



AGRONOMY IN ACTION

ALERT

GoldenHarvest



Charles Scovill, CCA - Agronomist
517-282-7877 Laingsburg, MI

Planting in Cold/ Wet Soils

Spring marks the start of a new crop year, filled with excitement, optimism and a sense of urgency. Growers know the importance of early and timely planting to maximize corn yield potential. If the calendar says “go” but soil conditions and the weather forecast say “wait”, think twice before pulling the planter out of the shed. The disadvantages of planting into cold/saturated soils may outweigh the advantages of planting early. Consider the following best management practices before planting season starts to help you decide when to start planting.



In early spring it is best to wait until soil conditions are good to excellent. Try to avoid planting when wide temperature fluctuations can create challenges with germination and seedling uniformity.



Corn will germinate and begin growth at a 50° soil temperature. It is best if the soil has warmed to 55° or above within a week after planting. If the temperature stays near 50°, corn will germinate but progress will be slow, taking longer for plants to emerge. Slow early season growth and development caused by fluctuating soil temperatures can disrupt germination, causing reduced and uneven stands. Further, slow growth increases the risk of seedling disease and can negatively impact plant health and performance throughout the entire growing season.

Cold/ moist soils also increase the potential for herbicide damage in young seedlings. Slower seedling development reduces the plant’s ability to metabolize herbicides, increasing the risk of serious injury.

Keep an eye on the forecast and manage risk accordingly.

In the first 24-36 hours after planting, the corn seed will absorb or imbibe approximately 30% of its weight in moisture. Through this process the cell tissues in the kernel will swell and expand.

If cold temperatures persist and cold water is absorbed by the seed, imbibitional chilling may occur, causing cell tissues to become less pliable and rupture while swelling. This often stops germination. If the seed goes ahead and sprouts, growth of the radicle root and/or coleoptile may stop, preventing seedling emergence. Another tell-tale sign of imbibitional chilling is the "corkscrew effect" noted by the deformed elongation of the mesocotyl, which almost always leads to the seedling leafing out underground.



"Corkscrew" mesocotyl from cold injury to developing corn plant.
Source – Syngenta

Watch for seed placement and compaction issues when planting into moist soils.

Planting into moist fine textured soils may smear the sidewall of the seeding slot, causing poor slot closure which leads to uneven seedling germination and emergence. Planting into wet soils may also encourage side wall compaction. Adjust the down pressure on the closing wheels or press wheels to help minimize this issue. Watch for soil buildup on the gauge wheels to prevent planting at shallower depths. Also, if mud builds up on the disk openers and closing wheels, they may stop turning and plow a trench, leaving seed uncovered.

Plant corn at least 1.75 – 2.25" deep.

Planting at proper depths encourages good seed to soil contact, adequate soil moisture, and better development of the nodal roots. This maximizes water and nutrient uptake and helps to reduce late season root lodging. Planting shallower than recommended will not ensure warmer soil temperatures and faster emergence. In April wide swings in soil temperature often occur for shallow planted seed and cause coleoptile corkscrewing or leafing out underground to occur. Even if the weather is favorable and faster emergence occurs, shallow planted corn is likely to have a smaller root mass, causing lodging issues throughout the season.



Shallow planted corn in cool soils is also at a greater risk of soil-applied herbicide injury because the seed and roots are closer to the concentrated herbicide zone.

Monitor seed and seedling health in corn fields planted into cold/wet soils.

In order to assess seedling health, dig up seeds 7-10 days after planting. This will aid in predicting stand establishment or the potential for replant if conditions have been wet and cool during this period. It will also help you anticipate future crop health issues and guide you in making important management decisions later in the season.

While examining seedlings, check for rot diseases, such as Pythium and Fusarium, especially in fields with continuous corn, minimum tillage, or poorly drained soils. For corn that has not emerged, dig up the seed and look for any soft/mushy seeds, discolored seeds and seeds that have a rotten smell. Healthy seeds will be firm and will have a white or light color when the seeds are split open. For emerged plants, dig up the roots and look for any damage or discoloration, and split the plants to look at the growing point. A healthy growing point will be a whitish or cream color, and the tissue will be firm. Diseased tissue will be brown, soft and water soaked.

Early season fungal pathogens attack seedlings, but don't necessarily go away when the soil warms and the plants begin to grow. Disease damage to seedling roots often leads to delayed and stunted plants in June. There can be a 6 to 12- inch difference in height between diseased and unaffected corn plants. The shorter, diseased plants will act like weeds for the remainder of the growing season, stealing water and nutrients and not contributing to yield.

Make sure planters are in good shape and properly calibrated.

