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Test Weight in Corn

What is Test Weight?

Test weight of corn determines the weight of a bushel volume (1.244 cubic feet) of grain. Test weights determined on dry (15.5% moisture) corn can indicate whether the grain crop reached full maturity. Low test weights indicate immaturity. The minimum test weight for USDA No. 2 corn is 54 pounds per bushel.

What causes low Test Weight?

When we speak of test weight, we are more specifically talking about the accumulation of starch in the kernel during grain fill. Grain fill and thus test weight may be adversely affected by early frost, drought, high temperature, nutrient deficiency, disease or insect injury, shading, hail damage, overpopulation, and other stress factors. The relationship of stress and test weight is most severe during the early stages of grain fill and lessens as the starch levels get closer to full accumulation (black layer).

How does low test weight affect me?

In most cases it is assumed that a higher test weight is better when comparing similar maturity hybrids. Wet millers and dry millers choose this attribute for quality purposes, as do feedlots for livestock feeding value. University research from Minnesota has shown that the effects of low test weight corn (<54#) are minimal on feed value. Due to this and other similar findings, feedlots should continue with full season hybrids and put less emphasis on test weight. Elevators and processors will dock based upon test weight, particularly when the weight falls below 54 pounds per bushel. They do this for a variety of reasons; higher transportation costs, lower milling quality, greater potential for mycotoxins and storage problems

Table 1. Grain corn test weights and potential dockage.

Grade	Test Weight Minimum (lb/bu)	Potential Dockage $/bu
2	53.0	0.00
3	51.3	0.02
4	49.7	0.10
5	46.5	0.20

Table 1 outlines potential dockage that growers may experience when delivering lower bushel weight corn to an elevator or processor. (Note: these discounts will vary from elevator to elevator and from year to year and are provided as an example only.)

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What, if anything, should I do if I'm concerned about low test weight?

Producers who deliver all of their corn to elevators or processors may want to switch to earlier hybrids to increase the potential for suitable test weights at harvest. Producers in shorter season areas who fear significant yield losses by switching to earlier maturing hybrids may consider staying with full season hybrids but switching to hybrids which have higher test weight scores. Test weight concerns should also be taken into consideration when selecting hybrids for planting in a delayed spring.

CREDITS: University of Minnesota
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