

## Vermiculture, Garden Composting Tower

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Dirt Rich Farm, 115 Diamondback Trail

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### Benefits

1. Efficient recycling of clean vegetable residues.
2. Feed and multiply earthworms to populate a garden area of up to 1000 sq. ft. (32' X 32').
3. Protect young worms from animal predators.
4. Worm numbers per bed increased 25 fold, over 6 months at ECHO in N. Fort Meyers, FL.
5. Improved conditions, year around, for efficient composting.
6. Enhances the management of permanently located, no till, organic, raised beds.
7. Worm tunnels improve soil aeration, moisture conditions, plant root development and nutrient cycling.
8. Highly favors beneficial microbial, soil health.
9. Improved and better balanced soil fertility.
10. With some three years of use, on poor sandy soil, the Brannen's report improved soil quality and higher vegetable yields and quality.

### Materials

1. Two standard, 12" diameter by 14" tall plastic buckets, (5 gals). For best results, obtain two new buckets of the same brand.
2. One 12" clay saucer
3. Six gallons of mature compost.
4. Three cups of red wigglers - needed where existing worm numbers are low

### Tools

1. A narrow 'key hole' saw for wood
2. Electric drill
3. ½" flat, wood drill bit
4. Small round file
5. Black marker pen
6. Long handle, pointed shovel
7. Post hole digger - optional

### Assembly

1. Mark the bottom bucket for 35 holes, evenly spaced at about 4" apart, with about 8 on the bottom and 27 on the 10" high, side panel.
2. Drill each mark to make a ½" hole.
3. Remove the bottom of the second bucket using the drill and key hole saw.
4. Also, for the second bucket, cut off a 4" wide rim from the top. Cut off only enough, to remove the ridges and handle supports.
5. For the bottom bucket, use the same tools to cut off a 4" wide rim from the top. Make the cut just under and flush with the lowest ridge.
6. The second bucket is now an 11" tall cylinder and should make a tight 1 ½" fit, by pushing its top into the top of the bottom bucket. This gives a 21" tall tower.
7. If the tight fit is not obtained, then saw eight 2" slits, equally spaced, at the top of the cylinder, to allow for compression and fit into the bottom bucket.

### Installation

1. In the center of the bed, that is most central to the garden, dig a hole 16" in diameter and 24" deep. Keep the top soil and sub soils in separate piles.
2. Place 3" of compost in the bottom.
3. Position the tower in the center of the hole. The top of tower should be close to ground level.
4. Place 7" of compost, both on the inside and outside of the bottom of the tower.
5. Generally, starter worms are needed, and 3 cups or about 100 red wigglers should be placed on top of the compost, around the outside of the tower.
6. Finish back filling around the tower with top soil.
7. The tower is now ready to receive vegetable residues.
8. Place the 12" clay saucer on top of the tower and keep it filled daily with water.

### Maintenance

1. Use a variety of 'clean' vegetable and fruit residues, relatively free from disease and insects.
2. Keep fruit portions to less than 10%, to avoid attracting insects like soldier flies, during the summer. The fruit portion may be increased in the winter.
3. Completely avoid onions, garlic, tomatoes, peppers, citrus as well as meat and milk products.
4. Worm health is improved by adding weekly about 15% of one or a combination of shredded paper, dry grass, or straw to provide carbon. Organic poultry or vegetable meal fertilizer at ¼ cup could also be added weekly, as a nitrogen source. Also beneficial, are hand crushed egg shells, coffee grounds, and used tea bags.
- \* 5. A suggested guide for filing the first 5 gallons of residues is 14 quarts of green items in the bottom, 3 quarts of carbon sources, 2 quarts of fruit portions and 1 quart of a variety of organic fertilizer, egg shells, and coffee grounds. Try to maintain the ratio of 7 to 1 ½ to 1 to ½ quarts for future weekly refills of residues.
6. A good range for cutting particle size is between 1 to 3 inches.
7. By keeping water in the saucer, the tower temperatures are moderated year around.
8. The residues may need to be sprinkled with water during very hot and dry periods. Shading the saucer with white fabric could be tried. Once the habitat is established, make periodic visual checks on worm activity to be sure they are thriving.
9. To move away invading fire ants, try mixing 1 tablespoon of boric acid with 1/3 to ½ cup of honey. Evenly place 5 drops over the mound. It is best not to disturb the mound, especially if it is inside the tower. Early treatment is important.
10. A further improvement would be to keep the 3' x 5' area where the tower is located, planted in small to medium size herbs from April through October. Yearly, October sowing of Crimson clover could be tried as a November through March cover crop.
11. If additional towers are wanted, consider locating them on the basis of one for every third or fourth bed.

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Assembly



Installation

