

Soil Temperature – Soil Thermometer

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One of the first things I learned as an agronomist, was the importance of soil temperature. Almost every seed has a specific temperature range where it will germinate best. If the soil temperature is colder or warmer than that temperature range, the seed may not germinate at all. This applies to both desirable plant seed and weed seed.

A soil thermometer can be purchased most easily online. There are now a large variety of options to choose from, but the inexpensive simple “dial and probe” soil thermometer is still as good as any. They are durable and can be left in the soil for months. Just be sure to put it where it won’t get stepped on!

Two examples of weed seeds that are sensitive to soil temperature in a lawn and landscape environment are common crabgrass and poa annua. Crabgrass germinates when spring soil temperatures rise to 55 degrees or above in the top 1-2 inches of soil. Poa annua germinates in late summer when soil temperatures fall to 70 degrees or below in the top 1-2 inches

of soil. This is very important if you are applying lawn a herbicide which needs to be applied prior to the germination of these 2 weeds. The soil temperature needs to be closely monitored to make the decision when to apply.

The same is true for vegetable or flower gardens. It is important to read your seed packet or seed catalog information to glean the soil temperature range for the germination of the seed you wish to plant. An example of this is the difference between tomato seed germination and eggplant germination. Tomatoes need 60-70 degrees, and Eggplants need 75 to 80 degrees.

Fertilizers are broken down in the soil by soil microorganisms. Soil microorganisms and fungus organisms are more active at higher temperatures as long as moisture is present. Certain microorganisms thrive in different temperature ranges; some at 40-50 degrees, some at 50-60 degrees, some at 70-80 degrees, etc. In order for the fertilizer to be broken down, the microorganisms need to be active to convert the nutrients into forms usable by the plants. Did you ever notice mushrooms suddenly appearing in the fall all at once. This is an indication that the temperature and moisture conditions were just right to make them grow.

The take home message is that for a small investment in a soil thermometer, you can increase your ability to manage your soil related activities where knowing the soil temperature will make a difference.