

Seattle Tilth O.T.S. (Off the Shelf) Worm Bin

Bin Design by Colleen Quinn, Illustrations by Paul Tomita for the Seattle Tilth Association

Materials:

- 10-1" screened louvered vents
- 2 -- 2" screened louvered vents
(*lumber yard*)
- 2 solid color Rubbermaid bins at least 14" deep
- O-ring hose washer
- 1 Male hose adapter, 3/4" X 1/2"
- 1 Metal hose shut-off valve, spigot
- Teflon plumbers tape
(*hardware/garden store*)

Tools:

- Drill motor
- 1/4" drill bit (regular)
- 1" drill bit (blade type)
- 2" drill bit (cup type)
- Measuring tape

Assembling the Tilth O.T.S. Bins

Bin #2: Install Screened Louvered Vents and Drainage Holes

- Before drilling holes, make an indentation with the point of the 1" drill bit to help guide the drill.
- Turn the bin upside down and drill twenty 1/4" holes in the bottom of the bin for drainage. Using the drill, remove any plastic residue from the holes so they are clean and free of plastic curls.
- Turn the bin on it's side and drill five 1" holes along the upper edge. Locate the holes 1 3/4" from the top edge, spacing each hole about 3" apart.
- Repeat the process on the opposite side of the bin.
- Finish by inserting the 1" louvered vents into the holes from the outside of the bin.
- Make sure the vents are flush with the outside wall.

Bin #1: Install Shut-Off Valve/Spigot

- Drill a 1" hole at the center, end wall, one half inch from the bottom.
- Stretch and push the O-ring onto the threaded end of the male hose adapter.
- Make sure the O-ring is in the groove all the way to the end of the male hose adapter.
- Wrap the threaded end of the male hose adapter with Teflon plumber's tape.
- From the inside of the bin, place male hose adapter through the 1" center hole.
- From the outside of the bin, screw the shut off valve/spigot onto the male hose adapter tightly.
- Valve/spigot control knob should be on the topside of the spigot for easy use. Always keep the spigot in the closed position to prevent leakage.

Lid #2: Install Screened Louvered Vents

- Take the lid of bin #2 and place on top of the bin #2.
- Mark two locations on the lid for the 2" louvered vents.
- Carefully drill the 2" hole using a cup drill bit.
- Clean off any plastic residue or curls.
- Insert the 2" louvers from the outside of the lid through the holes.
- Assemble the bin according to the illustration, stacking Bin # 2 inside Bin #1.
- Put lid #2 with the vents, on top of the bins.
- Do not snap the lid shut, just lay it on top of the bin.

Lid #1: Drip Tray

- Use lid #1 upside down, positioning lid under valve/spigot as the drip tray under the bins.

O.T.S. Worm Bin Tips

❑ **Prepare bedding in another container and transfer to the bin.**

This can be done in a 5-gallon bucket in small batches.

Your bathtub or shower is a good place to mix the bedding. Mixing bedding with water can be messy. When using wood shavings, soak overnight to make sure they take up the water. Shred or tear paper in ½" to 1" strips or squares.

Set Bin #2 in the tub or shower while you transfer bedding, allowing excess liquid to drain before putting the bins together.

❑ **Using shredded paper and wood shavings will mean less crawling/flying critters in your bin.**

Using leaves will introduce more crawling/flying critters into your bin.

❑ **Fill your bin ¾ full with bedding, leaving 1" louvered vents exposed.**

Do not cover louvered vents with bedding. The bin needs air for the worms.

❑ **Add food scraps by burying your food in holes or pockets in the bedding.**

Do not overload your bin. Use the formula below to figure pounds of food per week your bin can handle:

Width X length (square feet) = # lbs food per week

For example, the O.T.S. bin that measures 1" width by 1½' length can handle about 1½ lbs food per week

Create a pattern when burying food. Bury in a new place every 4-6 times you bury food.

Avoid disturbing all the bedding when burying food. Bedding may heat up and the worms have nowhere to go to avoid the heat.

❑ **Take care that the spigot is in a protected area - so that it is not kicked, etc.**

❑ **Drain compost tea liquid often.**

Check daily after newly bedding bin, less often later. Pick up both bins and move side to side. Sloshing sound means you need to drain the compost tea liquid.

Lift and tip bins toward the spigot, open spigot and drain liquid into another container or bucket.

Use the compost tea liquid for your houseplants. Note: If the liquid is foul smelling like very rotten food, flush the liquid down the toilet.

❑ **Keep adding fresh bedding to your bin, as materials break down into compost.**

You need to be able to bury food scraps under the bedding, so add more fresh bedding on top as the existing bedding decomposes.

❑ **Harvest compost when bin material looks brown and crumbly, similar to coffee grounds and smells like the forest floor.**

To harvest compost, your Tilted O.T.S. Worm Bin will need to be emptied and re-bedded.

First drain the compost tea.

Lift the interior Bin #2 out of the exterior Bin #1.

Rinse out Bin #1, flush spigot with water and set Bin #1 aside.

Remove visible food scraps from Bin #2 and set food aside.

Lay down plastic sheeting and dump out the contents of Bin #2 in a pile on the plastic sheet.

Separate the worms from the bedding:

The worms avoid light and will burrow down into the compost.

You can remove the 3" top layer of compost without getting worms.

Repeat the process, removing a 3" compost layer every 5 to 10 minutes.

Finally, you will have a little compost and a pile of worms.

Re-bed Bin #2. Add worm/compost pile to Bin #2 and reassemble bins.

Bury the food scraps you put aside.

You may want to put the finished compost into another container to age.

❑ **Do you have a problem with little flies?**

Fruit flies can be prevented by laying a piece of plastic bag or cardboard over the top of the bedding, inside the bin. (This breaks their life cycle, as they don't like to lay their eggs on the smooth surface.) Be sure that food scraps are buried beneath the bedding. Existing fruit flies can be sucked up with a vacuum cleaner.

Fungus gnats can be attracted to moist organic matter, such as those found in a worm bin. They don't respond to the same fruit fly techniques listed above, but they can be trapped with a sticky trap made for gnats. Attach sticky trap tape to a piece of cardboard and place on top of the bedding, inside the bin. If fungus gnats get into houseplants, you can let the soil dry out before watering and scratch the soil surface to disturb the life cycle.

❑ **What causes worm death?**

Bedding too dry—no moisture for the worms. Bedding should be moist like a wrung out sponge.

Too much water—they drown. Use the spigot to drain the liquid. A layer of coco peat fiber or peat moss at the bottom of the bin can help absorb excess moisture.

Too little air—they suffocate. Keep bedding fluffy and vents clear.

Too much acid is toxic and burns worms' delicate skin. Avoid adding too many citrus foods.

Digging around in the bin too much will cause the food and bedding to heat up, killing the worms.

Harvest compost when it is ready, as the worm's castings are toxic to the worms.

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