

## **The Benefits of Knowing Soil Temperature**

If you guessed that sun, water and fertilizer are the most important factors that affect seed germination, establishment and growth, you would be wrong. The answer is soil temperature. At the proper temperature, the soil serves as a power generating plant to our seedlings.

Soil offers structural support, water and nutrients to seedlings. Soil also stores heat during the day and acts as a heat source at night.

Soil temperature drives germination of seeds and directly affects plant growth, and most soil organisms function best at an optimum soil temperature.

We can find the optimal germination temperature for any seed printed on the seed packet or in the seed catalog.

A seed absorbs about 30 percent of its weight in water and soil temperature does not affect that process. But, soil temperature does affect growth of both the radicle (first root) and coleoptile (shoot).

With soil temperatures below 50° F, seeds readily absorb water but do not initiate root or shoot growth. This opens up opportunities for insects and pathogens to attack seeds resulting in poor emergence.

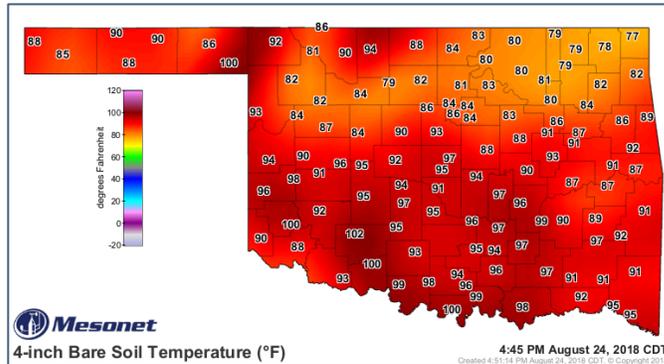
### **Measuring the Soil Temperature**

Farmers use special soil temperature gauges, but a standard digital thermometer will work for general soil assessment. Test to a depth of 4 inches under bare soil where nothing is planted on top.

### **Or Mesonet!**

The Oklahoma Mesonet is a world-class network of environmental monitoring stations. Quickly find the soil temperature for your county

at the link below. Then, look around the entire web site to see what else the Oklahoma Mesonet has to offer! [Mesonet Soil Temps](#)



Here is another handy resource - “Number of Days for Vegetable Seeds to Emerge at Different Temperatures.” It offers proof that planting at the proper temperature can really pay off. [Seed Germination Days](#)

Next year, plant your seeds at the optimal soil temperature. Your days to germination will be minimal and your seedlings will be strong and sturdy!

**Additional Resources:**

<http://sacmg.ucanr.edu/files/164220.pdf>

[https://www.tulsaworld.com/scene/gardenadvice/columnists/mastergardener/m-aster-gardener-soil-temperatures-determine-when-to-plant-veggies/article\\_9f05c067-61eb-525f-be09-6a214574a55f.html](https://www.tulsaworld.com/scene/gardenadvice/columnists/mastergardener/m-aster-gardener-soil-temperatures-determine-when-to-plant-veggies/article_9f05c067-61eb-525f-be09-6a214574a55f.html)

[https://aggie-horticulture.tamu.edu/newsletters/hortupdate/hortupdate\\_archives/2001/apr01/h2apr01.html](https://aggie-horticulture.tamu.edu/newsletters/hortupdate/hortupdate_archives/2001/apr01/h2apr01.html)

<https://www.agweb.com/weather/soil-temperatures/>



