AGRONOMIC // UPDATE

Stalk Lodging and Harvesting Down Corn

High winds, stalk rots, and stalk cannibalization are factors that can contribute to stalk lodging and down corn. Harvesting lodged and down corn can lead to yield loss and storage issues. These losses can be minimized by effective management of harvesting lodged or down corn.

What to Consider. As corn nears maturity, stalk integrity can be reduced. Stalk strength is naturally reduced by cannibalization, which occurs when nutrients are moved from the stalk to kernels during grain fill. Additionally, stalk rots and secondary pathogens can diminish stalk quality. High winds can cause corn with weakened stalks to lodge, especially in fields where significant cannibalization and stalk rot infection has occurred (Figure 1).

Yield Impact. Fields with considerable lodging can be a challenge to harvest efficiently. Most harvest loss occurs because ears of down corn never get into the combine. Harvest losses in down corn may be 10 to 15% even when care is taken during harvesting. Downed corn is also at greater risk of poor drydown and other kernel problems. Lodged corn will be more likely to have molds or kernel sprouting if ears are in contact with the ground. The combination of variable grain moisture, possible kernel molds and kernel sprouting can increase the challenges of successfully storing the grain.

Management Options. Start by inspecting fields to identify where corn is down and where it is standing. Check fields for stalk strength using the grab test. Grab the corn stalks at shoulder height, pull or push about 18 inches off center and release. If the corn stalks remain upright, stalk strength is good. If not, stalk strength is weaker. Also, determine the grain moisture in the fields. Knowing the percent of corn that is down or lodged along with the grain moisture can help determine harvest order. Take into consideration that upright corn, depending on stalk strength, is also at risk of lodging. Fields with down corn can take three to four times longer to harvest than fields of upright corn. Therefore, it can be challenging to decide when to harvest the downed corn and the upright corn.

Fields with considerable lodging can reduce harvest efficiency. Harvesting as many of the downed ears as possible requires slow going and patience. The issue becomes how to operate the combine to gather up the most ears. Following are some harvesting tips to protect yield potential:

- Slow down and reduce combine speed to help reduce the number of missed ears.
- Harvest against the angle of lodged corn to help maximize lift into the header. If corn is all laying down in the same direction, the combine may work best when harvesting from the opposite direction.
- Operate the combine corn head as low as possible without picking up rocks or significant amounts of soil.
- Use corn reels to improve harvest efficiency.
- Harvest when dew is present to minimize fluff.
- Adjust combine properly to help minimize broken kernels and fines as they can lead to spoilage in storage.
- Set combine to blow out as much of the fines and foreign material as possible.
- Follow the combine operator's manual for cylinder adjustments, speed, and clearance settings suggested by the manufacturer.

Figure 1. Fall stalk lodging due to cannibalization and stalk rots.

Sources: Thomison, P. 2016. Tips to help farmers harvest down corn. Ag Professional. October 12, 2016. http://www.agprofessional.com; McNeil, S. and Montross, M. Corn harvesting, handling, drying, and storage. University of Kentucky Cooperative Extension. http://www.ca.uky.edu. Web sites verified 9/17/18.