

7-16-2009

Corn Quality Issues Continue

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Recommended Citation

Hurburgh, Charles R., "Corn Quality Issues Continue" (2009). *Integrated Crop Management News*. 592.
<http://lib.dr.iastate.edu/cropnews/592>

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Abstract

The saga of the 2008 corn crop continues as mold-damaged corn comes out of storage and onto the market. Present market conditions are reducing movement which will cause longer storage times. Elevators report that they are still receiving 15-17 percent moisture corn in deteriorating condition, which will add to last winter's problems with temporary piles and flat storages.

Keywords

Agricultural and Biosystems Engineering

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Bioresource and Agricultural Engineering

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Corn Quality Issues Continue

By Charles R. Hurburgh, Department of Department Agricultural and Biosystems Engineering

The saga of the 2008 corn crop continues as mold-damaged corn comes out of storage and onto the market. Present market conditions are reducing movement which will cause longer storage times. Elevators report that they are still receiving 15-17 percent moisture corn in deteriorating condition, which will add to last winter's problems with temporary piles and flat storages.

Last fall and again this spring, ISU Extension put out several bulletins on the quality and handling of the 2008 corn crop. At that time, corn was coming out of the field very wet, with soft texture, low test weight and low protein content. These were consequences of the cool wet growing season; much of Iowa corn never did reach full maturity. This type of corn has roughly half the storage life of normal corn under the same moisture and temperature conditions.

End users (corn wet mills, feed mills, ethanol plants) are reporting that the increase in damaged kernel levels is sufficient to require closer grading of inbound grain, and in many cases increased discount scales for damage, above the typical 2 to 3 cents per bushel per point over 5 percent. When many types of damage are present, from total discoloration to internal germ or blue-eye damage, the visual grading process becomes quite time consuming. No less than 125 grams of corn, mechanically divided not hand scooped, from an original sample of at least 1 to 2 pounds should be picked for damage. USDA graders start with approximately five pounds before subdivision. Any sample that creates a price discount for damage should be retained until settlement, because damage grading can be subjective and retesting or appeal is sometimes requested. Either party to a trade has the right to request an Official [USDA-GIPSA analysis](#) in cases of dispute, although there will be costs and time delays for this process.

The numbers are simple; No. 2 Yellow Corn allows 5 percent damage. It takes about 20 bushels of normal corn from the field (3 percent or less damage) to absorb 1 bushel of 30 percent damaged corn; more for higher damage. Damage reduces product yields and performance for every user industry, which is why the market retains the No. 2 levels as benchmarks.

What to do now?

Very wet corn (15 percent or higher) should be dried immediately. Any corn that has had any signs at all of heating or mold should be moved as soon as possible; the situation will only get worse. Test weight is a reasonable indicator of future problems; if you have test weights over 56 lb/bu and no spoilage has happened yet, you can probably keep the corn a while longer.

Expect closer grading of corn. The apparently increased supply of corn will allow buyers to become more restrictive about quality. This may require additional marketing actions to sell the physical grain and still retain market participation.

It is possible to estimate when corn has been heavily blended with severely damaged corn as opposed to gradually going out of condition; the damaged kernels will not look like (size, shape, color, etc.) the overall average of the sample. Sensitive users such as poultry or corn processing (wet or dry) will be more affected by high damage inclusions. Expect larger feed users to be more stringent in auditing the quality of the corn going into the mill.

Going Forward to 2009

There will be significant carryover of corn into 2009. This will present challenges because 2008 corn will be very hard to keep into next year. Rotation of stock will be critical. Never mix crop years in a storage structure, and especially not this year!

Move the 2008 corn and replace it with (hopefully) better quality 2009 crop. If this cannot be done, use great selectivity about which 2008 corn to keep. Advance planning will be necessary, both in terms of which corn to keep and store, and in terms of which storage structure to use for long term storage.

The common practice of blending wet corn from the field with dry old crop corn will be hard to work with this year; spoilage will start very rapidly. This corn would need to be used immediately, not stored. Expect the export market to be on the lookout for moisture blends because it has storage-in-transit issues.

Complete cleanout and sanitation of storage structures will be important this fall. Remove all residual corn, fines, moldy grain, and be sure that aeration ducts are clear with the perforations all open. Sometimes dry corn is carried over flat bottomed bins; this practice is not advisable this year. Insects feed on molds; there are several insecticides that can be used on empty bins as a pretreatment. Go into the harvest season with all the equipment clean and functional.

Recognize that the corn quality problems with 2008 crop were large enough that they will not go away immediately at the 2009 harvest. It will take a year or more to move all the 2008 corn within the market limits for No. 2 Yellow Corn. We need a good quality crop in 2009, and close attention to good storage practices to preserve it.

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