

# TECHNICAL BULLETIN

## Late Season Frost on Corn

Severity of frost damage depends on the duration and extent of subfreezing temperatures. Low lying areas may have frost damage even when air temperature is several degrees above freezing. Stalks, husks, and grain have more tolerance to frost damage than leaves. Thin stands are more susceptible than thick stands. The effect of frost damage on final grain yield depends on how much leaf tissue is killed and the stage of corn development. Kernels will continue to accumulate some dry weight as long as the stalk tissue has not been killed by the frost. Grain yield reduction will be less as plants approach black layer stage. Dry matter accumulation in the kernel will prematurely stop if a severe frost kills the whole plant before kernel black layer has formed.

When a frost has occurred, growers need to consider the stage of their crop. The earlier the growth stage the greater the potential yield loss. Harvesting for silage is often the best option until at least the late dent stage. Consider the following management points for milk stage through black layer:

### *Milk Stage*

- Grain is not an option at this stage.
- Green chop or let corn dry and ensile when less than 70% whole plant moisture. If ensiled immediately, silage will be wet and sour with lower nutrients and palatability. Field losses may become too great if allowed to dry completely to 70%. Growers may have to compromise between field drying and silage quality.

### *Dough Stage (Early milk line formation)*

- Grain moisture will be 50-60% and must be allowed to field dry to about 35% before combine harvest is possible. This extended field drying may cause additional losses from stalk lodging and ear molds. Test weight will probably not exceed 50 pounds/bushel. Expect 30-50% yield reduction.

### *Early Dent Stage (Milk line less than 1/2 down)*

- Similar to dough stage, but test weights should be higher and yield reduction less. Allow field drying as long as standability is acceptable and presence of ear molds is low. Expect yield losses of 20 - 30%.

### *Late Dent Stage (Milk line 1/2 - 3/4 down)*

- Allow to dry in field, but harvest as soon as possible to decrease the risk of stalk lodging and mold development. Grain losses will be approximately 5 - 15%, and test weights will be near normal.

### *Black Layer Stage*

- Little or no affect from frost. Expect normal yields and test weights.

George Watters  
Regional Agronomist – 10/2009

AgriSolutions is a trademark of Winfield Solutions, LLC. ©2009 Winfield Solutions, LLC