Uneven plant spacing and emergence (skips and doubles) caused by an improperly adjusted planter issue may reduce final corn yield potential. If fields are planted in wet conditions, factors within growers' control, such as proper planter maintenance and calibration, become more important.

Slow down when planting, especially in cold/ moist soils.

For most non high-speed planters, as planting speed increases over 4 mph, seed placement and accuracy is reduced. This adds to stand establishment and uniformity problems resulting from planting into cold and wet soils. It's always important to double check both planting depth and spacing as soil conditions change or when moving to a new field.

When challenged by cold and wet planting conditions, be sure to visit with your Golden Harvest® seed advisor to develop a hybrid placement strategy for cool soil conditions. Positioning hybrids to match greater emergence, seedling vigor, and disease tolerance with soils that will be slow to warm (due to high residue, heavy soils, etc.) may be critical to getting your crops off to a better start.

Visit www.goldenharvestseeds.com/agronomy. Join the conversation online – connect with us at www.facebook.com/GldnHarvest or www.twitter.com/GldnHarvest.

To unsubscribe from this email list, click [here](#). Provide your first name, last name, email address and the email address that sent the message. Visit <http://www.syngenta-us.com/legal/privacypolicy.html> to view Syngenta's Privacy Policy.

Please do not modify or alter the content of this message without prior, written approval from Syngenta.

Product performance assumes disease presence.

© 2023 Syngenta. **Important: Always read and follow label instructions. Some products may not be registered for sale or use in all states or counties. Please check with your local extension service to ensure registration status.** AAtrex 4L, AAtrex Nine-O, Acuron, Agri-Flex, Agri-Mek 0.15 EC, Agri-Mek SC, Avicta 500FS, Avicta Complete Beans 500, Avicta Complete Corn 250, Avicta Duo Corn, Avicta Duo 250 Corn, Avicta Duo COT202, Avicta Duo Cotton, Besiege, Bicep II Magnum, Bicep II Magnum FC, Bicep Lite II Magnum, Callisto Xtra, Denim, Endigo ZC, Endigo ZCX, Epi-Mek 0.15EC, Expert, Force, Force 3G, Force CS, Force 6.5G, Force Evo, Gramoxone SL 2.0, Gramoxone SL 3.0, Karate, Karate with Zeon Technology, Lamcap, Lamcap II, Lamdec, Lexar EZ, Lumax EZ, Medal II ATZ, Minecto Pro, Proclaim, Tavium Plus VaporGrip Technology, Voliam Xpress and Warrior II with Zeon Technology are Restricted Use Pesticides.

Some seed treatment offers are separately registered products applied to the seed as a combined slurry. **Always read individual product labels and treater instructions before combining and applying component products.** Orondis Gold may be sold as a formulated premix or as a combination of separately registered products: Orondis Gold 200 and Orondis Gold B.

Important: Always read and follow label and bag tag instructions; only those labeled as tolerant to glufosinate may be sprayed with glufosinate ammonium-based herbicides. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of BASF. HERCULEX® and the HERCULEX Shield are trademarks of Corteva Agriscience LLC. HERCULEX Insect Protection technology by Corteva Agriscience LLC. **Under federal and local laws, only dicamba-containing herbicides registered for use on dicamba-tolerant varieties may be applied. See product labels for details and tank mix partners.** Golden Harvest® and NK® soybean varieties are protected under granted or pending U.S. variety patents and other intellectual property rights, regardless of the trait(s) within the seed. The Enlist E3® soybean, LibertyLink®, LibertyLink® GT27®, Roundup Ready 2 Xtend®, Roundup Ready 2 Yield® and XtendFlex® soybean traits may be protected under numerous United States patents. It is unlawful to save soybeans containing these traits for planting or transfer to others for use as a planting seed. Only dicamba formulations that employ VaporGrip® Technology are approved for use with Roundup Ready 2 Xtend® and XtendFlex® soybeans. Only 2,4-D choline formulations with Colex-D® Technology are approved for use with Enlist E3® soybeans. ENLIST E3® soybean technology is jointly developed with Corteva Agriscience LLC and M.S. Technologies, L.L.C. The ENLIST trait and ENLIST Weed Control System are technologies owned and developed by Corteva Agriscience LLC. ENLIST® and ENLIST E3® are trademarks of Corteva Agriscience LLC. GT27® is a trademark of M.S. Technologies, L.L.C. and BASF. Roundup Ready 2 Xtend®, Roundup Ready 2 Yield®, XtendFlex®, VaporGrip® and YieldGard VT Pro® are registered trademarks used under license from the Bayer Group.

Trademarks are the property of their respective owners.