

Imbibitional Chilling

OVERVIEW. Corn has a small optimum planting window, making many farmers impatient to plant. However, planting too early can damage yield through imbibitional chilling injury, which occurs when the soil temperature drops below 50°F during the first 24-36 hours after planting.

WHAT YOU SHOULD KNOW.

- Planting timing is crucial to a high-yield crop. Planting corn before the soil temperature remains above 50°F may lead to imbibitional chilling damage, which happens when seeds absorb, or “imbibe”, water to begin germination.
- Imbibitional chilling of corn typically occurs when cool soil temperatures are paired with a cool rain in the first 24-36 hours after planting.
- Growers need to check the soil temperature and upcoming weather patterns before planting to ensure conditions are right for proper seedling germination. The soil temperature should be 50°F or warmer at the depth of planting.
- Ideally, weather should be dry for a week to 10 days following planting. This allows the corn to begin germination.

ACTION STEPS.

- 1. Watch soil and weather conditions:** Check the soil temperature at planting depth, not the surface temperature. If cold rain is predicted, hold off planting.
- 2. Scout fields:** After a cold snap within two weeks of planting, scout fields for any imbibitional chilling injury. Look for irregular elongation or “corkscrewing” of the mesocotyl, or “leafing-out” underground with delayed or failed seedling emergence.
- 3. Consider replanting:** If imbibitional chilling injury occurs, replanting as soon as possible is the only way to avoid yield loss. The earlier you replant, the more promising the yield.

NOTES:



If imbibitional chilling injury occurs, replant to avoid yield loss.

30 SECOND SUMMARY

- Imbibitional chilling occurs when the soil temperature drops below 50°F during the first 24-36 hours after planting.
- To prevent seedling injury, monitor soil temperatures and weather forecasts before planting.
- If a cold snap hits soon after seed is in the ground, scout early and decide if damage warrants replanting.