



Introduction

Pre-harvest inspections in Illinois indicate that the amount of ear dropping and ear flinging this year might be higher than what we have experienced the last couple of years. If this condition occurs, it will likely affect numerous hybrids and brands across a large geographic area.

CAUSES

Ear drop is usually caused by the interaction of numerous factors, rather than a single factor. Factors that contribute to ear drop are described below:

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European Corn Borer

Second generation European corn borer causes dropped ears by tunneling in the shank and weakening attachment to the stalk. Dropped ears resulting from corn borer usually have husks still attached.

Moisture Stress

Severe moisture stress late in growth stages can cause abnormalities in corn plant growth and development. Critical moisture stress during shank development can cause irregular cell development in the shank resulting in more ear drop.

Rapid Dry Down

Harvest seasons where fast dry down occurs can have more ear drop compared to normal or slow dry down environments. The exact physiological cause of this is not known, but it is probably related to unusually dry and brittle tissue at the point of ear attachment during these conditions.

“Pinched Shank”

Dropped ears will often have a shank with a pinch (constriction) on one side of the shank. These ears typically have unpollinated missing kernels on the butt end of the ear. The area of missing kernels corresponds to where the pinch occurs on the shank. Whether these unpollinated kernels are the cause or the effect of the pinched shank is not understood.

Genetic Component

Certain hybrids are more prone to dropped ears because of susceptibility to European corn borer, or having a small diameter shank attachment to the ear. Because hybrids with a small diameter shank or susceptibility to second generation corn borer tend to drop ears more frequently, corn breeders select against these hybrids. These hybrids generally are discarded during testing or have a short product life cycle in the market. ▶

*Dropped Ears, Continued***SUMMARY**

In summary, ears that are dropping clean (no husks on them) before harvest or during combining can be caused by environmental conditions that weaken cells in the ear shank (severe moisture stress, rapid dry down, early frost). Once the shank is weakened, the plant is predisposed to ear drop at the shank to ear attachment.

Additionally, there may be certain genotype-by-environmental interactions that make some hybrids more susceptible to ear drop.

Ears that have dropped and still have husks are typically caused by European corn borer.

In the past, the following steps have helped minimize losses caused by ear drop/fling:

- Planting corn borer resistant hybrids
- Slowing down the speed of the corn head
- When ear drop/ear fling is severe, letting the corn dry a few more points before continuing harvest
- Installing ear saving devices on the combine head