

Proper planting depth key in corn planting

Written by Gothenburg Times
Thursday, 29 April 2010 21:27 -

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As Nebraska farmers gear up for corn planting, it is important to keep in mind problems that can result from incorrect planting depth, especially under wet planting conditions if the planter is raised up.

Problems can include: restricted root development due to compaction, rootless corn syndrome, lodging, lack of surface soil moisture, variable emergence, potential damage from pre-plant or pre-emergence herbicides and/or potential fertilizer injury.

“Proper planting depth is essential for ensuring good nodal and brace root development,” said Jenny Rees, UNL Extension educator in Clay County. “During the rush of getting the corn in the ground, especially under wet conditions, the planter often is raised up.”

Raising the planter can cause problems, though, Rees said.

“Often variable emergence is observed,” she said. “Also, as the seedlings grow, their roots may not become as established as they would if the seed were planted deeper.”

Bob Klein, Extension western Nebraska crops specialist at UNL’s West Central Research and Extension Center at North Platte, said on windy days in May and June you’ll see the effects of rootless corn syndrome when seedlings flop around, braced only by the main radial root.

“This causes a great deal of plant stress with plants often becoming dislodged or dying due to a lack of root structure and moisture stress,” Klein said. “This ultimately reduces plant population and subsequent yield.”

May winds can quickly dry out the surface soil, resulting in lack of soil moisture at the surface

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where seedling roots are found.

Shallow rooting depths also can increase the probability of damage from pre-plant and pre-emergence herbicides. Damage from fertilizer also increases with shallow planting, particularly when fertilizing within that planting row.

“It’s important to remember that many closing wheels are designed for a 2-inch seeding depth,” Klein said. “Planting shallower than this results in the seed being in loose soil that will dry out more quickly and provide for less seed-to-soil contact.”

Improper seeding depth also can contribute to agronomic problems later in the year such as increased stalk lodging due to inadequate brace root development. Brace roots on shallow planted corn often appear stubby and stunted and can be confused with symptoms caused by herbicide or nematode injury.

“Research conducted by universities and the ag industry show that planting at a 2-inch depth compared to a 1-inch depth provides more uniform plant populations and better yields, thus our recommendation is to plant corn at least 2 inches deep,” Rees said.

Many producers aim for a 1.5-inch planting depth; however, hitting old root stumps and not exerting enough down pressure when cutting through residue can quickly raise that planting depth closer to the surface.

This season the Greater Quad County On-farm Research producers will compare 2- and 3-inch planting depths, particularly in no-till planting conditions.

For information about on-farm, producer-driven research activities, visit the [CropWatch Farm Research page](#)