

9-11-2010

The 2009 Crop Won't Quit – and Here Comes 2010

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Recommended Citation

Hurburgh, Charles R. and Robertson, Alison E., "The 2009 Crop Won't Quit – and Here Comes 2010" (2010). *Integrated Crop Management News*. 376.
<http://lib.dr.iastate.edu/cropnews/376>

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The 2009 Crop Won't Quit – and Here Comes 2010

Abstract

Most of us would probably rather forget the 2009 crop, at least as far as storage and quality goes. Unfortunately, as we thought it might, this crop just kept on giving – headaches. The wet, incompletely developed and low test weight conditions led to about 50 percent shortening of the normal shelf life, at any moisture and temperature condition. Storage norms were covered in an ICM News article last fall, [2009 Corn Quality Issues – Storage Management](#).

Keywords

Agricultural and Biosystems Engineering, Plant Pathology

Disciplines

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Integrated Crop Management NEWS



The 2009 Crop Won't Quit – and Here Comes 2010

By Charles R. Hurburgh, Jr., Department of Agricultural and Biosystems Engineering and Alston Robertson, Department of Plant Pathology

Most of us would probably rather forget the 2009 crop, at least as far as storage and quality goes. Unfortunately, as we thought it might, this crop just kept on giving – headaches. The wet, incompletely developed and low test weight conditions led to about 50 percent shortening of the normal shelf life, at any moisture and temperature condition. Storage norms were covered in an ICM News article last fall, [2009 Corn Quality Issues – Storage Management](#).

My expectation was that in July or August, the shelf life would run out, and in-storage molding would increase, even in dry corn. This happened. The common consequence was “blue-eye” mold appearing almost overnight in many cases, in late July and early August. Once the shelf life is gone, and the grain is warm and in equilibrium with about 65 percent relative humidity or greater, blue eye can become a problem. At 80 F, this is about 13.5 percent moisture—even dry corn can spoil in these conditions.

Blue eye is predominantly caused by the fungi, *Penicillium oxalicum* and *Aspergillus glaucus*, neither of which is aggressive enough to generate heating nor do they produce mycotoxins. There are however other species of *Penicillium* that can cause blue-eye and may produce mycotoxins. All moldy grain should be tested for mycotoxins.

The situation was complicated by the warm, high humidity period in July and August. Few days had humidity below 65 percent which meant that aeration only controlled heating. Fungi active at ambient conditions grew steadily.

Blue eye is not extremely destructive of feed value; the germs are most affected, which is where the oil but not the starch is located. However, it will grade as damage, and it is very hard to grade accurately because kernels often need to be cut to determine interior infection. Its effect on ethanol processing is not known, although most molds reduce the effectiveness of fermentation enzymes. At this time, the grain market has so much damaged corn in channels that few buyers are able to absorb more until the new crop arrives.

Recommendations for flood damaged corn fields

There was some flooding of corn fields in August 2010. These fields are now drying out. If water was over the ear, the cobs are mushy and rotten. Blue-green ear rot is common on warm wet cobs, which will move to the grain, and raises the potential for toxins in this corn. My recommendation is to work with crop insurance to avoid taking this corn to market. Flood waters are notoriously impure in addition to the mold issues. If harvested, clean well to remove cob parts and store separately until toxin testing can be done. Feed only under the direction of a veterinarian, depending on the test data.

Pre-harvest storage preparations

We are all hoping for a good 2010 crop. Prepare by completely cleaning storage bins, under floors, around air ducts and in all corners of grain handling systems. Likewise clean out dryers very thoroughly. Dispose of all the fines and residual grain; insects liked 2009 corn as well as mold.

The 2010 crop should be much drier and therefore be less at risk for mold development. We are average to above average in heat units, but much above average in rainfall this year. The downside of all the rain is that crops contended with warm high humidity days and nights, which probably expended energy and reduced grain fill in corn. There was also loss of nitrogen, which created light green colors in August. This will show up in test weight; we are expecting average test weights (54-55 lb/bu) but not very high test weights this year. The last week of warm weather increased maturation, which also may limit kernel fill. The best opportunities to absorb some of the carryover of problem grain may be early in the marketing year.

Soybean outlook

Soybeans look to have good quality, except for the irregular seed size created by SDS. There will be some increased foreign material issues stemming from less than timely applications of herbicide in wet fields.

The key storage management items

- Harvest will start in warm weather. Warm grain from the field or dryer will take an extra cooling cycle. Do not let hot grain sit without air and cooling. Piles, flat storages and other situations with less airflow will be vulnerable.
- Crop years should never be mixed prior to storage. Especially this year, the old crop will provide a fungal load for the less stable new crop and problems occur.
- Consign grain to storage structures carefully; there will not be any leeway for more condition problems. Use test weight as a gauge of storability and market accordingly.
- Combines will break more corn and create more fines at low moistures (below 17 percent). An extra cleaning on farm, and removal of bin centers immediately after filling will help this problem. 2010 corn will not break as much in subsequent handling as the low test weight 2009 corn did.

The 2009 crop was the most difficult in memory to handle, all the way through the season. The 2010 crop promises to be better but perhaps will not be of outstanding quality. This means paying attention to grain in storage, planning ahead and moving questionable grain quickly so as not to add to the carryover problems. We will update as the harvest progresses.

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This article was published originally on 9/11/2010. The information contained within the article may or may not be up to date depending on when you are accessing the information.

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