A Great Do It Yourself Project from University of Illinois Extension

DIY Self-Watering Planter

Creating a Bucket Planter
Making gardening projects easier for you!

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What Can I Plant?
Suggested Planting Rates
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Take Your Pick!

*Beans (bush or pole)*
- Beets
- Broccoli
- Cabbage
- Carrots
- Cauliflower
- Corn
- Cucumber
- Eggplant
- Lettuce
- Melon
- Onions
- Peas
- Peppers
- Radishes
- Spinach
- Summer Squash
- Swiss Chard
- Tomatoes
- Winter Squash

**Preparation for the Project >>>**

**The Basics**

Plastic 5-gallon buckets are a convenient size for growing plants in limited space, without needing any “in-ground” space. When choosing buckets, use new buckets or recycled buckets which have previously contained items such as food or soap. Avoid buckets which have previously contained pesticides, solvents, paints, or other potentially harmful or hazardous substances.

The DIY Self-Watering Planter uses two 5-gallon buckets—one bucket acts as a reservoir for water, the other holds potting mix and the plant(s) of your choice. A plastic coffee can or similar-sized container maintains the plant-filled bucket at a fixed height to allow for an adequate water reservoir below. An old towel or other cloth acts as a wick to bring moisture up from the reservoir to the potting mix.

This growing system is most appropriate in situations where water demands are high either because of the plants being grown (i.e. tomato) or the environment (i.e. full-sun on pavement).

**What Can I Plant?**

Plants with a more compact growth habit will perform best in the bucket planter. Look for words like “compact”, “patio”, “dwarf”, or “bush” in variety names and descriptions.

Each bucket provides approximately 3/4 of a square foot of garden space (based on a 12 inch diameter bucket). The book *Square Foot Gardening* by Mel Bartholomew is a good guide for determining how much to plant in each bucket planter. This book gives suggestions based on the number of plants per square foot.

Since the bucket planters are approximately 3/4 of a square foot, plant approximately 3/4 of the amount suggested for square foot gardening. An exception is where the suggestion is to plant one plant per square foot, since obviously there is no way to plant 3/4 of a plant! In this case plant one plant in the bucket planter.

**1 plant per bucket**
- Broccoli, Cabbage, Cauliflower, Cucumber, Eggplant, Melon, Peppers, Summer Squash, Tomatoes, Winter Squash
- Use trellising or staking to utilize vertical space for vining crops

**3 plants per bucket**
- Corn, Lettuce, Swiss Chard

**6 plants per bucket**
- Beans (bush or pole), Peas, Spinach

**12 plants per bucket**
- Beets, Carrots, Onions, Radishes
Materials & Tools

2 - Food-grade 5 gallon plastic buckets
1 - Plastic coffee can (2lb) or similar size food-grade plastic container
3 - 20 oz water or soda bottles, or 2' of 1 1/2” PVC pipe
Old dishtowel or similar size cloth (approx. 12”x8”)
Twine or rubber bands
1 - Kitchen sponge (optional)
Newspaper
Potting mix
Duct tape or non-toxic glue
Electric (or cordless) drill
Cutting Bits - 1” hole, 1 3/8” hole and 1 3/4” hole
Drill bits - 3/8” bit
Utility Knife

Let’s Get Started!

#1 Using 1 3/4” hole saw, drill hole in center of one 5-gallon bucket and the coffee can.

#2 Using 1” hole saw, drill 4 holes evenly spaced along rim of coffee can (the open end).
Alternatively, use tin snips to cut 4, 1” triangles evenly spaced along the rim (rim forms the third side of the triangle).
#3
Turn the bucket up-side-down. Using the 1 3/8” hole saw, drill one hole approximately one inch from the edge of the bucket.
Using 3/8” drill bit, drill 10-11 holes evenly spaced approximately one inch from edge of the bucket.

#4
Fasten the old dishtowel or similarly sized cloth lengthwise with 3-4 rubber bands or twine. This will act as the wick to draw moisture into the potting mix from the reservoir.

#5
Thread the bundled dishcloth through the 1 3/4” hole in the center of the bucket and coffee can. The bottom of the coffee can should touch the bottom of the bucket.

#6
Approximately half of the cloth should remain in the bucket, and half inside the coffee can.
If the cloth slides too easily and falls out, cut an “X” in the center of a kitchen sponge, place the sponge inside the bucket over the 1 3/4” hole and thread the cloth through the “X” in the sponge.
Fill Pipe Assembly Option #1
(20 oz drink bottles): Using a utility knife, cut the bottom from three 20 ounce drink bottles.
#12 Stack bottles end-to-end with mouth of lowest bottle resting in 1 3/8” hole drilled in Step 3.

Bottles do not need to be secured, but if desired use duct tape or non-toxic glue to fasten bottles together. Bottles should reach the top edge of the top bucket.

#13 Fill Pipe Assembly Option #2 (PVC pipe):
Cut 45 degree angle on one end of 2’ length of 1 1/2” PVC pipe. This allows water to flow freely into the reservoir.

#14 Insert the angled end through the 1 3/8” hole drilled in Step 3. Cut pipe to height of the bucket or slightly higher if desired.

#15 Add damp soilless potting mix to top bucket, being careful to extend the wick into the potting mix. Fill soil in around the fill tube without disturbing it. It is normal for a little potting mix to fall through the drainage holes.

Plant with desired plants.

Add water to reservoir via the fill tube. Water potting mix directly to initiate wicking action. Mulch can be added to the top of the container to conserve moisture. Check the reservoir and potting mix regularly. You may need to water the potting mix from time to time in addition to filling reservoir to keep the wicking system in working order.