

Corn Planting Depth and Stand Establishment

Proper corn seed planting depth is critical for optimum root and plant development. Shallow planted corn can delay or inhibit nodal root (brace root) development, which are the primary roots for water and nutrient uptake. **Planting corn seed to a depth of 1 ½ to 2 inches is optimum for nodal root development.** If corn is planted too shallow and the topsoil becomes dry or cloddy, a condition called “rootless corn syndrome” can develop. Plants will fall over due to the lack of nodal root development in dry soil. Also, shallow planting depths of less than one inch expose corn seedlings to herbicide residues increasing the potential for herbicide injury to corn seedlings.

Planting Depth

Planting depth can easily be determined after seedling emergence. The nodal root area (crown or growing point) typically develops about ¾ of an inch beneath the soil surface regardless of the seed depth. Measure the mesocotyl length (the area between the seed and crown or growing point, i.e. the 1st internode in the diagram) then add ¾ inch to determine the planting depth.

Symptoms of Irregular Planting Depth:

1. Uneven emergence.
2. Non-uniform mesocotyl length.
3. Varying plant height.

Planting Depth Recommendation:

1. Set the planting depth in the field, with the planter being pulled at full operating speed to ensure that the seed depth is representative of true planting conditions. Check again when moving to a new field.
2. Check for good seed-soil contact, looking for air pockets due to worn disc openers or plant residue.

3. Slower planting speeds achieve more uniform planting depths.
4. Utilize in-row residue management equipment where needed.
5. Utilize in-furrow seed depth control devices.

