

Extension Crop Update

This newsletter, and previous issues from recent years, can be found on-line at:

<http://www.extension.iastate.edu/plymouth/info/cropupdate.htm>

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Counties in NW Iowa.*

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Corn Ear Mold Questions — During the last few days I have had several calls about molds found in corn. Most seem to be dark greenish-black in color; some might be a little more green. From what I have seen these appear to be either Cladosporium or Trichoderma ear rot. There are no reports of economic losses due to either Cladosporium or Trichoderma ear rot. Furthermore, no associated mycotoxin issues have been reported. If the percentage of damaged kernels is 5 percent or less, the grain is still acceptable as No. 2 corn. However, since corn ears can be infected with more than one ear rot simultaneously, mycotoxin contamination of grain should not be ruled out. For more information about and pictures of these two ear rots, check out this very recent ISU ICM News article on the topic: <http://www.extension.iastate.edu/CropNews/2009/1030robertsonmunkvold.htm>. If you want to submit ears to the ISU Plant and Insect Diagnostic Clinic for analysis, information for submission can be found here: <http://www.plantpath.iastate.edu/pdc/>. Samples to assess feed for mycotoxins, should be submitted to the ISU Vet Diagnostic lab through your local veterinarian.

Grain Drying Notes: For many grain managers, it may have been several years since they dried corn, let alone beans. Here are some general reminders to jog the memory and hopefully avoid some costly mistakes this fall, offered by Shawn Shouse, ISU Ag Engineer from SW Iowa:

Natural air bin drying: Equilibrium moisture content tables will tell you the moisture content to which grain will dry based on the temperature and humidity of the drying air.

<http://www.ag.ndsu.nodak.edu/abeng/pdf/GrainEquilibriumMoistureContentCharts.pdf>

For successful natural air drying in Iowa, plan for at least 1.25 cubic feet per minute of airflow through the grain. Fan horsepower required to get 1.25 cfm per bushel depends on grain depth. For grain up to 15 feet deep, 1 horsepower of fan per 1000 bushels of grain will usually meet the goal. For grain 16 to 20 feet deep, 1.3 hp per 1000 bushels will be needed. For corn above 20 percent moisture, Charlie Hurburgh recommends 2 hp per 1000 bushels. To get precise estimates of airflow for your bin/fan combination, see the fans computer program at:

http://www.bbe.umn.edu/Post-Harvest_Handling_of_Crops.

Grain drying time for 10 points of moisture removal at 15 to 20 feet deep will be 3 to 6 weeks. For more precise drying time estimates, check out this article for corn

<http://cropwatch.unl.edu/web/cropwatch/archive?articleID=1990301> - or this article for beans: <http://cropwatch.unl.edu/web/cropwatch/archive?articleID=1971361>.

Natural air bin drying summary:

1.25 cfm per bushel minimum airflow

15 feet maximum grain depth with 1 fan hp per 1000 bushels

20 feet maximum grain depth with 1.3 fan hp per 1000 bushels

Typically only one bin batch can be dried per season.

Heated air bin drying: Heated air bin drying for soybeans is best done with no more than 20 degrees of added heat. Heated air bin drying for corn is best done with air temperatures of 120 to 180 degrees. Lower temperatures produce slow dry-

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ing and loss of allowable storage time for the corn. Keep in mind that heated air bin drying must be done either in shallow layers or with stirring equipment. Airflow rates of 5 to 10 cfm per bushel are required.

Non-stirred heated air bin drying: To avoid severely over-drying the grain near the floor, shallow layers are restricted to 2.5 to 4 feet deep. High airflow rates of 5 to 10 cfm per bushel are required to get the top grain dried before the bottom grain is severely over-dried. Maximum moisture difference between the wettest grain and driest grain should be no more than 5 points. Fan horsepower needed to create 5 cfm per bushel at 3-4 feet deep is about one horsepower per 1000 bushels. Drying rates for 10 points of moisture removal from corn are about 5 bushels per hour per 1000 cfm at 120 degrees, and 8 bushels per hour per 1000 cfm at 160 degrees. At 2.5 to 4 feet deep, you may be able to dry 1 to 2 batches per day.

Stirred heated air bin drying: Stirring devices remove dry grain from the bin floor and blend it back into the wet grain above, allowing drying of deeper grain layers without over-drying. Drying batches work best at 6 to 9 feet deep. Deeper grain greatly increases fan horsepower requirement and reduces drying rate. Fan horsepower needed to create 5 cfm per bushel with 8 feet grain depth is about 4 hp per 1000 bushels. Drying rates are similar to non-stirred heated air bin drying. More precise bin/fan airflow calculation is available with the computer program mentioned in the natural air drying section. At 6 to 9 feet deep, expect 2 to 3 days drying time per batch.

Heated air drying summary:

Beans – 20 degrees maximum added heat.

Corn – 120 to 180 degrees allowable temperature range

Non-stirred drying limited to 4 feet maximum depth with 1 fan hp per 1000 bushels

Stirred drying limited to 9 feet maximum depth with 4 fan hp per 1000 bushels

5 points maximum difference between driest and wettest kernels.

For quick bin capacity estimates, bin diameter squared times 0.63 equals bushels per foot of depth.

Charlie Hurburgh has written some good ICM News articles recently. Review them at:

<http://www.extension.iastate.edu/CropNews/2009/1030hurburgh.htm>

<http://www.extension.iastate.edu/CropNews/2009/1019hurburgh.htm>

<http://www.extension.iastate.edu/CropNews/2009/1015hurburghelmore02.htm>.

Registration Open for ICM Conference in Ames, Dec 2 & 3 –Attendees can obtain up to 14 Certified Crop Adviser credits as well as Commercial Pesticide Applicator recertification in categories 1A (weeds), 1B (insects), 1C (crop diseases), 4 (seed treatment) and 10 (research and demonstration.) To register online for this event or for more information, visit the ISU Agribusiness Education Program (AEP) website at www.aep.iastate.edu.

Storm Lake Ag Chem Dealer Update set for Dec. 9: Updates on weed and insect management, soil fertility and crop diseases, with commercial pesticide applicator continuing ed for categories 1A,B,C and 10 are offered at this location. For details and to register, go to the AEP site listed above, and look under the Ag Chem Dealer tab.

Soil & Water CCA Credits Available Dec. 22: A half-day soil and water workshop will be offered in Cherokee during the afternoon of December 22 which can provide 3 CCA credits for certified crop advisors. Put it on your calendar now, more details will be shared in this newsletter in the future.

"Thanks for Subscribing!"