

May 17, 2016

Central Oregon Edition – May 17, 2016

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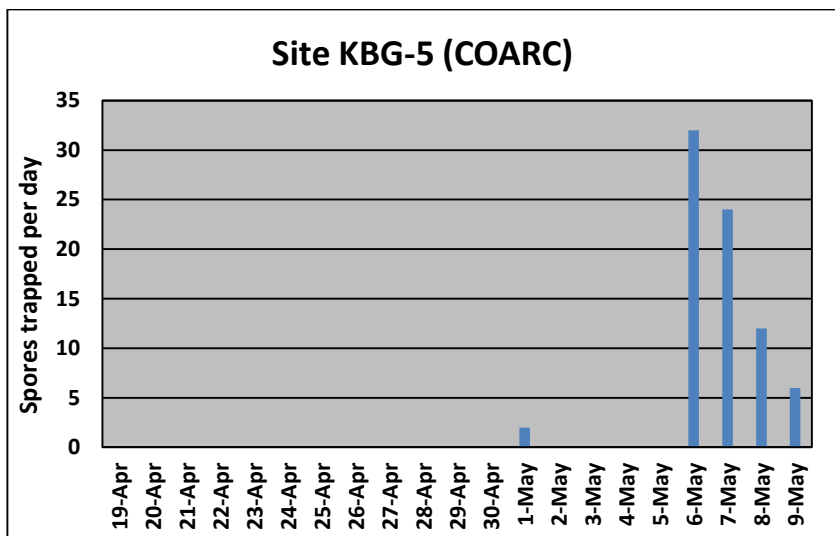
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Welcome to the second issue of the 2016 Ergot Alert Newsletter, brought to you by Oregon State University Extension Service and USDA-ARS, and sponsored by the Washington Turfgrass Seed Commission, the Oregon Seed Council, the Oregon Department of Agriculture Alternatives for Field Burning Research Financial Assistance Program, the Columbia Basin Grass Seed Growers, the Jefferson County Seed Growers Association, and the Union County Grass Seed Growers Association. The goal of this newsletter is to provide timely information about ergot spore production to Kentucky bluegrass and perennial ryegrass seed growers and field personnel in central Oregon, the Columbia Basin, and the Grande Ronde Valley in an effort to aid in decisions related to ergot management during the course of the 2016 growing season.

April 19 thru May 9 Spore Trapping:

A spore trap has been setup in artificially-infested plots located at the Central Oregon Agricultural Research Center (COARC) in Jefferson County, Oregon. Spore trapping was initiated on April 19, 2016 and spore trap drums are changed every Tuesday.

Spores were detected for the first time this season on May 1, 2016 (Fig. 1), with a spike in spore production on May 6. So far a total of 76 spores have been detected at the central Oregon KBG-5 site.



Cumulative Degree Days (Jan 1 thru May 17)*:

Air: 399

Soil (4" depth): 404

In 2014-2015 ergot spores were first detected when cumulative air degree days were between 295 and 332 and cumulative soil degree days were between 176 and 257. Spore production in 2014 and 2015 continued until cumulative air degree days were between 582 and 657 and cumulative soil degree days were between 649 and 692. **This year, the first spore was observed when cumulative air degree days were 255 and cumulative soil degree days were 195.**

*Cumulative growing degree days are calculated using data from the MRSO weather station in the AgriMet Cooperative Agricultural Weather Network (<http://www.usbr.gov/pn/agrimet/>). A lower baseline of 50° F and an upper baseline of 77° F are used in the calculations for air and soil calculations. Cumulative growing degree days were calculated starting January 1.

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Ergot Management Recommendations

- Spore production has started in many grass production areas, so be sure to make the first fungicide application as soon as flowering begins in the cultivars that you are growing. Keep monitoring fields as grass seed crops approach the flowering stage. **Timing your fungicide applications with the first emergence of stigmas or anthers of early emerging flowers is important for ergot management.**
- It is very important to monitor fields that had some level of infection in past (honeydew and/or sclerotia), as well as fields that are in close proximity to grass seed fields that had ergot during the last growing season.
- Wild rye was observed at various stages of anthesis on roadsides and pivot corners in Umatilla County. In past years this host has exhibited both honeydew and sclerotia. If possible, management of early flowering weeds such as wild rye near grass seed fields can help to reduce additional inoculum sources.
- Please consult the PNW Plant Disease Management handbook for fungicide products available for ergot suppression in OR/WA grass seed crops or search the Pesticide Information Center Online. Links to the web resources are listed below:
 - *Pacific Northwest Plant Disease Management Handbook:*
<http://pnwhandbooks.org/plantdisease/grass-seed-ergot>
 - *Washington State Pest Management Resource Service Pesticide Information Center Online Databases:*
<http://cru66.cahe.wsu.edu/LabelTolerance.html>
 - **Application of a pesticide to a crop or site not on the label, or in a manner inconsistent with label directions, is a violation of pesticide law and may subject the applicator to civil penalties.**

Ergot Cultivar Trial

Since the ergot fungus only infects unfertilized flowers, spore production by the fungus must coincide with the flowering of susceptible grass hosts in order for infection to occur. We hypothesize that grass cultivars with shortened and uniform flowering periods or cultivars that flower outside of peak ascospore production have the potential to escape ergot infection. In 2015 a trial was established to evaluate 11 Kentucky bluegrass cultivars for flowering period and ergot susceptibility (Table 1). Crop phenology is being recorded (Fig. 2) and compared to spore trapping results to identify cultivars that may escape or resist ergot infection. Similar trials evaluating perennial ryegrass and Kentucky bluegrass cultivars are being conducted at spore trap site PRG-1 in the Columbia Basin and KBG-3 in the Grande Ronde Valley (Fig. 3).

