**Worm Bin Troubleshooting**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
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<tbody>
<tr>
<td>Worms are dying</td>
<td>Food/bedding all eaten</td>
<td>Harvest compost, add fresh bedding and food</td>
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<td></td>
<td>Too dry</td>
<td>Add water until slightly damp; add moist bedding if needed</td>
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<td>Extreme temperatures</td>
<td>Move bin so temp is between 55° and 77° F; make sure bedding is adequate</td>
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<td>Bin smells bad/ attracts flies</td>
<td>Add a 4 to 6 inch layer of dry bedding and stop feeding for 2 to 3 weeks</td>
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<td>Too wet; food scraps exposed</td>
<td>Remove meat, dairy, grease, etc.</td>
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<td>Problem materials</td>
<td>Use traps or baits and a rodent-resistant bin (no holes or gaps larger than ¼ inch); remove meat, dairy, grease, etc.; add a 4 to 6 inch layer of bedding and stop feeding for 2 to 3 weeks</td>
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<td>Rodents in bin</td>
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<td></td>
<td>Bin not rodent resistant; problem materials; too many fruit and vegetable trimmings</td>
<td>These are good for your worm compost!</td>
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**Feed Your Worms**

Give your worms about a quart (one pound) of fruit and vegetable trimmings, then leave them alone for a couple of weeks while they get used to their new home. After that, feed your worms about a quart of food scraps per square foot of surface area in your bin per week. To avoid fruit flies and odors, bury food under the bedding.

**Maintain Your Worm Bin**

Always keep a 4 to 6 inch layer of fresh bedding over the worms and food in your bin. Add fresh bedding at least once every couple months. Keep bedding as moist as a wrung-out sponge. In a plastic bin, add dry bedding to absorb excess moisture. Wooden bins may require adding water occasionally.

**Harvest and Use Your Worm Compost**

You can start harvesting worm compost 2 to 3 months after you set up your bin. Simply reach in and scoop out the brown crumbly compost, worms and all. You can also move the contents of the bin to one side, place fresh bedding and a handful of soil in the empty space and bury food there for a month or two. Harvest the compost after the worms have migrated to the new food and bedding. To keep your worms healthy, harvest at least once a year.

By adding nutrients and humus to the soil, worm compost will help your plants thrive. Sprinkle a ¼ inch to 1 inch layer of worm compost at the base of indoor or outdoor plants, or blend no more than 20 percent worm compost into potting mix or garden soil.

**Winter Worm Care**

You can continue worm composting all winter long if your bin is in an area that does not freeze (a pantry, laundry room, basement, or heated garage or porch). Or, you can let your worms rest through the winter outside by burying the bottom half of your bin in the ground and piling straw or leaves around and on your bin for insulation. You do run the risk of losing your worms outdoors during an uncommonly cold winter. See Resources section for sources of more ideas.
BUY A BIN
For a top-quality bin at a subsidized price, call the Rotline, 773-265-9587.

BUILD YOUR OWN BIN
Building a bin of your own can be fun and gives you more control over how it looks and what it is made of.

Use Green Building Materials
- Salvaged materials. Remember to adjust measurements on older lumber as it is sometimes larger than modern planed lumber.
- Recycled plastic. You may need to use thicker plastic lumber than wood as it is usually more flexible. Adjust measurements accordingly.
- Non-toxic wood sealants and treatments. Avoid pressure treated lumber as these can leach poisons into the compost. See Resources section for sources of alternative sealants, or use linseed oil with mineral spirits.

Basic Bin
- For Basic “Add as You Go” or “Batch” Composting
- Produces small to medium amounts of compost
- Very simple to build
- $10 - $35 for new materials

Materials
Plastic or metal garbage can with tight fitting lid (min. 32 gallons for best results)

Tools
Power drill with 1/4” drill bit

Assembly
Drill 1/4” holes in bottom and sides for drainage and aeration. Put at least 24 holes on the bottom and 40 on the sides.

