



NEWS COLUMN

UNIVERSITY OF ILLINOIS EXTENSION
Fayette County
118 North Sixth Street
Vandalia, IL 62471
618/283-2753

News source: Emerson Nafziger, 217-333-9658, ednaf@illinois.edu
News writer: Jennifer Shike, 217-244-0888, jshike@illinois.edu

Damaging Winds Set Corn Back

URBANA – Damaging winds have wreaked havoc on many Illinois corn fields throughout the past two weeks. Emerson Nafziger, University of Illinois Extension agronomist reports that the two major forms of damage that have occurred are green snap and root lodging.

“Green snap is when corn stalks break at a node,” Nafziger said. “It’s not a rare phenomenon, but we seldom have large acreages affected by green snap. It’s not at all uncommon to find fields with the same hybrid, planted a few days apart, showing different levels of the problem. Some hybrids tend to be more susceptible, but nearly every hybrid could show signs of damage if winds are high enough at the vulnerable stage.”

Green snap occurs at nodes, but the node of breakage can range from just above ground level to at or even above the ear, he said. The break point is set by how much growth there is above each node, leaves that catch the wind, and the brittleness of each node.

“When stalks elongate rapidly like they did this year, they tend to be more vulnerable to breakage,” Nafziger said. “Herbicides like dicamba can also contribute. In general, the faster the growth, the more susceptible plants are to green snap.”

Yield effects of green snap depend on how many plants are snapped and where the breakage takes place. Stalks that break above the ear will usually produce an ear, but if nearby plants are intact, they will shade the broken-off plants and reduce ear size.

Plants that break near the ground won’t produce yield, but will allow more light to reach intact plants which will produce more grain. Thus, the loss of plants will typically reduce overall yield less than the percentage of broken plants might suggest, Nafziger said.

“Even though we might be able to find hybrids that seldom or never show green snap, the problem is rare enough in Illinois that we probably should not sacrifice any yield potential to gain this protection,” Nafziger said. “Lowering the plant population, which allows individual plants to grow a little faster, does little or nothing to reduce green snap. Crop insurance is probably the best way to prevent catastrophic losses from this problem.”

Another commonly reported problem is root lodging resulting in plants leaning at different angles as the roots pull partway out of the soil. Flattened corn fields caused by high-velocity winds can be very distressing. People often talk about “steamrollered” fields or fields “less than a foot

high.” Nafziger said this phenomenon is somewhat more complex than green snap, and its effects are more difficult to predict.

“It’s obvious that plants with stalks strong enough to resist breakage might be pushed over instead,” he said. “It’s also possible that plants with root systems that aren’t quite large enough, deep enough, or well-enough anchored in the soil tend to root-lodge before they have a chance to green snap.”

The two major types of injury suffered by “leaning” plants are disruption of the root system and disorientation of the leaves. Root systems often lose more than half of their contact with the soil, and this reduces their ability to take up water and nutrients. Having some of the leaf area underneath the plants and, in extreme cases, down against the ground, reduces the amount of sunlight these leaves can take in.

Unfortunately, this is happening at a time when plants need to have maximum photosynthetic rates to assure successful pollination. One positive is that this slows the rate of water uptake, and this may help roots to reestablish soil contact, both by soil settling (with rainfall) around the roots, and by some new root growth, Nafziger added. The closer to pollination this happens, the less ability plants have to regrow roots, but this ability doesn’t go away until several weeks past pollination.

“One of the keys to recovery of root-lodged plants is the degree to which the lower stalk can turn back upwards, bending so that the leaves can be reoriented better to intercept sunlight.” he said. “The later in growth the lodging happens, the less flexibility stalks have to do this and the higher up the stem this flexibility exists. Such plants end up ‘goose-necked’, but that by itself doesn’t cause a lot of harm if the leaves can intercept the sunlight and the roots can recover well enough.”

Research that has been done in which plants are artificially root-lodged at different times and to different degrees has generally shown some yield loss. But this loss has not been as great as the appearance of the crop immediately after the event might suggest, Nafziger added.

For more information, read *The Bulletin* at <http://bulletin.ipm.illinois.edu/>.