

SDSU Seednews

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Special points of interest:

- DakotaFest August 18-20, Mitchell SD
- Royalty Increase July 1, 2015
- Ag Horizons December 1-2, Ramkota, Pierre, SD

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Ergot (*Claviceps purpurea*)

Brent Turnispseed, SDSU Seed Lab

Ergot is a recurring problem in grasses and small grains. Environmental conditions greatly influence the degree and severity of ergot formation. This year we had conducive conditions in parts of South Dakota for the infection of HRS and HRW wheat. Rye is usually the most susceptible grain crop to ergot.

The ergot fungus is endemic in the Northern Plains of North America and affects grasses and cereals each year in a region extending roughly from the Kansas area in the south through the prairie provinces of Canada to the north. Prevalence of this disease is dependent upon a number of environmental factors, thus we can have severe outbreaks in certain local areas while overall the problem is minor. The incidence and severity varies from year to year. Severity of the disease development depend upon the availability of spores produced by the fungus which overwinters as sclerotia (see picture above of sclerotia) on the ground and upon the weather conditions prevailing during the flowering of grasses and grains. The sclerotia look similar to rat/mouse droppings.



How to Remove It?

Because ergot bodies usually are larger than wheat kernels, it is possible to separate most of the ergot by means of conventional grain cleaning equipment. When it cannot be cleaned out with conventional seed/graining equipment (air-screen machine, mill, etc.) a gravity table can be used to clean out most of the ergot in seed/grain lots. Ergot bodies have a lower density than wheat, which allows separation using a gravity table.

Seed/Grain Lots

For seed crops it is desirable to clean it out as it is additional inoculum for future outbreaks, and it is considered inert matter in labeling.

For grain purposes you also want to clean it out. The "Official United States Stand-

ards for Grain" considers ergot as foreign material and the more you have, the lower your numerical grade designation. It also has a special grade designation "Ergoty", which is not desirable. For "Ergoty" in all classes and subclasses of wheat the limit is 0.05% ergot by weight. In barley and oats the limit is 0.10% ergot by weight, and in rye the limit is 0.30% by weight

Feeding Ergoty Grain

Feeding ergot infested grain to livestock can cause problems. If the feed contains too much ergot, problems such as reduced weight gain, poor feed consumption, rough hair, sluffing off of tails, ears, and worse can be the result. It is important to know how much ergot (% by weight) is in the grain being feed, and either clean it out or blend it down to safe levels.

Record Sales of Foundation Spring Oats

Jack Ingemansen, FSSD

For the second year in a row, Foundation Oat sales reached a new record high. The high demand from other states made up 30% of the total sales. SDSU's five latest releases were the top sellers with Hayden at 6,378 bushels followed by Shelby427 at 5,675, Goliath at 5,435, Horsepower at 5,603 and Natty at 3,198. Spring Wheat sales were down 17% from 2014, slightly below the five year average.. Focus, SDSU's new release in 2015, was the top variety sold with over half of the total sales at 6,546 bushel. Prevail was second with 2,076 bushels followed by Forefront at 1,249. The early spring, three new variety releases and shortages of some varieties of oats were significant factors in the amount of Foundation Seed sold.

Crop	2015 Sales	2014 Sales	5 Year Average
Spring Wheat	12,063	14,597	12,755
Oats	26,526	16,711	13,021
Conventional Soybeans	1,308	817	769
Other Crops	268	114	415
Totals	40,165	32,239	26,960

Revitalizing the Watertown Crop Show

Neal Foster, SDCIA

In recent years, the number of samples submitted to the Watertown Winter Farm Show Crops Contest have been falling off. In order to try and bring interest back in the contest SDCIA will offer a one thousand dollar prize. Each person who enters samples in the contest will be eligible to win. The person whose name is drawn will then designate the 4-H or FFA chapter that will receive the prize money to use as they see fit for their respective program. The Watertown Winter Farm Show will be held February 9th to the 13th at the Extension Center in Watertown. Samples will need to be turned in to the Codington County Extension Office by noon of February 5th to be eligible for the contest. There will be categories for spring wheat, winter wheat, oats, soybeans and corn. Watch for more details in the next newsletter.

SDCIA Annual Meeting

Neal Foster, SDCIA

The annual meeting of the South Dakota Crop Improvement Association will be held on December 1st, 2015, in conjunction with the Ag Horizons Conference, December 1st and 2nd, 2015 at the Ramkota Convention Center in Pierre SD. Please mark this date on your calendar to attend. At this year's annual meeting, SDCIA will conduct a give-away for a trip (airfare, hotel and meeting registration) to the Commodity Classic to be held March 3rd-5th, 2016 in New Orleans LA. In order to be eligible to win you will need to be a current member and in good standing with SDCIA and be present at the annual meeting.