Urban All-Wood Bin
- For Basic “Add as You Go” or “Batch” Composting
- Has 2 front doors for easy harvesting and turning, a top that doubles as a sifter, and a full wire mesh lining
- Produces small to large amounts of compost
- Carpentry skills needed for construction
- $150 - $200 for new materials

Materials
- (8) 8’ 1x6” wood
- (2) 8’ 2x4” wood
- (1) 10’ 2x4” wood
- (3) 6’ 1x4” wood
- 15’ 1/4” wire mesh hardware cloth
- (4) 5” drawer handles
- (8) 1-1/2” hooks and eyes
- (8) 4” corner brackets with 1/2” wood screws
- Polyurethane glue
- (20+) 8 penny galvanized nails
- (125+) 6 penny galvanized nails or screws
- (250+) 3/4” poultry wire staples

Tools
Power saw (or handsaw), screwdriver, hammer, measuring tape, pencil, square, drill with 1/4” bit, sandpaper
Assembly
(Decide all wood pieces before nailing)
1. Nail 2x4 bottom frame together with the larger nails. Be sure the finish dimension is 30-1/2”x31-1/4”.
2. Build sides by nailing bottom and top 31-1/4” 1x6s to the 2x4s (use smaller nails). Be sure bottom 1x6s hang down 3-1/2” below 2x4 uprights. Fill in the remaining 1x6s equally spaced, with no gaps larger than 1/4”.
3. Attach sides to base by nailing 3-1/2” overhang to base as drawn (with smaller nails). Toenail 2x4 uprights into bottom frame with larger nails.
4. Nail the six 32” 1x6s to back by first attaching the top and bottom pieces, then filling in the remaining four, spaced equally.
5. Before cutting pieces for the front doors, measure the actual opening at the front of the bin, and make sure to cut the 1x6s just 1/4” to 1/4” smaller than the opening. Build top door by nailing three 1x6s to the two 17” 2x4s with 1/4” between each board as shown. Build bottom door by first nailing on the top two 1x6s (1/4” apart), then measuring the remaining space, and cutting the last 1x6 lengthwise to fit.
6. Attach eyes to front 2x4 uprights, and hooks to front doors as drawn.
7. Build lid by pre drilling and tacking together as drawn (using smaller nails), making sure the finished dimension is 35x35” and square. Then pre drill and screw the corner brackets to the inside corners, and the top 1x4s into place. Cut a 33x36” piece of wire screen and staple it in as shown in detail drawing.
8. Cut remaining screen to fit—staple side, back and door pieces inside bin on 1x6s (not over 2x4s). Staple bottom piece onto the underside of bin.

3-Bin System
• For Basic “Add as You Go” or “Batch” Composting
• Requires minimum 3’x 9’ of yard space
• Excellent for hot composting—has removable front slats for easy turning, and separate bins for turning and aging compost, and/or storing compostables
• Can produce large amounts of compost
• Carpentry skills needed for construction
• $250 - $300 for new materials

Materials
• 2x4” wood: (8) 31-1/2”, (8) 36”, (4) 9”, and (4) 29” pieces
• 2x6” wood: (4) 36” pieces
• 2x2” wood: (6) 34 1/2”, (1) 9”, and (4) 29” pieces
• 1x6” wood: (19) 31” pieces
• 1/4” mesh hardware cloth: 30’x3’
• Carriage bolts (12) 3-1/2”x3/8”, with washers and nuts
• 12 penny galvanized nails (2 pounds)
• 8 penny galvanized nails (1 pound)
• Poultry wire staples (1 pound)
• Corrugated fiberglass, 4 oz.: (2) 8’x26” pieces
• Gasketed roofing nails: (40)
• Wiggle molding (18 feet)
• 3” hinges, zinc plated, galvanized or brass (3)
• 4” flat corner braces (4) with 1” wood screws
• 4” flat “T” braces: (4), with 1” wood screws
• (4) hook eyes, and 8’ of light cable or chain

Tools
Power saw (use eye protection) or hand saw, drill with 3/8” and 1/16” bits, screwdriver, hammer, tin snips, tape measure, pencil, socket or wrench, carpenter’s square.
Plastic Worm Bin

- Mainly for fruit and vegetable trimmings
- Very easy to build; tidy for indoor use
- Plastic bins keep compost moist; will require regular additions of dry bedding
- $6 - $20 for new materials

Materials
- Plastic storage container with a tight fitting lid: 12” to 18” tall; 12”x24” base

Tools
- Power drill with ¼” bit

Assembly
- For indoor use, drill about 6 holes per side for ventilation about halfway up the sides of the bin. For outdoor use, also drill at least 12 holes in the bottom for drainage.

