

How to Make a Bokashi Bucket

by Adam Tomash (excerpted from <http://tinyurl.com/bokashi-2>)

Supplies for one bucket (*ultimately you will want two*):

2 (or 4) - food grade 5-gal plastic buckets (~\$4.50 each)

Lowe's (Encore Model 50640); Home Depot; or ask your local supermarket bakery*

*If you get a used bucket, make sure gamma seal lid fits before drilling! If lid doesn't fit, use repurposed bucket on bottom and purchase new bucket that lid will fit

1 (or 2) - gamma seal lid (~\$7.50)

Lowe's (Encore Model 82136); Home Depot

1 (or 2) - Italian bottling spigot (the kind that swivels is best – usually red or blue)

Amazon.com (\$5) or local brewing supply store

EM-1 (\$33.00/quart)

Sheepscot General; Fedco Growers Supply

Bran (50 lb bags; ~\$14)

Agway; RZR Ace Hardware, Waldoboro

Molasses (gal. jugs)

Fedco Growers Supply (\$12); RZR Ace Hardware, Waldoboro (\$10)

Tools:

Electric or hand drill

Bits: 1/8-inch bit and 1-inch wood spade bit or 1-inch Forstner bit (if you have one)

Directions:

1. Bucket #1 (top bucket with lid)
 - a. Make sure that the gamma seal lid fits your bucket! Unscrew the inside portion of the gamma seal lid. Place the outer ring on this bucket and gently push it onto the bucket with the heel of your hand to get it started. Use a rubber or wooden mallet to tap it completely home (or a board and hammer) and ensure an airtight seal. Re-install the threaded inner part of the gamma seal lid. *If lid does not fit bucket (*might occur if you are using repurposed buckets*), use this for the bottom bucket and purchase a bucket to match the lid.
 - b. Drill 20 or so 1/8-inch holes in the bottom of the lidded bucket, spaced evenly around. Precision is not important!
2. Bucket #2 (bottom bucket with spigot)
 - a. Mark a spot near the bottom of the bucket where you will drill a 1-inch hole.* To make the mark, measure up from the bottom of the bucket so that you have enough clearance for the washers and nut that screw onto the threaded portion of the spigot. *On buckets we used, this was 1.5" from bottom.
 - b. Using one of the 1-inch drill bits (Forstner is the best but also the most expensive), drill a hole centered at the mark you just made. Double check that you will have enough clearance before you drill.
 - c. After the hole is drilled, see if the threaded spigot pipe fits. It should be slightly undersized such that you will actually have to twist or thread the spigot into the hole. If it is too small, file it carefully until it reaches the proper diameter. Put one washer on, thread spigot into the bucket hole. Put the other washer on from the inside and then the nut. Tighten to get a leak-proof seal.
3. Put the first bucket with the lid into the bottom bucket with the spigot, and you are ready to use the bucket Build at least two so that the first one can "condition" while you fill the second.

To "activate" EM-1 (*Fedco Growers Supply catalog and Adam*):

You can increase the volume of effective microbes provided by EM-1 through fermentation. Mix one part EM-1 and one part molasses with 20 parts warm water, 110°. Put into an airtight bottle or brewing container with an airlock. Ferment at room temperature for 10 days and it is ready for use. If you use an airtight bottle, unscrew the lid daily to release pressure buildup. The completed product should smell slightly of alcohol. Use within 45–60 days.

For 5 quarts of activated EM-1, use 1 cup each of EM-1 and molasses with 4½ quarts water.

For 1 quart of activated EM-1, use 1½ fl oz each of EM-1 and molasses with 3½ cups water.

Our mission is to provide assistance in conservation of land and water resources for our community through proactive efforts, actions, and education.

To use your bucket(s):

1. Collect kitchen waste until you have enough make about a 2" layer in bokashi bucket. *The finer the waste is chopped, the more efficient the fermentation will be (less air, more surface area).*
2. Put waste into bucket, cover completely with bran, and sprinkle on 1/2 to one cup of activated EM-1 (experiment). Pack down with potato masher or your choice of tamper to exclude as much air as possible. *(When adding high-protein foods, such as meat, fish, cheese and eggs, use more activated EM-1.)*
3. Check that the lid is closed tightly at all times.
4. Regularly drain the bokashi juice produced using the spigot at the base of the bucket.*
5. Repeat this layering process until the first bokashi bucket is full.
6. Once full, set the bucket aside to ferment for two weeks or, if you have only one bucket, bury immediately in the garden.**
7. If you have two bokashi buckets, begin the process again in your second bucket, allowing the contents of the first bucket to continue to ferment. Continue to drain off the bokashi juice regularly.
8. Wash your bokashi bucket after each use. If buckets are stuck together, it is not necessary to separate them when rinsing.

