

## Soil Health - Infiltration

Soil infiltration refers to the ability of the soil to allow water to move into and through the soil profile. Infiltration allows the soil to temporarily store water, making it available for use by plants and soil organisms. The infiltration rate is a measure of how fast water enters the soil, typically expressed in inches per hour.

### Steady-State Infiltration Rates\*

Soil Type	Steady-State Infiltration Rate (in/hr)
Sand	>0.8
Sandy and Silty Soils	0.4 - 0.8
Loam	0.2 - 0.4
Clayey Soils	0.04 - 0.2
Sodic Clayey Soils	<0.04

\*Hillel, 1982

### Measuring Infiltration

#### Materials needed:

3" or 6" Diameter aluminum ring  
Wood block  
Rubber mallet  
Plastic Wrap

Graduated cylinder  
Distilled water  
Stopwatch or timer

#### Procedure:

1. Clear all residue from the soil surface. Drive the ring into the soil to a depth of 3" using the mallet and block of wood. Drive the ring down evenly and vertically. Gently tamp down the soil inside the ring to eliminate gaps.
2. Cover the inside of the ring with plastic wrap and drape it over the rim.
3. Pour 107mL (for 3" ring) or 444 mL (for 6" ring) distilled water into the plastic-lined ring.
4. Gently pull the plastic wrap away. Record the time it takes for the water to infiltrate the soil. Stop the timer when the soil "glistens".
5. Repeat Steps 2, 3 and 4 to determine the steady-state infiltration rate. Several measurements may be needed.
6. Record the results.
7. Remove the ring with the soil intact. This intact soil core may be used indoors for the respiration and bulk density tests.