

Agronomic Directions

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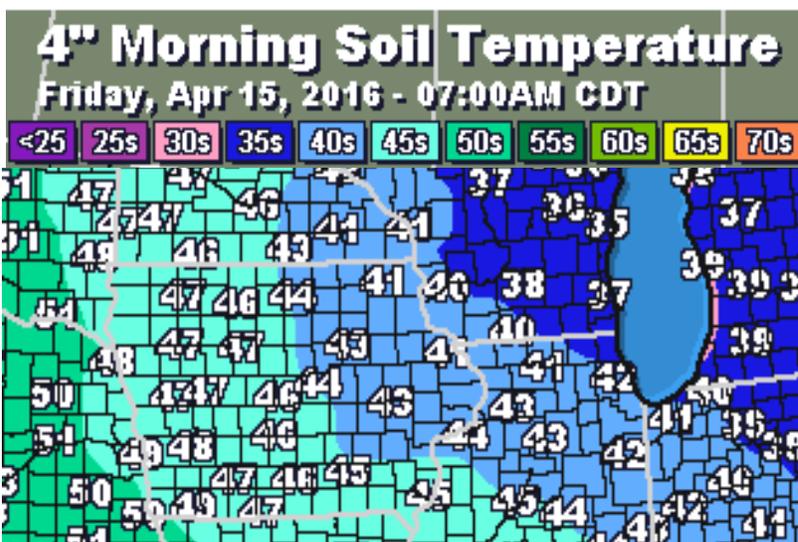
How to Achieve a Uniform Stand of Corn

Adapted from <http://www.agweb.com/article/top-6-tips-for-accurate-seed-placement-naa-aimee-cope/>. Published on March 3, 2016.

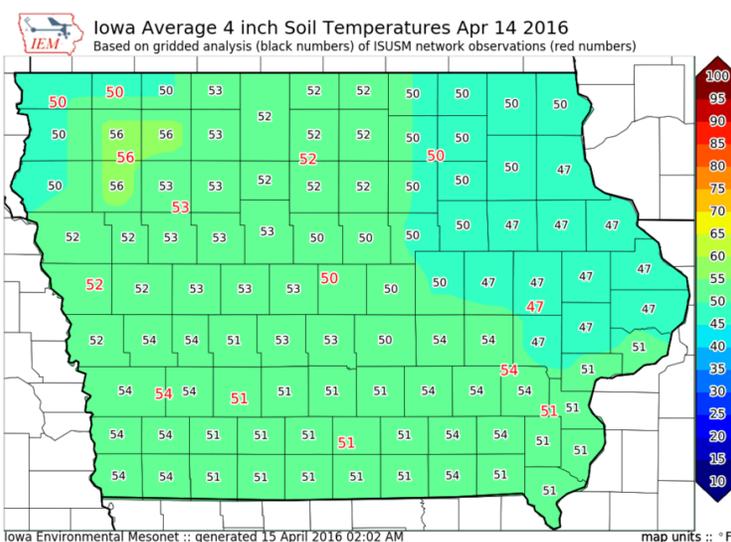
Adapted from <http://farmprogress.com/story-how-uniform-stand-corn-9-140072>. Published on April 14, 2016.

Ideal corn planting conditions are when soil temperature at planting depth reaches 50 degrees F and is expected to continue warming. This temperature is the key to achieving germination and emergence within seven to ten days or 90 to 120 growing degree units.

1. Corn kernels must absorb water equaling about 30% of their weight before germination can begin. This typically takes place in the first 36 hours. If this water is extremely cold, it causes the seed to go into shock and disrupts the emergence process. By ensuring the soil water temperatures are 50 degrees F and warming will aid in uniform emergence.
2. Evaluate temperature, soil conditions and moisture levels in the field and set the planter accordingly. The standard depth range for corn to achieve favorable conditions is 1.5" to 2", though this might vary from field to field. This depth range is considered standard because of the consistent moisture in the soil. When planting occurs at the proper depth, the microenvironment around the seed should show adequate moisture levels to start the germination process. Closing wheels play a big role in ensuring good seed-to-soil contact. To evaluate planting depth, scrape back soil to find the seed. Lay a ruler or flat item level across the furrow then measure from the item down to the seed.
3. Operating speed plays an important role when setting meters. Meter performance is tied to revolutions per minute (rpm), which are related to speed and seed population. Make sure to communicate planting speed with the meter adjuster. Operating speed is dictated by the meter, seed size and seed bed conditions. The smoother the ride, the easier it is to keep the planter from bouncing. When a row unit begins to bounce, meter performance and depth are affected. Adequate down force is essential to get a true "V" trench. The correct down force puts the seed in the bottom of the seed trench and closes the trench from the bottom up.
4. Uniform emergence can have a large impact on yield. To achieve uniform germination, all seeds need to germinate within 24 to 48 hours of one another. Bob Nielsen, Purdue University Extension corn agronomist says that uneven emergence can reduce corn yields by 9% to 22%. His research shows plant space variability can reduce corn yields from 2% to 4%. To achieve picket-fence stands and photocopy plants, every plant should have an equal amount of soil to operate in and capture the same amount of sunlight. When plants have to compete for sunlight and water, it's possible the plant's ear size and length will shrink.



<http://wicorn.ncgapremium.com/index.cfm?show=1&mapID=20>



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http://mesonet.agron.iastate.edu/data/soilt_day1.png