Agronomy Profile



Frost at Harvest

Overview

Many factors contribute to how early frost in the fall can affect corn harvest, drying and storage. The severity of damage will depend on the stage of the corn development, the duration of freezing temperatures and subsequent plant damage.

What you should know

- Corn frozen in the milk stage will have little value as grain and is best used for green chopping or silage.
- Dough stage or fully-dented corn that is frozen will have significantly reduced yield and very wet kernels. If frost occurs at dough stage, delay harvest until grain moisture is around 35%.
- When harvesting grain that has been frozen before maturity, incrementally increasing cylinder speed can avoid damage to kernels and reduce concave clearance, since cobs will retain more moisture.

Action steps

- Adjust drying temperatures: Dough stage corn turns brown or darkens when kernel temperatures are above 130-140°F, so use lower drying temperatures. Frost-damaged grain can read 2+ points higher than actual moisture and it may take 4-8 hours for moisture to equalize.
- 2. **Modify storage:** Low-test-weight corn is difficult to store due to kernel breakage. It can be stored only half as long as full-maturity corn. Dry corn to at least 14% for short-term winter storage if grain is to be marketed by spring. For longer storage, dry corn to below 13%. Variability in moisture, increased kernel damage, foreign material and broken cobs contribute to mold, so screen before storage.
- Choose the right hybrids: Select hybrids that are expected to reach physiological maturity before the average date when freeze risk exceeds 50%. Choose hybrids with a range of maturities to decrease risk of damage to the entire crop in the event of early frost.



Select hybrids that are expected to reach maturity before the danger of frost.



- Choose hybrids that will mature before frost risk.
- The corn development stage, timing and length of frost, and amount of damage, will determine what treatments are needed to avoid economic loss.
- Adjusting drying temperatures and making storage adjustments can help preserve your yield.

NOTES:

For more information, contact:



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