Regulatory Services News

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Wheat Seed Quality

Each year as wheat samples are received in the laboratory, we watch closely for dormancy and fusarium head blight (FHB or head scab) as well as other diseases that can impact seed quality. Dormancy and disease infection of seed crops varies yearly due to environmental conditions during development and disease pressure. Low quality seed lots may require significant conditioning (cleanout) and/or seed fungicide treatment to gain acceptable germination for sale and planting. An additional problem with infected grain is presence of mycotoxins (especially deoxynivalenol or DON), which can prohibit use of diseased grain as a feed source. Information about common wheat seed diseases follows this article.

Wheat seed quality has been extremely high this year: 67% of the samples tested have exceeded 95% germination and only 4% of all the wheat tested has germinated at less than 80%. Few samples this season have been infected with FHB and the short-lived, shallow dormancy present in the newly harvested seed lots was easily overcome with a prechill treatment of five days at 50°F. By planting time, seed will have afterripened and dormancy will not be an issue.

All wheat sold in Kentucky must be labeled based on a laboratory analysis. Our lab offers a complete (purity, noxious

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Wheat Seed Quality

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weed and germination included) test for $11. A germination only test for planting information is $7. About one pound of seed is enough for a complete test and most samples will be completed in less than two weeks (5 day prechill, 7 day germ test).

FHB was at epidemic levels in many wheat fields most recently in 2004. Severe infections cause lower grain yields and reduced test weights. In years when FHB or another fungal pest is suspected, we can analyze a sample and conduct a germination test with fungicide-treated and untreated seed. In our lab we use a Raxil-Thiram product, but other fungicides are labeled for wheat. Comparison with and without treatment allows for management decisions based on effect and cost of treatment. (Prior to applying any seed treatment consult the product label and follow all label directions.) If requesting this paired test, please submit enough seed for two tests (2-3 lbs.) and clearly mark the sample for treated and untreated germination tests. Cost of these two tests is $14.00.

Samples can be mailed to the Seed Laboratory, Division of Regulatory Services, 103 Regulatory Services Bldg., Lexington, KY 40546-0275 or can be hand delivered. We are located on campus across from Commonwealth Stadium on the corner of University and Alumni Drives. For more information about submitting seed and available tests, please visit our website (www.rs.uky.edu), call (859-257-2785) or email (Cindy.Finneseth@uky.edu).

C. Finneseth
Seed Testing Program

Fusarium Head Blight

In Kentucky and neighboring states, this disease is caused primarily by *Fusarium graminearum* and is present to some degree every year. The fungi that cause FHB infect seed of wheat as well as barley, rye and triticale. Infection occurs during flowering and full or partial bleached heads may be noticed in fields as the seed crop matures. Infected seeds are often recognized by a shriveled, chalky appearance; seed coats may also have a pink discoloration. Fungicide seed treatments can have a substantial effect on limiting the impact of seed-borne Fusarium on seed germination. A less expensive alternative to seed treatment can be to re-condition the seed lot to remove light, “scabby” seed.

Disease: Fusarium Head Blight (FHB), scab, head blight, blight, head scab

Causal Organism: *Fusarium graminearum* (Also other species)

Key Diagnostic Features: shriveled, chalky kernels (“tombstones”); may have a pink discoloration.

Importance: Decreases grain quality due to mycotoxins (vomitoxin (DON) levels, toxic to humans and animals); Decreases yield in seed production.

Control: Conditioning to remove ‘scabby’ seed; Seed treatment with fungicide more effective than field applied; Control of alternate hosts; Variety selection.

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Wheat Seed Quality

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Disease: Black (Sooty) Head Mold, Black Point (Kernel Smudge)

Causal Organism: *Alternaria*, *Helminthosporium*, and *Fusarium* spp. (also, other organisms)

Key Diagnostic Features: Heads and kernels are blackened, with sooty appearance.

Importance: Mainly saprophytic species, but can cause storage problems. Seed coat discoloration reduces milling quality. Viability can be reduced with severe infections.

Control: Cool/dry storage conditions.

Disease: Smut

Causal Organism: *Ustilago tritici*

Key Diagnostic Features: Diseased heads with teliospores replacing seed. Disintegrates to release spores.

Importance: Yield losses.

Control: Certified seed and/or treated seed.

Disease: Ergot

Causal Organism: *Claviceps purpurea*

Key Diagnostic Features: Dark black to purple sclerotia (ergots), mixed with seed. Ergot bodies may be whole or broken.

Importance: Decreases grain quality due to ergot alkaloids; Decreases yield in seed production.

Control: Remove ergot bodies during conditioning process; Crop rotation; Control alternate hosts.

