
- **3 cups Water**
- **Container** for mixing. Make sure it's big enough to hold your flake material and then some.
- **Plastic bag:** Make sure there are no holes in the plastic.

## Instructions



1. Dissolve the **molasses** in the water.
2. Add **EM-1** to the water mix.
3. Pour **dry flake material** into the mixing container.
4. Add 2/3 of the **water** mixture to the flake material and mix it together. Use your hands! It not only feels good, but is vital to determining when you've achieved the ideal moisture level.
5. Squeeze a handful of flakes together.
  - a. If it sticks together without dripping, as seen in the picture to above, it's perfect! Continue to the next section!
  - b. If it crumbles apart like dust, it's too dry. Slowly add the remaining liquid to your flakes, pausing periodically to squeeze test it until it achieves the conditions described above.
  - c. If liquid oozes from the flakes, it's too wet. Add more dry flake material until it achieves the conditions described above.
6. Once you've achieved the proper moisture level, put the dampened flakes into the plastic bag.
  - a. Compress the bag contents to squeeze out as much air as you can from between the flakes and throughout the bag.
7. Twist or tie the bag closed, sealing the flakes in a private, air-tight universe.
8. Keep the bag in a warm, out-of-the-way corner like a cupboard or cabinet for a minimum of two weeks. In this quiet, dark, airless space, the microbes will ferment the flakes.
9. After a few weeks have passed, open the bag. It should have a sweet, yeast-y smell to it.
  - a. You may see white mold on it, which is totally fine. If you see green/blue/black mold, something went wrong and the wrong microbes cultivated. Compost the bad batch and start over.
10. Dry your flakes for long-term storage and use. Spread your bokashi flakes out in a thin layer on the floor or on a table to air out. You can do this in a tray, on a plate, or any other surface you don't mind spreading flakes on. Heat and sunshine help speed things up.

## How Much Do You Need?

“Each 2.2 lb bag of bran will ferment 5 bokashi bins. For an average family, this is generally 3 – 4 months worth of food waste.

Then as the bucket fills, add 1-2 tablespoons of bokashi bran for every 6 cm (2.3 in) of food.”

Source: *Potager Project*

## Bokashi "Tea" or "Juice"

Bokashi Tea is the acidic liquid that accumulates at the bottom of a bokashi composter. The pH level and acid-loving microbes it contains are responsible for the benefits it provides. Drain off the “Bokashi Tea” from your bucket every few days. *\*Dilute and use it as soon as you drain it. It does not store well.*

- Use for septic system aid
- Clean pipes by pouring down drain
- Fertilize your house plants
  - Dilute 1:100 “tea” to water (when watering less than once a week)
  - **AVOID** adding to young/tender plants or to foliage. Add diluted “Bokashi Tea” to the soil surrounding plants

## EM-1

**Agricultural Applications:** Apply an average of 1 gallon per acre per week from sowing until harvest.

**Garden Applications:** Add EM-1 concentrate to a suitable hose-end sprayer and spray directly onto plants or soil surfaces. One 32 oz. hose end sprayer (set to 1 oz./gal.) should cover about 1/8 acre. Apply once per week throughout the growing season.

**Houseplant Applications:** Mix EM-1 with water at a rate of 1 oz. per gallon. Spritz onto plants with a bottle sprayer.

## Secondary Composting

### Bokashi Pre-Compost:

Although Bokashi is a composting method, it is technically fermentation. The final product is **NOT** finished compost.

### Add to Preexisting Compost Pile

Add **one-part bokashi** pre-compost to **three parts browns** by volume

### Bury in Soil (9+ inches)

\*Make sure soil completely covers the fermented mass to keep oxygen out of the decomposition process.

### Put Pre-Compost in a Large Pot

- Fill a pot to about 1/3 of its volume with bokashi pre-compost
- Fill up the second third with soil
- Mix the bokashi pre-compost with the soil
- Add soil on top, filling the remainder of the pot

*\*Wait a minimum of 14 days before using compost\**