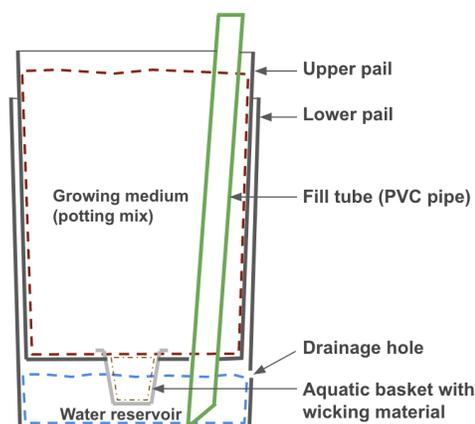


## Workshop: Self-watering containers

### Background

In the city, it's often convenient to grow plants in containers. Self-watering containers (also called "sub-irrigated" containers) have a reservoir of water at the bottom that is wicked up to the growing medium by capillary action, where the roots absorb it as needed. The water reservoir reduces the rate of evaporation, meaning that you have to water less often, saving both water and time. It also encourages plants to develop a healthy, deep root system.



Above left: Diagram of a self-watering container.

Above right: Self-watering containers at the Urban Farm planted with hot peppers and mulched with cocoa shells.

### Supplies list:

- Two 5-gallon pails (source: Uline, Home Depot, ask at bulk store/DIY wine stores)
- One 3-inch round aquatic basket (source: Grow It All or other hydroponics stores)
- One 18-inch long x 1-inch diameter PVC pipe (source: Home Depot)
- Growing medium made up of: 1 parts compost + 1 part coconut coir + 1 part soilless mix (choose a soilless mix that contains peat moss and perlite for drainage)
- Extra coconut coir to fill aquatic basket
- Water (for soaking coconut coir and soilless mix if needed)

### Tools needed:

- Power drill
- Drill bits (3-inch hole saw for aquatic basket, 1-inch hole saw for PVC pipe, 1/4-inch bit for drainage hole)
- Hacksaw (for cutting fill tube)

## Instructions

**1. Prepare the lower pail.**

Attach the ¼-inch drill bit to the power drill and drill a hole anywhere on the side of the pail, 4 inches up from the bottom. This is your drainage hole for overflow.

**2. Prepare the upper pail (see photo).**

Attach the 3-inch hole saw bit to the power drill and drill a hole in the middle of the bottom of the pail. Attach the 1-inch hole saw bit to the power drill and drill a hole between the middle hole and the side.



**3. Prepare the fill tube.**

Using the hacksaw, carefully saw one end of the PVC pipe at about a 45 degree angle.

**4. Prepare the aquatic basket and wicking material.**

First soak the coconut coir in water according to package instructions then fill the aquatic basket to the top (the coconut coir is your wicking material).

**5. Assemble the container parts (see photo).**

Stack the pails. Place the aquatic basket in the 3-inch hole (the lip of the basket should overlap the hole so that it's suspended). Place the fill tube through the 1-inch hole in the upper pail with the angled end down (this is to prevent suction in the water reservoir).



**6. Fill the water reservoir.**

Using a hose or a watering can with a downspout, pour water through the fill tube until you see water leaking out of the drainage hole on the lower pail. Your reservoir is full.

**7. Add growing medium.**

Mix your growing medium ingredients, taking care not to compact them. Fill the upper pail with potting mix up to about 1" below the rim. **You're ready to plant!**

### Tips

- Use safety precautions when handling power tools
- Add mulch to your container to help further minimize water loss
- Choose a dark coloured pail to maximize heat (e.g. for heat-loving plants like tomatoes)
- Choose a light coloured pail to minimize heat (e.g. for cool season plants like lettuce)
- Check out the Toronto Tool Library if you need to borrow tools