Ergot poisoning potential exists this summer

Sources: Regg Neiger, DVM PhD, Pathologist, ADRDL;
Russ Daly DVM, Extension Veterinarian, SDSU.

Weather conditions this spring and summer are proving to be just right for a certain kind of poisoning that can affect cattle on pasture.

Cool, damp spring weather followed by the recent heat means that grasses are at increased likelihood of becoming infected with ergot bodies. These bodies appear as dark brown to black growths on top of the seed heads of grasses and grains, which vary from the size of, to several times the size of, the seed kernels. Ergot bodies result from infection of the grain by a fungus called *Claviceps purpurea*, which grows very well in warm weather and infects over 200 species of grasses throughout the country. Examples of plant species infected include wheat, barley, oats, brome grass, and wheatgrass, to name a few. All domestic animals are susceptible to the effects of ergot; however, due to their diets ruminants are usually more commonly affected than others. The ergot bodies contain several toxic chemicals produced by the fungus, called ergot alkaloids. The effects of these chemicals on animals can vary widely and cause both problems systemically overall as well as with the extremities of the animal.

In cattle, a common peripheral effect of these chemicals is a constriction of the small blood vessels to the extremities, like the ears, tail, and feet. Blood flow may be compromised, and in severe cases result in gangrene, or a sloughing off of hooves and the distal parts of ears and tails. Initially, animals may appear painful and lame; this may be initially confused with other causes of lameness on pasture such as foot rot. However on closer examination, the extremities of animals affected with

ergotism are cool to the touch and there is a line of demarcation between normal and non-healthy tissue. Other initial signs of ergotism are also quite non-specific: increased susceptibility to heat, reduced feed intake, rough hair, weight loss, and decreased milk production.

Systemically, cattle may less commonly show signs of nervous system problems. Excitability and tremors may be present, especially when cattle are forced to move. Sheep are susceptible to ergotism as well, but tend to show milder clinical signs than cattle. Swine fed grain contaminated with ergot can show feed refusal and decreased weight gain. Gangrene less of a problem in swine, but occasionally edges of ears and snouts may slough. In sows, ergot is associated with reduced milk production, infertility, and early parturition, resulting in birth of smaller, weaker pigs. Diagnosis of ergotism is usually made on the basis of clinical signs in the animal and presence of large numbers of ergot bodies in grain or on grass in pasture. Chemical analysis of suspected grass, hay, or grain for the ergot alkaloid toxins can be performed if needed.

Treatment of ergotism in affected animals relies on removal of the animals from the offending feed source and providing supportive care to manage pain, stress, and secondary infections of the affected body parts.

Preventing ergotism involves removing animals from infected pasture if possible. Mowing or pasturing grass before it flowers will prevent the formation of ergot bodies on grasses.

Director's Election

Neal Foster SDCIA

Call for nominations: The South Region will be holding an election to fill the seat being vacated by Bryan Jorgensen, who has completed his second term as regional director. Leo Warrington's 1st term as a Regional Director will be completed in December of 2015. Warrington is eligible for a second term as North Region Director. If you are interested in running or know of someone who is, please send me the name.

The counties that comprise the south region are Aurora, Bon Homme, Brule, Buffalo, Charles Mix, Clay, Davison, Douglas, Gregory, Hansen, Hutchinson, Jerauld, Jones, Lincoln, Lyman, Mellette, Minnehaha, Sanborn, Tripp, Todd, Turner, Yankton, and Union.

The North Region is comprised of Beadle, Brookings, Brown, Clark, Codington, Day, Edmunds, Faulk, Grant, Hand, Hyde, Kingsbury, McPherson, Marshall, Lake, McCook, Miner, Moody, Roberts, Potter, Spink, and Sully.

If you or your business reside in any one of these counties and you are a member of SDCIA you are eligible to run. The term of office is 3 years with a maximum of 2 consecutive terms as a regional director. The SDCIA Board serves in an advisory capacity to the Executive Director, who also serves as secretary/treasurer and is appointed annually by the elected members of the board. The board provides a very important function in giving direction to the College of Agriculture, Department of Plant Science, South Dakota Crop Improvement Association and the South Dakota Seed Certification program in order to benefit South Dakota agriculture. The board of directors normally meets 3 times per year, 1) Ag Horizons, 2) February or March and 3) June or July. Formal letters will go out to all members of the South Region this fall.

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Dakota Fest August 18th-20th Mitchell, SD

Come join SDCIA at Dakota Fest August 18th - 20th in Mitchell. Our booth will be located in the SDSU tent and will have a large display featuring SDCIA Seed Certification programs.

Seed Certification, Seed Lab, Foundation Seed and Extension Staff will be on hand to give out information on winter wheat and provide other information as well as answer questions about crop production. South Dakota Crop Performance (CPT) trials of winter wheat test plot results will be available along with a listing of Certified and Registered seed producers for 2015.