For more information about variety selection, wheat diseases and control strategies, contact your local county extension agent. For additional information about FHB and production control methods, refer to the Extension publication *Head Scab of Small Grains in Kentucky*, PPA 38, available online at http://www.ca.uky.edu/agc/pubs/ppa/ppa38/ppa38.pdf. Also check out the Small Grains webpage at: http://www.uky.edu/Ag/GrainCrops/small_grains.htm.

Wheat and Seed Variety Protection

The question as to whether a grower can save their own wheat for planting seems to come around about this time every year. Last year there were concerns about adequate supply because of a poor harvest last spring and increased wheat acres. This years harvest was excellent and wheat seed quality is also excellent. The price per bushel is at extremely high levels but the high price quoted on the Chicago Board of Trade is somewhat misleading because the local basis is also at extremes and inputs of seed, fertilizer, fuel and agricultural chemicals are also at historically high levels. Acres planted to wheat increased last year and it appears that these acres may increase again this year.

Growers are being squeezed by these factors and are looking for ways to cut production cost. Some of these growers will try to achieve this goal by saving and planting their own wheat seed. There are different kinds of protection for seed varieties and legally, some of these varieties cannot be saved for seed. It is important to know the status of a variety for purposes of saving seed.

Varieties that are protected have that status through either a Plant Variety Protection (PVP) certificate or a US patent. Seed varieties that are protected by a US patent **cannot** be saved. Seed varieties that have PVP status can be saved but only in amounts that would plant the grower's own acres. Both the US patent and PVP protection prohibit the grower from selling the seed. The seed labeling affixed to the original container will specify if either of these forms of protection is in place for these varieties.

There are a number of wheat varieties that have no protected status and these can be saved, planted, and sold without being in violation of federal law, state law or US patent law. State law does require that anyone that makes a public offer to sell seed comply with the requirements of state seed laws. A public offer to sell seed is considered to be any form of public advertisement to include a sign on the side of the road that says "seed for sale". Kentucky state law requires a permit or purchase of official tags and the requirement that the seed offered be properly labeled according to that state's seed labeling provisions. The state permit allows the permit holder the right to print their own labels and pay a fee based on the number and weight of the containers sold.

Properly labeling seed requires that a representative sample of the seed lot be submitted for laboratory testing to determine the seed purity, germination and noxious weed content. These components are required to be on the seed label and all containers or seed in bulk must be labeled. There are restrictions on weed seed content, noxious weeds, and low germination as well as how long the seed can be offered for sale from the date of the germination test.

The seed labeling will tell you if the wheat variety you want to save has any form of protection. Please make an informed decision about saving wheat for seeding or marketing purposes. Seed that is saved should be properly cleaned and tested to make sure it is of desired quality for planting and to determine if it can be legally labeled and offered for sale. If you plan to offer seed wheat for sale, please be aware of the liabilities that are inherent with the offer as the information you place on the seed analysis tag is a guarantee to the buyer. If you need more information, please contact my office at 859-257-7363, or by email at dbucking@uky.edu.

D. Buckingham
Seed Regulatory Program

Top Honors Given at the Kentucky State Fair
Dairy Recognition Banquet

Over 180 people attended the 35th Annual Dairy Recognition Banquet held at the Kentucky State Fair on August 15, 2008. Each year Kentucky's top processors and producers are recognized with honors at this event. The 2008 Award Winners are summarized below.

The event was marked with the presentation of Kentucky's first ever **Quality Milk Hauler Award,** sponsored by the Dairy Products Association of Kentucky and the Kentucky Dairy Development Council. The contest was open to haulers who sample and weigh Kentucky dairy producer's milk and was established to recognize Kentucky's milk hauler who best exemplifies quality milk hauling procedures and who serves as an exceptional representative of Kentucky's dairy industry. The 2008 recipient of this prestigious award was Mr. Jimmy Myers of Lebanon Junction, Kentucky.

Jimmy was presented with a plaque, a $250 cash award and a placard for his truck as recognition for his accomplishment. Jimmy is regularly complimented on his professionalism and integrity. His family has been involved with dairy transportation for three generations. He took over the family hauling operation from his father, Mr. William Myers, in 1997. William established the Myers name with a firm, quality reputation in Kentucky's dairy industry and Jimmy has built upon that tradition. Jimmy is readily recognized by the producers and plants on his routes for going above and beyond the call of duty to provide extraordinary service. Congratulations Jimmy!

2008 Kentucky State Fair Top Award Recipients

Award	Winner
Dairy Culinary Award	Jeanne Kemper of Bagdad, KY
Dairy Service Award	Chris Diener of Cincinnati, OH
Dairy Promotion Award	Bill Vaughn of Louisville, KY
Quality Milk Hauler Award	Jimmy Myers of Lebanon Junction, KY
Quality Dairy Producer Award	Coulter Family Farm of Springfield, KY
Proficient Dairy Producer Award	Eddie Gibson of Walton, KY
Top Rolling Herd Average	Eddie Gibson of Walton, KY
Top Rolling Herd Average Non-Holstein	UK Coldstream Farm of Lexington, KY
High Percentage Gold Processor Award	Bluegrass Dairy & Foods of Glasgow, KY
Outstanding Kentucky Exhibitor Processor Award	Louis Trauth Dairy of Newport, KY
Outstanding Overall Exhibitor Processor Award	Purity Dairy of Nashville, TN

Note: To view photos from the banquet, go to www.rs.uky.edu and click on milk.

