Ergot Alert Newsletter

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Welcome to the third 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, central Oregon and the Grande Ronde Valley (Table 1).*** Spore counts are lower at most sites compared to last year.

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

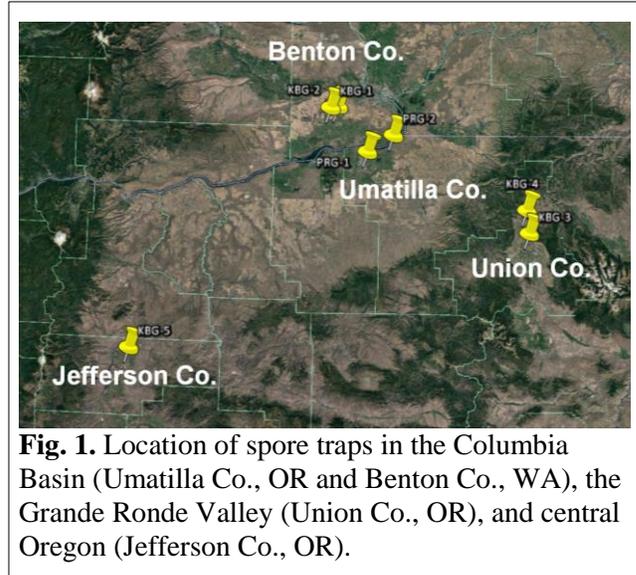| Location	Spore traps	Spores first detected	Total spores (season)
Columbia Basin, WA	KBG-1, KBG-2	None detected	0
Grande Ronde Valley, NE OR	KBG-3, KBG-4	May 4 May 7	16 6
Madras, OR	KBG-5	May 15	15
Hermiston, OR	PRG-1, PRG-2	May 5	108

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 28 were: 494 at Hermiston (HRMO), 466 at Paterson (Wheelhouse), 279 in the Grande Ronde Valley (IMBO), and 312 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. Cool, wet weather can prolong this period and extend anthesis and spore production. 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 as grass seed crops approach anthesis. 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 for more information (https://pnwhandbooks.org/plantdisease).

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.

**Accumulated Degree Days
(Base 50°F, Upper Threshold 77°F)**

● HRMO ● Wheelhouse ● IMBO ● MRSO
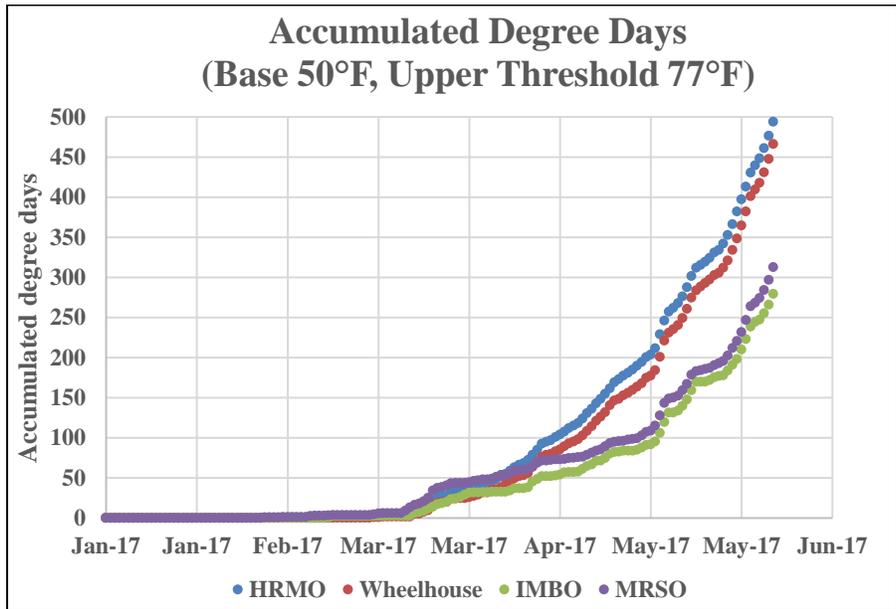
Observations from the Field…

Hermiston, OR:

- Kentucky bluegrass and perennial ryegrass varieties are at various stages of anthesis, ranging from 10.1-10.51.
- The forecasting model reached 414 accumulated degree-days on May 23. Although spore counts are relatively low compared to previous seasons, protective fungicides are still recommended for early flowering varieties.

Paterson, WA:

- Kentucky bluegrass fields are at various stages of head emergence (Feekes scale 10.1-10.5) depending on the variety.
- The forecasting model reached 414 accumulated degree-days on May 25, but no spores have been detected.

Madras, OR:

- Spores have been detected in artificially-infested plots at COARC. Early flowering Kentucky bluegrass varieties are entering anthesis (Feekes scale 10.51). Other varieties are Feekes scale 10.4-10.5. Growers should scout fields and treat early flowering varieties as they enter anthesis.

Grande Ronde Valley, NE OR:

- KBG-3 Variety Trial: "Jumpstart", "Thermal Blue" and "Wildhorse" varieties were in early stages of anthesis (Feekes 10.51). "Abbey", "Baron", "Endurance", "Midnight II", and "Prosperity" varieties were just starting anthesis with growth stages ranging from head emergence to anthesis (Feekes 10.2 to 10.51).
- KBG-4 "Gaelic" KBG monitoring site: Fully headed out and just starting anthesis (Feekes 10.5 to 10.51).

Do you have questions, comments or observations about ergot that you would like to share? If so, we welcome your thoughts and insights! To subscribe or unsubscribe from the Ergot Alert Newsletter please contact:

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