Wooden Worm Bin

- Mainly for fruit and vegetable trimmings
- Basic carpentry skills needed for construction
- Doubles as a seat!
- Breathes well—will need occasional watering
- $30 - $50 for materials new

Materials
- (1) 4’x4’ piece ½” exterior grade plywood
- (3) 6’ pieces 2x2” wood
- (1) 4’ piece 2x4” wood
- 4 penny galvanized nails (1 pound)
- (16”) light chain with (2) ½” wood screws
- (2) 2” hinges, with ¾” wood screws
- Polyurethane glue

Tools
- Power saw (or hand saw), hammer, measuring tape, pencil, square, drill with 1⁄4” and 3⁄32” bits, sandpaper

Assembly
- (Glue all wood pieces before nailing)
  1. Base: Nail two 32” 2x4s and two 36” 2x4s together with 12 penny nails to form each of four screen dividers. Cut four 36x33-1⁄2” wire mesh pieces, and staple (every 4”) to frames after checking frames for squareness. Bolt dividers to three 9’ 2x4s as shown (inside measurement between dividers should be 31-5⁄16”). Tack in 29” 2x4s as shown. Staple one 9’x3’ piece of wire mesh (every 4”) to back of structure, and one 9’x3’ piece to the bottom.

  2. Side, Front and Back Walls: Nail the four 2x2 uprights to the two side walls along the 11-3⁄4” edge, with one end of each 2x2 flush with the top edge of the walls. Nail a 19-7⁄8” 2x2 hinge support to the top edge of the back wall piece, leaving 1-1⁄2” on each side for 2x2 uprights. Assemble box by nailing the 1-1⁄4” overhang of the side walls to the 2x2s on the base as drawn. Then nail the front and back walls to the 2x2 uprights and to the 2x4s on the base as drawn. Be sure the hinge support is at the top of the bin.

  3. Lid: Nail lid together as drawn. Attach to box with hinges, making sure to pre drill screw holes into the 2x2s. Attach chain with ½” wood screws so lid can rest in an opened position.
RESOURCES

Chicago Home Composting Program

Compost Hotline, the “Rotline”
773-265-9587
Website: chicagohomecomposting.org

Bargain Compost Bins

Master Composter Training Program

Compost Education Centers
• Garfield Park Conservatory, 300 N Central Park Ave.,
  773-638-1766, garfieldconservatory.org
• Chicago High School for Agricultural Sciences,
  3807 W 111th Street, 773-233-0476
• North Park Village Nature Center, 5801 N Pulaski Road,
  312-744-5478, chicagoparkdistrict.com
• Eden Place Nature Center, 43rd Place and Shields Ave.,
  773-624-8686, fullerpark.com
• Chicago Center for Green Technology,
  445 N Sacramento Boulevard, 312-746-9642
cityofchicago.org/Environment/GreenTech

Worm Composting*
• Flowerfield Enterprises, 269-327-0108,
  wormwoman.com, worms, books, curricula, supplies
  and information.

Reducing Lead in Garden Soils

With Chicago’s industrial past, changes in land
use, and prior use of lead in paint and gasoline,
it is likely that there is lead in your soil. Therefore,
it is best to plant edibles in raised beds with fresh
uncontaminated soil, not directly in the ground.
Testing your soil for lead is highly recommended,
especially if you have young children.

Adding compost to your soil can reduce the amount
of lead absorbed by plants and people, however,
it is best not to compost plants grown in soils with
very high lead levels, as these plants can themselves
have high lead levels. Contaminated plant material
should be added to your regular waste and
recycling collection program. For testing services
and lead hazard reduction information, see below.

Lead Testing and Information*
• Chicagolead.org, lead poisoning prevention resources.
• A&L Laboratories, 260-483-4759, algreatlakes.com,
  lead testing.
• Stat Analysis Corp., 312-733-0551, statanalysis.com,
  lead testing.

Green Building Materials and Information*
• Green Building Resource Center for information,
  312-746-4155,
cityofchicago.org/Environment/GreenTech
• Resource Center for salvaged building materials,
  773-821-1351, resourcecenterchicago.org
• Nontoxicenvironments.com for “Dynoseal” wood
treatment of inside of bins and “Clear Penetrating Oil”
for wood treatment of outside of bins.

Recycling Hotline: 312-744-1614
Water Hotline: 312-743-9283
General City Information: 311 or cityofchicago.org

*Note: this list is not all-inclusive. The City of Chicago and Home
Composting Program partners do not officially endorse these facilities,
and are not legally liable for the quality or price of their services.