Ag Lime Recommendations on a Soil Test Report

Ag lime quality in Kentucky is determined by Relative Neutralizing Value which is often referred to as RNV. This value can range from 40 to 105% in Kentucky and is a measure of the amount of effective lime in the ag lime. Prior to July, 2007, soil test reports from the University of Kentucky assumed lime to have 67% RNV. In July of 2007, soil test reports began to include recommendations based on 100% RNV. By knowing the RNV of ag lime, more accurate application rates can be made with RNV values that are much less or greater than 67%.

Making bulk lime recommendations from the 100% effective lime recommendation on a soil test report is similar to making fertilizer recommendations from the recommendation of nitrogen, phosphate and potash that are present on the reports. The concentration of effective lime in the ag lime, which is the RNV, is used to calculate an ag lime rate. For example, if ag lime has 50% RNV and a lime recommendation of 2 tons/acre appears on a soil test report, the amount of ag lime required would be 4 tons/acre. Lime requirements are made simpler if the County Extension Office provides the soil test laboratory with the quarries available in the county. An email is sent out from Frank Sikora requesting information on the quarries available to producers after a new lime report comes out from the Kentucky Department of Agriculture in early spring and early fall. Since we have RNVs from the various quarries in a database, the computer makes calculations automatically and the soil test reports generate lime requirements for each of the different quarries.

A web site has information on past lime analyses and calculators to help make lime rate calculations in addition to cost analysis so economic comparisons can be made. The web site is at soils.rs.uky.edu and then click on publications.

F. Sikora
Soil Testing Program

ASFFPCO Annual Conference

Personnel from Regulatory Services attended the 66th Annual Association of Southern Feed, Fertilizer and Pesticide Control Officials Regulatory conference hosted in New Orleans, Louisiana. A few of the attendees from our Division were also invited to give presentations during the meeting. Wayne Ingram gave a presentation in the Feed and Fertilizer Chemist's Program on "*Comparison of Manual and Automatic Titrametric Analysis of Potash in Fertilizer Using AOACI Method 958.02*". Dr. David Terry gave the presentation *"What You Always Wanted to Know About Fertilizer Investigational Allowances but Did Not Ask*" During the Feed and Fertilizer Inspector's Program, Steve McMurry gave an update on the AAFCO/FDA feed inspector certification program and Warren Pinkston spoke on "*ESAF, From an Inspector's Point of View*". Meagan Davis, Co-Committee Chair of the Feed Program, hosted a closed session for state regulatory officials to discuss current issues effecting the commercial feed industry and the regulatory viewpoint surrounding those issues.

Meagan Davis
Feed Program

Employee Service Awards

It takes well-trained and qualified individuals to conduct the inspectional activities, laboratory testing for the seed, feed, fertilizer, milk and soil programs, and perform the various administrative activities necessary for our successful programs. Each year the College of Agriculture recognizes employees for years of service based on five year increments. Fourteen employees of Regulatory Services were recently recognized. Eight of these employees received special recognition by the Division for more than 20 years of continuous employment. Employees receiving service awards are listed below with their work area and number of years of service.

Employee	Current Work Area	Years of Service
Melton Bryant	Feed/Fertilizer Lab	5
Chip Zimmer	Soil Lab	5
Cindy Finneseth	Seed Testing Program	10
Brad Johnston	Inspection Program	10
Charlie Potter	Soil Lab	10
Tony Benge	IT/Data Processing	15
Cathy Buckingham	Milk Program	20
David Mason	Inspection Program	20
Garland McKee	Feed/Fertilizer Lab	20
Debbie Morgan	Soil Lab (Princeton)	20
Ed Hill	Soil Lab (Princeton)	25
Wayne Ingram	Feed/Fertilizer Lab	25
Dewey Coffey	Inspection Program	35
Charlene Vest	IT/Data Processing	35

30+ Club

Charlene Vest, Danna Reid, Debie Sipe, Ellen Bishop, and Bill Thom, Director (l-r). Ellen was recognized for 35 years of service in 2005, Danna was recognized for 35 years of service in 2006. and Debie was recognized for 30 years of service in 2007.

Dewey Coffey (left), Inspector, Quicksand, Lake Cumberland and Wilderness Trail Areas, and Bill Thom, Director. Dewey was recognized at the summer inspector meeting in July for 35 years of service to the Division. Prior to accepting an inspector's position, Dewey worked in the Seed Germination Laboratory.

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