

## **Interacting agricultural pests. Joint management of *Bromus tectorum* and Fusarium crown rot in small grain systems**

MS / PhD Opportunity in Agroecology at Montana State University. Bozeman, MT.

**Project summary.** *Bromus tectorum* (cheatgrass, downy brome) and Fusarium crown rot, a fungus causing root crown rot, represent an interacting pest complex threatening the sustainability of small grain crops. Yet, no knowledge exists on the extent of these interactions and approaches for their joint management. To fill this knowledge gap project, this systems-oriented project will evaluate the impact of resource availability and disease status on (1) crop-weed competitive interactions, (2) the population dynamic of *B. tectorum*, and (3) rhizosphere microbial community composition. Results will be used to develop and deliver education and extension material on the integrated management of *B. tectorum* and Fusarium crown rot in small grain systems. The project is funded by the National Institute of Food Agriculture (NIFA), Crop Protection and Pest Management (CPPM) program.

We are searching for an enthusiastic and hands-on graduate student to fill the Research Assistant Position. Successful candidates will be members of a vibrant, interdisciplinary team of researchers in agroecology

**Responsibilities.** The Graduate Research Assistant will lead the trials, data analysis, and writing of papers. Among other duties, the Graduate Research Assistant will:

- Assess plant growth and competitive interactions in greenhouse and field settings
- Quantify demographic parameters and model the population dynamics of *B. tectorum*
- Sample rhizosphere and analyze microbial community

**Requirements.** Candidates must hold a BS or MS degree in ecology, agroecology, or environmental sciences with experience in conducting research, and an ability to work in a collaborative environment. Candidates must have strong interest in quantitative methods including experimental design, statistics, and modeling. Excellent work ethic and proficiency in English language (written and oral) are required. Apart from excellent academic and team skills, the position requires a valid driving license, the disposition to collaborate in physical work, and working in outdoor conditions. Lifting of up to 30 lbs. may be required.

**Application process.** Please submit

1. Letter of application describing educational background, research experience, career goals, and professional interests,
2. Your CV,
3. Transcripts, and
4. Names, addresses, phone numbers and email addresses of three references.

These are the documents required for the Graduate Research Assistant position only, not for the admission to an MSU graduate program. Only electronic applications are accepted.

Please send your applications to:

Dr. Fabian Menalled.

[menalled@montana.edu](mailto:menalled@montana.edu)

If you have any questions, please reach out to the same email address