

## **Schutter Diagnostic Laboratory, Montana State University: 2011-2012 Accomplishments**

---

**Program and mission:** Montana State University and MSU Extension provide plant pest identification through the Schutter Diagnostic Lab. Services provided by the clinic include identification of: plant diseases, insect, insect damage, weeds and other plants, abiotic problems and mushrooms. In 2011, the Schutter Diagnostic lab carried out 2,143 diagnoses or identifications on 1,837 samples for identification and diagnosis. To date (Sept 18) in 2012, there were 1,972 diagnoses or identifications on 1,536 samples.

### **Quantitative (economic) impacts**

---

- The direct economic impact of recommendations in 2011 was approximately \$1.2 million. In addition, one client claimed a \$5 million economic impact of our services. Respondents overwhelmingly benefited from improved management decisions as a result of their diagnosis (85%). The 2012 survey, in which 50% of respondents were homeowners with <1 acre, rated the service as highly valuable and about 30% indicated the economic value to be over \$100. The direct economic impact of recommendations in 2012 (a dry year) was approximately \$400k on 354k acres.
- Stripe rust samples coming into the diagnostic lab and outreach based on those samples saved wheat growers \$100 million in 2011. In 2012, education of one field agronomist about stripe rust is estimated to have impacted 48k acres with an economic benefit to growers of \$4 million.
- Wheat streak mosaic virus samples and recommendations during a field visit saved growers in Pondera county \$540,000 in crop replacement costs and realized yields in 2011.
- In Meagher county in 2012, a confirmed ID of cutworms allowed a grower to receive a \$179k indemnity check, treat the problem, and replant a crop within 72 hours. In addition, the grower harvested an 80 bu/A barley crop.

### **Qualitative impacts**

---

- In 2012, a spider was identified within hours when a child was bitten and seriously ill.
- In 2011, a group of neighbors planned to make jam from the fruit of white bryony, which resembles grapes, and likely would have been fatal if consumed.
- In 2012, identified a poisonous plant, two-grooved milkvetch, which is poisonous to livestock. The producer plans to control the weed.
- In 2012, noxious weeds included 2 Priority 1A species, 2 priority 2A, 9 priority 2B, and 2 species from county weed lists
- Routinely assist the veterinary community with identification of possible toxic mushrooms eaten by pets and molds in feed grains. We also help growers deciding whether to feed ergot-contaminated grain (toxic to livestock).
- Stemphylium blight and anthracnose of lentil were identified for the first time in Montana in 2011. This and the results of Ascochyta seed testing indicate that disease levels on pulse crops are increasing. Extension and research efforts have been increased.
- Yellow Starthistle confirmations led to actions to eliminate this noxious weed in two counties.
- Data from the 9-state Great Plains wheat virus survey was used to develop a degree day model for wheat viruses to predict disease outbreaks.

### **Educational activities**

---

- The Ag Alert system and the Urban IPM Newsletter inform 816 growers and ag/landscape professionals about identification and management pests of concern.
- Agroemergency preparedness education efforts reached 4,500 growers directly and 170,000 indirectly through television appearances on Montana Ag Live (Montana PBS).
- Certified an additional 10 Urban IPM practitioners (32 Certified Urban IPM Practitioners total) and we are in the process of promoting their businesses via press releases and an updated website ([www.urbanipm.org](http://www.urbanipm.org)). 70% of certified practitioners feel the certification program has led to a decrease in the amount of chemicals they purchase; 90% report an increase in customers choosing Integrated Pest Management (IPM)-based practices.
- Diagnosticians reached an audience of more than 54,000 with diagnostic and IPM-related presentations and publications in 2011.
- We coordinated a webinar series for the Great Plains Diagnostic Network on topics such as Spotted wing Drosophila, Zebra chip, methods for teaching adult learners, and bed bugs ([www.gpdn.org](http://www.gpdn.org)).
- Increased accurate identifications of pests and provided research-based and site-appropriate recommendations for the management of pests.
- Increased the authoritative of county agents with their clients by providing accurate identifications and management recommendations.
- Trained two graduate student interns and one undergraduate student.