

Crops

Guard against corn stand loss

EYE ON CROPS



By **CLYDE TIFFANY**

MOTHER Nature often throws curveballs at crops, so growers need to do all they can to guard against loss of stand.

Yield potential often is set early in the growing season when stands are being established. Cooler, wetter conditions from early planting and/or from additional residue or manure applications can create conditions that hinder seedling emergence and make seedlings more susceptible to insects and disease.

Early planting: benefits and risks

Long-term data indicates that corn planting should be finished by the end of the first week of May, before yield loss starts to occur. With larger operations and uncertain weather conditions, many producers begin planting in mid-April if the soils are fit, so their last-planted fields are in before early May.

As a result, the earlier planting dates expose corn to an increased risk of colder temperatures and other extreme conditions such as snow or cold rains that can adversely impact a stand. Therefore, profitability is impacted, because one of the keys to top yields is uniform emergence of a full stand.

Seedbed conditions in the early spring can be highly unfavorable for seed germination, particularly when soils become saturated and temperatures drop below normal for an extended period of time.

Corn originated as a tropical plant from Central America, and it thrives in warm, moist conditions. When corn is planted early and soil temperatures drop below 50 degrees F, it is common for emergence to take as long as three to five weeks.

Early-season insect pressure is one of the perils associated with early planting. During prolonged emergence, seed may be attacked by secondary insects such as wireworm, seed-corn maggot or white grub, all of which can reduce harvest stand significantly.

Seedling diseases also are common when seedlings struggle to emerge.

New-generation seed treatments have shown they can provide effective early-season seedling protection. These treatments control key insects such as seed-corn maggot, wireworm and white grub, while fungicides control pythium, fusarium and Rhizoctonia.

Studies have shown that select products can help increase your stand yields due to higher stand levels from seedling disease control during stressful springs.

Improved stress emergence

Pioneer introduced a new stress emergence score a few years ago that refers to the genetic potential of a hybrid to germinate and emerge under stressful conditions. It does not refer to the rate of growth of a hybrid after it has emerged.

Key Points

- Choose a planting date that balances workload, soil conditions and weather.
- Choose fields with better drainage or less residue for the earliest planting.
- Select hybrids with improved stress emergence.

Pioneer researchers continue to improve early-season corn performance through conventional and molecular

breeding, as well as through rigorous testing of hybrids. By identifying molecular markers and pathways associated with superior cold germination, researchers are developing an understanding of the genetic basis of stress emergence. This knowledge eventually will lead to even stronger early-season performance.

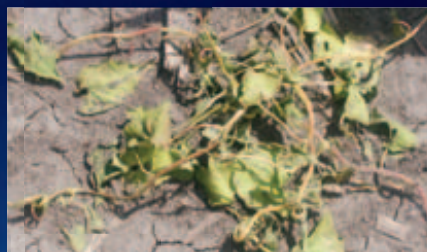
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