

Timely Harvest Important In Drought Stressed Corn

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Using a yield trend line for the past 30 years, I calculated that corn yield for Missouri in 2012 should be about 141 bushels per acre. The August USDA estimate for Missouri is only 75 bushels per acre, a yield reduction of 47 percent. Harvest has just begun, so time will reveal the accuracy of the 2012 estimate. Regardless, 2012 was and continues to be one of the more challenging years for corn in Missouri. Most Missouri farmers are understandably disappointed in their corn yields and cautious to sink additional expenses into the crop.

However, timely harvest is essential to harvesting as much of the yield as possible even if it results in increased drying or aeration costs. Corn stalk quality is often poor in a drought year, and poor stalk quality leads to increased preharvest and harvest losses. There are several reasons for poor stalk quality in drought years, and these reasons probably differ among fields in 2012. Several disease-causing fungi (e.g. charcoal rot) grow fairly well on heat and drought stressed corn stalks. Potassium uptake is important for stalk quality, and K uptake is often reduced from dry soils. Stalk diameter of drought stressed plants is smaller than normal. Lateral cell expansion was limited because of reduced turgor pressure. Finally, many plants died earlier than normal and this allowed saprophytic fungi to attack dead cells and break down cellulose and other structural compounds.

Regardless of the reason, poor stalk quality leads to stem breakage (Figure 1). Breakage often occurs below the ear making it difficult to gather ears into the combine. Recently, the rem-

nants of Isaac and several cold fronts have brought rain to many parts of Missouri. In addition, high dew points have resulted in heavy dews and fog. Rains, dews, and fogs keep corn stalks damp for many hours. Warm temperatures, even mid 70s, along with damp plant tissues stimulate fungi growth. These fungi break



Poor corn stalk quality and stem breakage are common following drought stress.

down stem tissues and weaken the stalk. Even stalks with small ears become susceptible to breakage. Winds, especially those associated with late summer storms, add to the breakage.

Stem breakage increases with time and harvest delay. So, timely harvest, as soon as fields are dry enough to withstand combine and wagon traffic, is important to reduce harvest losses. Harvesting a larger portion of the low yields common this year may outweigh additional costs often associated with an early harvest. Δ

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