



## Corn Kernel Sprouting

### KEY POINTS

- Corn kernel sprouting can occur under wet and warm conditions in the fall.
- Kernel sprouting is more likely to occur in corn products that tend to have upright ears at maturity and open husks.
- If kernel sprouting is suspected, harvest fields as soon as possible and dry corn at high temperatures.



Figure 1. Corn kernel sprouting is usually limited to several rows of kernels at the butt end of the ear because this is where water can be trapped in the husk. Sprouting can also occur from uncovered kernels near the ear tip or on the ear in general under the right conditions.

### Kernel Sprouting

Premature germination or sprouting of kernels prior to harvest is also known as vivipary. It primarily occurs when moisture becomes trapped in the husk, allowing kernels to absorb water and germinate (Figure 1). 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 kernels are exposed to moisture. It 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 sprouting.

While it is more common after physiological maturity, immature kernels on ears that have been subject to damage from hail, pests, or ear mold 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 contribute to premature sprouting of kernels include erect ears, stalk breakage/lodging, bird and hail damage, ear molds, wet weather, and flooding conditions.

When premature kernel sprouting occurs, seed quality will be compromised. Sprouted kernels are usually lighter, lower in test weight, and more susceptible to mold and mycotoxin development. These quality issues may result in the grain being discounted when marketed.

### Management

Some management options may help decrease the risk of premature 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. Core the stored grain after filling to remove additional fines or broken kernels from the center of the bin.

**Sources:** Nielsen, R. 2012. Premature corn kernel sprouting (aka Vivipary). Purdue University Corny News Network. <http://www.agry.purdue.edu>.; Rees, J., Cassman, K., Kruger, G., and Glewen, K. 2013. Sprouting corn kernels on hail-damaged ears. University of Nebraska - Lincoln CropWatch. <http://cropwatch.unl.edu>. Web sources verified 07/12/18.

**Performance may vary**, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields. 160922212513 071618TED