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Ergot Alert Newsletter

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Welcome to the second issue of the 2017 Ergot Alert Newsletter, brought to you by Oregon State University and USDA-ARS, and sponsored by the Washington Turfgrass Seed Commission, the Oregon Seed Council, 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 information about ergot spore production in the Columbia Basin, the Grande Ronde Valley, and Central Oregon in an effort to aid in decisions related to ergot management during the course of the 2017 growing season.

Spore Trap Results

This year we have seven spore traps deployed in three grass seed production areas: the Columbia Basin (Umatilla Co., OR and Benton Co., WA), the Grande Ronde Valley (Union Co., OR), and central Oregon (Jefferson Co., OR) (Fig. 1). We are using a DNA-based method (qPCR) coupled with traditional microscopic methods to detect spores from spore traps. ***To date, spores have been detected in the Hermiston, OR area and the Grande Ronde Valley (Table 1).***

Table 1. Spore trap results from five Kentucky bluegrass (KBG) and two perennial ryegrass (PRG) seed fields.

Location	Traps	Last sample	Spores first detected
Columbia Basin, WA	KBG-1, KBG-1	May 11	No
Grande Ronde Valley, OR	KBG-3, KBG-4	May 9	May 4
Madras, OR	KBG-5	May 12	No
Hermiston, OR	PRG-1, PRG-2	May 11	May 5

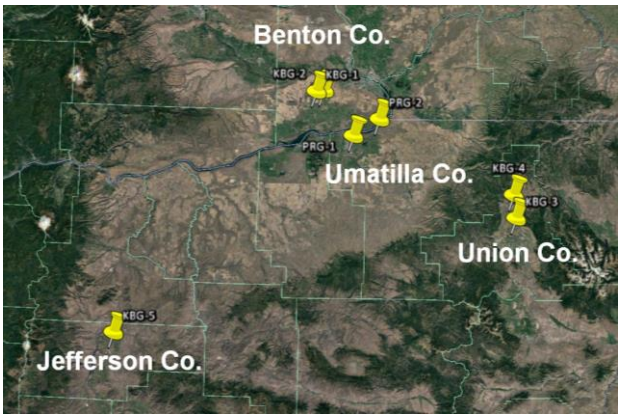

Fig. 1. Location of spore traps in the Columbia Basin (Umatilla Co., OR and Benton Co., WA), the Grande Ronde Valley (Union Co., OR), and central Oregon (Jefferson Co., OR).

Accumulated Degree Days:

Accumulated degree-days as of May 21 were: 397 at Hermiston (HRMO), 365 at Paterson (Wheelhouse), 210 in the Grande Ronde Valley (IMBO), and 232 at Madras (MRSO) (Fig. 2). According to the ergot forecasting model for the Columbia Basin of Oregon, most ascospores are produced when accumulated degree-days are between 414 and 727. Depending on the season, this degree-day period can last anywhere from 2-4 weeks. It is important to remember that this model was developed using data collected from the Columbia Basin, so model performance may vary among the different production regions.

It is recommended that growers scout fields in areas where spores have already been detected. Protective fungicides should be applied at the onset of anthesis to protect unfertilized flowers from infection. Cultivars with prolonged flowering periods may require multiple applications. Please refer to the PNW Plant Disease Management Handbook (https://pnwhandbooks.org/plantdisease) for more information.

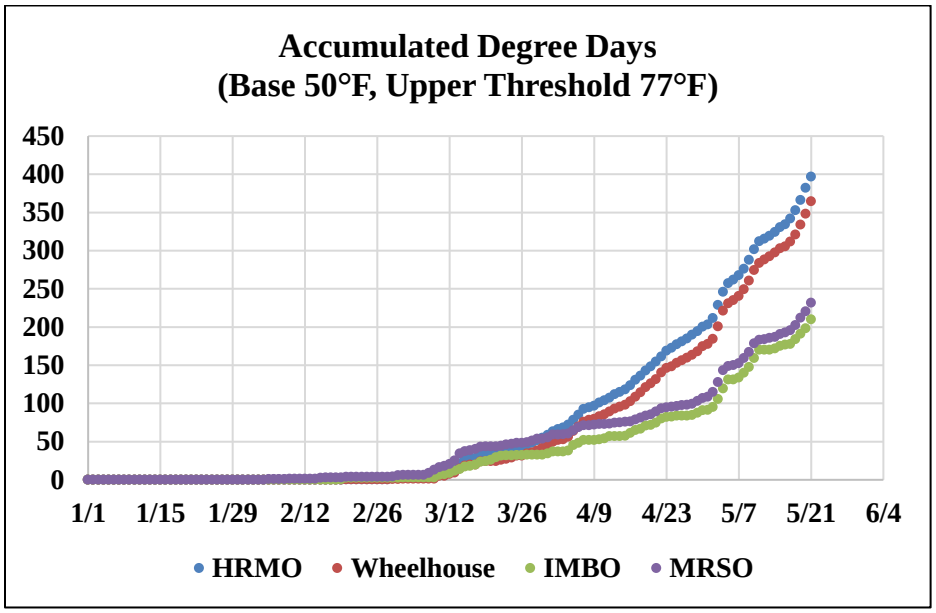

Fig. 2. Accumulated degree-days at Hermiston, OR (HRMO), Paterson, WA (Wheelhouse), the Grande Ronde Valley, OR (IMBO), and Madras, OR (MRSO). Data were obtained from the AgriMet (HRMO, IMBO, and MRSO) or AgWeatherNet (Wheelhouse) weather station networks. The model uses accumulated degree-days (beginning January 1, with a base temperature of 50°F and upper threshold temperature of 77°F) to forecast when the majority of ascospores are likely to be present.

Observations from the Field…

Hermiston, OR (May 18):

- Germinating sclerotia have been observed in artificially infested plots located at HAREC and spores have been detected. Growers with grass varieties nearing anthesis should consider protective fungicide applications.
- Plots of 'Midnight' are at the heading (Feekes scale 10.5) and flowering stages (Feekes scale 10.51) and many Kentucky bluegrass varieties are approaching anthesis (Feekes scale 10-10.1).
- Perennial ryegrass fields are just beginning to form flower spikes (Feekes scale 10-10.1).

Paterson, WA (May 18):

- Kentucky bluegrass fields are less further along than those across the Columbia River. For instance, a field of 'Midnight' was at Feekes scale 10-10.1.

Madras, OR (May 21):

- Kentucky bluegrass varieties at COARC are at Feekes scale 10.1-10.5.

La Grande, OR:

- KBG-3 Variety Trial: early maturing varieties "Jumpstart" and "Thermal Blue" were nearly completely headed out (Feekes 10.4 to 10.5). All other varieties were in various stages of early head emergence (Feekes 10.1 to 10.3).
- KBG-4 "Gaelic" KBG monitoring site: Feekes 10.2 to 10.4 with a few heads fully emerged (10.5)

Do you have questions, comments or observations about ergot that you would like to share? If so, we welcome your thoughts and insights! Please contact:

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