

Evaluating Corn Seed Emergence Problems

There are a plethora of reasons why corn plants sometimes don't show up for the dance. Although spring conditions have been mostly favorable (cold temperatures notwithstanding), every year we come across situations where corn emergence is an issue. Here's a quick rundown of some symptoms and possible causes:

No seed present. May be due to planter malfunction, bird or rodent damage. The latter often will leave some evidence such as digging or seed or plant parts on the ground.

Coleoptile (shoot) unfurled, leafing out underground. Could be due to premature exposure to light in cloddy soil, planting too deep, compaction or soil crusting, extended exposure to acetanilide herbicides under cool wet conditions, combinations of several of these factors, or may be due to extended cool wet conditions alone.

Seed with poorly developed radicle (root) or coleoptile. Coleoptile tip brown or yellow. Could be seed rots or seed with low vigor.

Seed has swelled but not sprouted. Often poor seed-to-soil contact or shallow planting.

Seed swelled then dried out. Check seed furrow closure in no-till. Seed may also not be viable.

Skips associated with discolored and malformed seedlings. May be herbicide damage. Note depth of planting and herbicides applied compared with injury symptoms such as twisted roots, club roots, or purple plants.

Seeds hollowed out. Seed corn maggot or wireworm. Look for evidence of the pest to confirm.

Uneven emergence. May be due to soil moisture and temperature variability within the seed zone. Poor seed to soil contact caused by cloddy soils.

Soil crusting. Other conditions that result in uneven emergence already noted above.

Finally, note patterns of poor emergence. At times these are associated with a particular row, spray width, hybrid, field or residue that may provide some additional clues to the cause. Often two or more stress factors interact to reduce emergence where the crop would have emerged well with just one present. Also, note the population and the variability of the seed spacing. This information will be valuable in the future.

Note: Summary provided by Peter Thomison, Ohio State University Corn Agronomist