



# Agronomic Spotlight

## Effects of Corn Kernel Sprouting

- Kernel sprouting can occur under wet and warm fall conditions.
- Kernel sprouting is more common in corn products that tend to have erect ears and open husks at maturity.<sup>1</sup>
- If corn kernel sprouting is suspected, fields should be harvested as soon as possible and dry grain at high temperatures prior to storage.<sup>1</sup>

## Corn Kernel Sprouting

When corn kernels sprout on the cob prior to harvest it is called vivipary.<sup>1</sup> Kernel sprouting can occur when moisture becomes trapped in the husk, allowing kernels to absorb the water and germinate (Figure 1 and 2). Kernel sprouting on the cob prior to harvest is most likely to occur when black layer has been reached, kernel moisture has dried to less than 20 percent, and the kernels are then exposed to moisture. This phenomenon is more common in warmer southern regions. Corn products that tend to have an upright ear at maturity with an open husk may be more susceptible to kernel sprouting. Continuous rainfall at harvest favors kernel sprout.

While it is more common after physiological maturity, immature kernels on ears that have been subjected to damage from hail, pests, or ear molds are also known to sprout. It is believed that the physical damage to the immature kernels may disrupt the hormone balance within the kernel and allow for early germination.

Factors that can contribute to premature sprouting of kernels include:<sup>2</sup>

- Erect or upright ears
- Bird and/or hail damage
- Ear mold
- Wet weather and/or flooding
- Stalk breakage/lodging

When premature kernel sprouting occurs, seed quality will be compromised. Sprouted kernels will usually be lighter and affect grain test weight.<sup>2</sup> Sprouted kernels are also more susceptible to the development of

molds and mycotoxins. These quality issues may result in discounting of the grain.

## Management of Kernel Sprouting

Certain management options may help decrease the effects of premature corn kernel sprouting prior to harvest. Planting a range of corn products with different maturities and growing degree unit (GDU) requirements until flowering is a good practice to help spread out harvest and reduce the likelihood of corn maturing at the same time. If kernel sprouting is suspected, harvest fields as soon as possible. Once harvested, if a high number of kernels are affected, dry grain at higher temperatures to prevent any further growth of the seedlings. Prior to storage, screen grain to remove green growth or damaged kernels.<sup>1</sup> Core the stored grain after filling to remove additional fines or broken kernels from the center of the bin.

### Sources

- <sup>1</sup>Nielsen, R.L. Premature corn kernel sprouting. Purdue University. Corny News Network. <https://www.agry.purdue.edu>.
- <sup>2</sup>Premature sprouting of corn kernels. The Ohio State University. <https://u.osu.edu>. Web sources verified: 09/26/2016



Figure 1. Premature kernel sprouting. Photo source: R.L. Nielsen. Purdue University.<sup>1</sup>

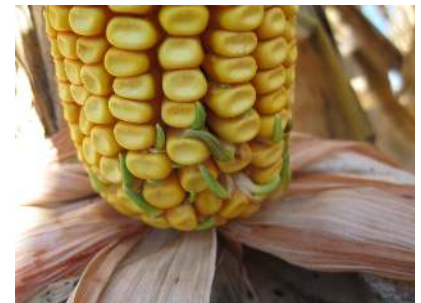


Figure 2. Corn kernels sprouting at base of cob.

For additional agronomic information, please contact your local seed representative. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. All other trademarks are the property of their respective owners. ©2016 Monsanto Company. 160922212513 10062016CRB.