# ISSUES FROM PLANTING TO EMERGENCE CAN CAUSE YIELD LOSS

## SITUATION

Early season seedling damage can significantly reduce yield. Scout corn fields regularly and diagnose problems before economic losses occur.

## FACTORS TO CONSIDER

- Emergence patterns
- Missing seeds
- Poor germination
- Seed appearance
- Stand counts and replant decisions

Poor seed-to-soil contact or soil moisture and temperature variability can result in uneven stands.

## ACTION PLAN

1. **Scout fields for emergence patterns.** When diagnosing poor seedling emergence, looking for patterns is the best place to start. A uniform pattern of skips suggests a clogged, jammed or broken planter. Uniform, poor emergence patterns also can be caused by soil surface crusting. If the pattern of emergence is uneven, you'll have to do some digging to find the reason. Uneven emergence can be caused by soil moisture and temperature variability or poor seed-to-soil contact. Prolonged water logging in low-lying areas of the field also can cause uneven patterns of emergence. Soil insects could be the culprit, as well, so check for damaged seeds or empty seed coats at the bottom of the furrow.
2. **Check for germination.** Seeds showing no signs of swelling or germination are generally the result of poor seed-to-soil contact or dry soil. Seeds have to absorb about 30 percent of their weight in water before the radicle and coleoptile can begin to grow. If the seed is sitting in dry or cloddy soils, this process will happen very slowly or not at all. Injury from anhydrous ammonia, or excessive fertilizer or pesticide also can prevent the seed from taking in water. Shallow planting may cause seeds to swell but not germinate. Cooler soil temperatures slow the germination process and can predispose seedlings to fungal infection.
3. **Observe seed appearance.** Seeds that are brown in color and are soft or fall apart easily likely have been subjected to rot and will die. Cool, saturated soil conditions are ideal for seed rots. Herbicide damage may cause injury symptoms, such as twisted roots, club roots or purple plants.
4. **Replant considerations.** For severely damaged stands, you may want to consider replanting. If you choose to replant, a local crop consultant or agronomist can help select hybrids with shorter relative maturities appropriate for your area.

## SUMMARY

Corn may take up to four weeks to emerge when soil conditions are unfavorable. As long as stands are not seriously reduced, delayed emergence won't have a major impact on yield. However, if delayed emergence is associated with uneven plant development, yield potential can suffer.
For more information, contact your local Mycogen Seeds customer agronomist or trusted agronomic adviser.

**AgronomyServices**
***Precision. Product. Placement.***

Image courtesy of M. Licht, ISU Extension.