

Harvesting Lodged and Down Corn

Stalk lodging and down corn can complicate harvest and lead to yield loss and storage issues. Effective harvest management can help minimize yield and storage losses in lodged and down corn.

What to Watch For

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.

Potential Impact of Lodged Corn on Yield and Quality

Fields with considerable lodging can be a challenge to harvest efficiently. Harvest loss is unavoidable even in standing corn. Losses of 1% can occur at the corn head even with the most experienced operators.¹ Most harvest loss in lodged corn occurs because the ears on down corn are not picked up by the corn head and do not make it into the combine. Harvest losses in down corn may be 10 to 15% even when care is taken during harvesting. For each ¾-lb ear left in an area equal to 1/100 of an acre there would be an approximate loss of one bushel/acre. An example of 1/100 of an acre would be equivalent to an operator using an eight-row, 30-inch corn head (20 ft wide) by 21 feet 9 inches long (435.6 sq ft).² Lodged corn is also at greater risk of poor drydown and will be more likely to have molds or kernel sprouting if ears are in contact with the soil. The combination of variable grain moisture, possible kernel molds, and kernel sprouting can increase the challenges of successfully storing the grain.

Scout Fields to Determine Lodging Potential

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 as well as 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 a high percentage of lodged corn can take three to four times longer to harvest than fields with stalks that are standing well. Therefore, it can be challenging to decide when to harvest the downed corn and the standing corn.

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Tips to Manage

Fields with considerable lodging can reduce harvest efficiency. Harvesting as many of the down ears as possible requires slower speeds and patience.

There are several management tips to help increase the number of ears harvested by the combine:^{2,3}

- Reduce the combine travel speed.
- 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.
- Set the gathering chains for aggressive operation and adjust deck plates slightly wider than the stalk diameter to avoid the stalks wedging and potentially plugging.
- The addition of reels to the corn head may allow for increased harvest speed which could help improve harvest efficiency.
- Harvest when dew is present to minimize fluff.
- Adjust the speed of the combine's rotor, or cylinder, and concave clearance to help minimize broken kernels and fines as they can lead to spoilage in storage.
- Set the combine cleaning fan to a speed that will blow out as much of the fines and foreign material as possible.
- Follow the operator's manual for cylinder adjustments, speed, and clearance settings suggested by the manufacturer.

Keep Safety Top of Mind

Harvesting down corn will not be business as usual as it requires much more time and patience than normal corn harvesting operations. Plugging of the corn head is more likely to occur in down corn than standing corn, so keep safety in mind when needing to stop the combine to un-plug the header. Be sure to disengage the corn head before attempting to clear out a plugged row(s).

Sources:

- ¹ McNeill, S., Montross, M. and Stombaugh, T. A comprehensive guide to corn management in Kentucky, Chapter 11. Corn harvesting, drying and storage. University of Kentucky College of Agriculture, Food and Environment. <http://www2.ca.uky.edu/agcomm/pubs/id/id139/id139.pdf>
- ² Hanna, M. Harvesting lodged corn. Iowa State University Extension and Outreach. <https://crops.extension.iastate.edu/encyclopedia/harvesting-lodged-corn>
- ³ Thomison, P. 2016. Tips for harvesting lodged corn. The Ohio State University Extension. <https://agcrops.osu.edu/newsletter/corn-newsletter/2016-33/tips-harvesting-lodged-corn>

Legal statements

Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

The recommendations in this material are based upon trial observations and feedback received from a limited number of growers and growing environments. These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

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