Purdue University Department of Agronomy

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Grain Drydown, Stalk Lodging, and Harvest

R.L. (Bob) Nielsen
Agronomy Department
Purdue Univ., West Lafayette, IN
Email: rnielsen@purdue.edu

Indiana's corn crop is moving toward maturity with an estimated 19% of the acreage reported to be mature (USDA-NASS, 6 Sep 2005). The good news is that above-average temperatures forecast for the next several weeks will not only hasten final kernel development and maturity for the remainder of the state's crop, but will also encourage rapid drying of mature grain in the field (Nielsen, 2005a). Drydown of grain in the field may exceed one percentage point per day during the next several weeks if above normal temperatures occur as forecast.

The further good news is that rapid grain drying of the corn crop will facilitate earlier harvest of fields weakened by the development of stalk rots or insect damage to the stalks. Stalk rot development is especially likely in fields where severe drought stress prevailed during the grain filling period (Nielsen, 2005b).

The bad news is that some of these fields have already begun to lodge severely; especially in areas affected by the remnant rains and winds of Hurricane Katrina that moved through southern Indiana last week. The further bad news is that more fields with stalk rot or insect-damaged stalks will be at risk of severe lodging if another storm system moves through the state before harvest or if rainy weather sets in for an extended period.

Some of the severe lodging from last week's rain and wind occurred in fields not yet mature. Severely damaged immature corn will likely shut down prematurely (kernel black layer development). If silage is an option, obviously that would be a preferred choice for utilizing immature corn that is severely flattened.

Drydown of grain (mature or immature) will be slower where ears are literally lying near the soil surface simply because they are less exposed to sun and wind. Less-severely lodged corn will dry at fairly normal rates.

Growers should recognize that possible development of ear molds resulting from direct or rain-splash contact with fungi and bacteria on ears lying near or at the soil surface obviously increases the risk of poor grain quality (personal communication w/ Charles Woloshuk, Purdue plant pathologist). That risk plus potential kernel sprouting in ears lying close to the soil surface could increase grain quality headaches for growers on the worst lodged fields or areas of fields.

Depending on the number of acres involved, some growers may want to check into specialized equipment for harvesting lodged corn. The following Web site from Penn State Univ. lists links to several manufacturers...

http://cornandsoybeans.psu.edu/lodgeequipment.cfm

Dirk Maier, Purdue grain quality specialist, suggests that growers segregate storage of grain from severely lodged areas from the rest of their corn if possible to avoid grain quality discounts when marketing the grain later. The U.S. marketing standards for corn allow up to 5% total damaged corn kernels in U.S. No. 2 corn (USDA-GIPSA, 1996).

The bottom line is two-fold: First, the forecast high temperatures will be very conducive for rapid grain drying in corn fields and may enable an earlier than expected start to harvest. Second, growers should continue to monitor fields, identify those with severe stalk rot and lodging potential, and target those fields for as early a harvest as is feasible.

Related References

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USDA-NASS. 6 Sep 2005. Indiana Crop & Weather Report. USDA-Nat'l Ag. Statistics Service. Online at http://www.nass.usda.gov/in/cropweat/2005/we3605.pdf [URL verified 9/7/05].

Don't forget, this and other timely information about corn can be viewed at the Chat 'n Chew Café on the Web at http://www.kingcorn.org/cafe. For other information about corn, take a look at the Corn Growers' Guidebook on the Web at http://www.kingcorn.org.