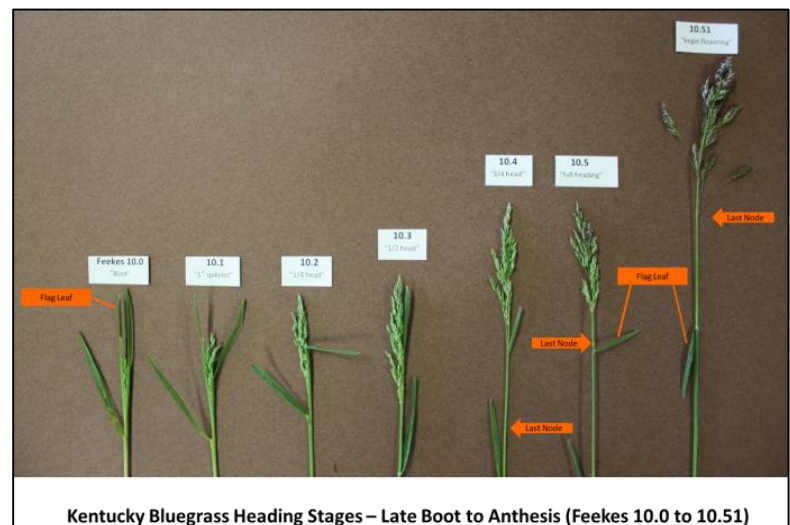


Figure 2. Feekes Scale: 10.0 to 10.51 in Kentucky bluegrass.

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Table 1. Cultivar and growth stage of Kentucky bluegrass cultivars at the KBG-5 ergot spore monitoring site and Kentucky bluegrass cultivar evaluation trial in central Oregon (Jefferson County)

Cultivar	Feekes growth stage ¹
Blue Ghost	10.3 to 10.5 (average 10.4) ~ 5% of tillers at Feekes 10.51
Gateway	10.3 to 10.5 (average 10.4) 0% tillers at Feekes 10.51
Shamrock	10.4 to 10.5 (average 10.5) ~ 10% of tillers at Feekes 10.51
Merit	10.3 to 10.5 (average 10.3) < 5% of tillers at Feekes 10.51
Gladstone	10.3 to 10.5 (average 10.4) < 5% of tillers at Feekes 10.51
PST-K4-7	10.3 to 10.5 (average 10.4) 0% tillers at Feekes 10.51
Fielder	10.4 to 10.5 (average 10.4) ~ 10% of tillers at Feekes 10.51
Midnight II	10.0 to 10.5 (average 10.3) ~ 5% of tillers at Feekes 10.51
Jumpstart	10.4 to 10.5 (average 10.5) ~ 5% of tillers at Feekes 10.51
Right	10.4 to 10.5 (average 10.5) ~ 15% of tillers at Feekes 10.51
DB-1013	10.4 to 10.5 (average 10.5) ~ 10% of tillers at Feekes 10.51

¹ Crop phenology was measured on May 11, 2016 using the Feekes scale, Feekes 10.1 to 10.5= various stages of inflorescence emergence during boot stage (Figure 2), whereby the appearance of stigmas and/or anthers is considered the beginning of flowering (stage 10.51).

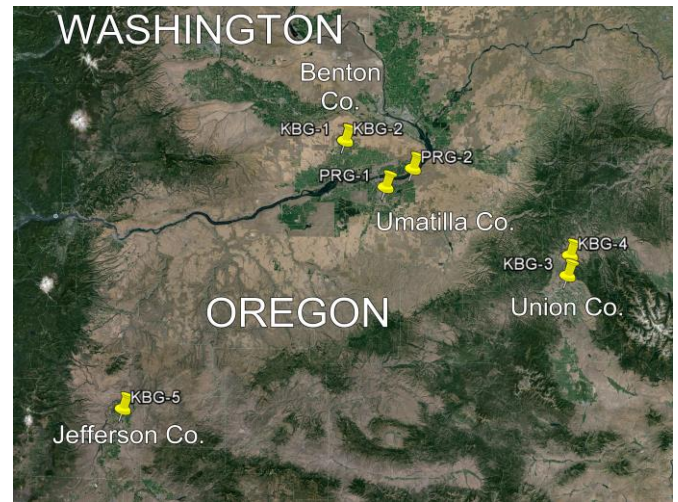


Fig. 3. Location of spore traps in central Oregon (Jefferson Co., OR), the Columbia Basin (Umatilla Co., OR and Benton Co., WA), and the Grande Ronde Valley (Union Co., OR).

Please contact Jeremiah Dung with any questions, comments, or ergot observations:

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