* What to do with all the bokashi juice

1. Use as fertilizer or foliar spray: 1 t juice to 2 quarts water
2. Add back to bokashi bucket with bran to accelerate fermentation\
3. Use in same way as EM-1
 - a. Share with friends
 - b. Add to garden waste compost heap or leaf mold pile to help decompose
 - c. Start another bokashi bucket (!)
 - d. Pour down drains/toilet to keep clean

**Getting bokashi into the ground – which is after all the whole point!

In the warmer months

1. Bokashi bin contents can be buried directly in outside soil. Under those conditions it does not smell, and animals will be much less attracted to it than to fresh garbage.
2. Dig a trench about 10 to 12 inches deep, pour in the bokashi, mix in a small quantity of soil and then bury with the remaining soil. In less than two weeks, the organic matter will be converted into stable humus.

In the winter when ground is frozen:

1. See instructions on next page for *Adam's large scale indoor bokashi bin*, which is large enough for one person's kitchen waste for the winter. In spring, when soil thaws, bury contents in garden.
2. *Hildy's experimental plan*: If you don't want to make a large scale bin just yet, you might try what I am going to do -
 - a. After fermenting for the requisite couple of weeks, put the contents of a 5-gal bokashi bucket into an outside compost bin (like an Earth Machine). *Yes, this means trudging out to the bin in winter but once every few weeks, rather than once every few days.*
 - b. Incorporate into garden in the spring when bokashi and garden soil thaw. *Even though the bokashi will freeze and not keep "working" all winter, it will be miles ahead of what I usually find in my compost bin in April.*

Adam's design for a large-scale bokashi bin

(excerpted from <http://tinyurl.com/bokashi-1> by Hildy Ellis, Knox-Lincoln SWCD)

Materials

- 1 – 32-gallon plastic trash can with molded hand-hold recesses in bottom
- 1 – very large black plastic nursery pot to match circumference near bottom of trash can
- Plastic or nylon landscape fabric
- 1 – double ended barbed connector & 1/4 -inch tubing (available from Fedco Organic Growers Supply)
- 1 – 1-gallon plastic jug (cider, water, vinegar)
- Cinder blocks, crates or other material to elevate bin enough so that bokashi juice will gravity feed into jug

Tools

- Drill and 5/32" bit
- Utility knife, jigsaw, sawzall or hand cutter (for nursery pot)

Directions

Trash can bin

1. Drill a 5/32-inch hole in the bottom of the plastic trash can close to the middle of the handhold recess.
2. Insert one end of barbed connector into tubing. *Do not cut tubing until trash can is on platform and you can determine length from can to jug. (Fig 2)*
3. Insert other end of barbed connector into predrilled hole in bottom of trash can. It will be a tight fit. If necessary, use pliers, and a hair dryer to warm the plastic. If it looks like it might leak, use silicone sealant on juncture. (Fig 3)



Fig 2. Barbed connector and tubing



Fig 3. Connector with drainage tube inserted into bin

Drain pan

4. Drill extra holes in bottom of nursery pot
5. Saw or cut off nursery pot a few inches from bottom (Fig 4)
6. Make a notch in the sawed off edge. (Fig 5)
7. Cover the drain pan with landscape fabric and set into trash can cut side down/bottom side up, so that it sits against the wall of the bin and covers the area around the drainage port. (Fig 6)
8. Set can on platform.



Fig 4. Bottom of large nursery pot & landscape fabric for drain pan



Fig 5. Cut notch in drain pan to fit over handhold recess & connector



Fig 6. Cover drain pan with landscape fabric and install in bin

Jug

1. Drill a 1/4-inch hole in the cap of the gallon jug. After placing can on platform, cut 1/4-inch tubing long enough to insert into hole in jug lid. (Fig 1)
2. Tighten jug lid gently to avoid creating an air-lock, which would impede flow of liquid from can.
3. Place jug in bucket or pan to catch spills in case you don't empty jug in time.

Voila!



Fig 1. Large scale bokashi bin showing platform, tubing and jug