

## Help Sheets: Watering

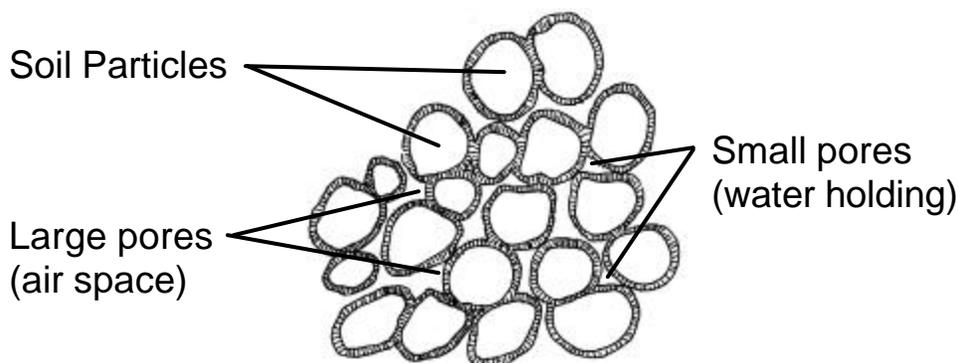
### Why do plants need water?

Water is one of the most important things plants need for living and growing. Water is needed because it becomes a large part of plant leaves, stems, roots, and flowers. Without enough water, plants will 'wilt,' meaning to become droopy, and can even die. Water is also needed because it dissolves the fertilizer and minerals in the soil so that plants can use them.

### What happens when I water my plants?

When you water your plants the roots absorb the water and send it to other parts of the plant to be used. Healthy roots can keep the plant supplied with water as long as the soil is moist.

As important as water is to plants, it is very easy for a plant to get too much water. The soil in which your plants are growing is made up of particles of minerals and organic matter. Between these particles are spaces called **pores**. Soils made of large particles, like sand, have large pore spaces between them, while soils with small particles, like clay (you can't see the particles, they are so small) have very tiny pores. These soil pores hold both air and water for the plants to use. The soil that most plants like, is 50% solids (minerals and organic matter), 25% air, and 25% water.



To stay healthy, plant roots need to get oxygen from air. If water does not drain well through the soil, the pores in the soil can fill up completely with water. This makes the plant roots suffocate since water fills in all the air spaces. The best soil then, is soil that drains well so that plant roots can get both water and air.

You can improve how your soil drains by:

- adding organic matter to the soil (compost is a great source of organic matter)
- watering slowly
- never watering when the soil is still wet

### **Why does adding organic matter to the soil help it hold water?**

Water tends to drain out of large soil pore spaces and remains held in small pores. Clay soil, with its tiny pores, stays wet longer than sandy soil that has large pores. Clay soils do not drain fast and roots die if they stay wet too long. Sandy soils tend to drain very fast, which causes plants to wilt sooner than they would in other soils. Adding organic matter to these soils is the best way to correct either condition. In clay soil, organic matter lightens the soil and opens up larger pore spaces for water to drain through. In sandy soils, adding organic matter can help to hold moisture by making some smaller pore spaces.

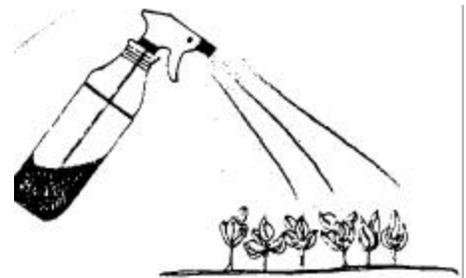
### **How to water seedlings**

Young seedlings have very tiny root systems. They must be treated very gently and watered frequently. Since they are so small they will die quickly if you forget to water them.

When you water your seedlings:

- Keep the soil mix moist, but not wet.
- Use a spray bottle to mist the seedlings gently, or pour water onto the soil very carefully with a cup.
- Use a piece of plastic to cover your seedlings.

Make sure it does not push the tops of your seedlings down! The plastic will help keep in moisture until the seedlings are large enough to stand up when watered.



### **How to water container plants**

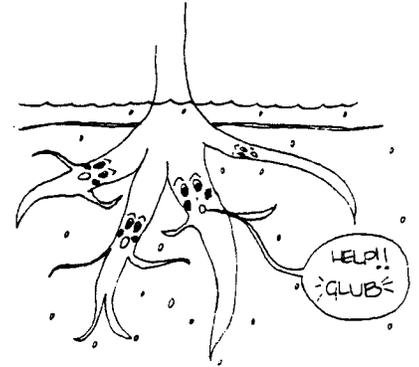
Plants in containers have less soil than plants grown in the ground, so they must be watered more often. To prevent plant roots from sitting in water, all pots and growing trays should have holes in the bottom to allow the extra water to drain out of the soil. Good soil drainage allows air into the soil and prevents waterlogged soil. Keep some kind of tray underneath your pots to catch the water that drains out!

When you water your plants in containers:

- Always check the soil before you water to make sure that the soil is dry. The best way to tell if a container plant needs water is to gently stick your finger down into the

soil about an inch. If it's dry, add water.

- Always water all of the soil. Some water should come out of the bottom of the container to show that even the roots in the lower part of the pot have been reached.
- Keep an eye on your plants - if any start to wilt they probably need water. **REMEMBER:** Always check the soil to see if it really is dry. Sometimes plants wilt because they have been watered too much, causing the roots to rot.
- Provide good drainage by using a soil mix made with perlite or vermiculite.



## How to water an outdoor garden

About one inch of rain is needed per week to water a garden with bare soil. Less water is needed if the garden is mulched. If it does not rain, your outdoor garden may need some extra water.

When you water your outdoor garden:

- Mulch your garden. Mulching will keep the water in the soil from evaporating. You can use black plastic, newspaper, grass clippings, straw, leaves, and many other things.
- If you must water, the soil should be wet four or five inches deep after watering. It may take several hours with a sprinkler or drip hose to water the garden. If you use a sprinkler that gets the leaves wet, water early in the day so plants will dry off before night. This will help to prevent disease problems. A drip-hose that puts water right at the base of the plant is best.
- In the cool weather of spring and fall plants grow slowly, and the soil stays moist longer. You only need to water once or twice a week.
- The heat in the summer speeds up the evaporation of water from plants into the air. You might have to water your plants as much as once a day.

## New Words

decay: to rot or break down into smaller pieces

drainage: the way water moves downward through the soil

mulching: a covering of some type placed on the soil around plants to help hold moisture

organic matter: material made from decayed plants and animals. Compost is made of organic matter