

**Schutter Diagnostic Lab
2011 Plant Disease and Insect ID Summary**

Diagnostic Staff:

Linnea Skoglund, Plant Disease Diagnostician
 Duke Pauli, Graduate Student Intern (summer)
 Ruth O'Neill, Insect Diagnostician
 Melissa Graves, Plant Identification Diagnostician for herbicide injury
 Hilary Parkinson, Plant Identification Diagnostician for herbicide injury
 Laurie Neuman, Undergraduate Student Assistant

Plant Pathology Extension Specialists:

Dr. Mary Burrows – All crops except row crops
 Dr. Barry Jacobsen - Row crops (sugar beets, potatoes, dry beans)
 Toby Day – Horticulture

Cooperators:

Dr. Bill Grey – foundation seed and Dr. Nina Zidack – potatoes
 Dr. Cathy Cripps – Mushroom ID

In 2011, we made 2,143 diagnoses or identifications on 1,397 disease and insect samples (Table 1). Over 50% of samples had multiple diagnoses. Sample numbers decreased from 2010 and were comparable to 2009 levels. We received samples from ID (9) and WY (3). The majority of samples were received in June, July and August (Fig. 1).

| | # samples | # diag/IDs |
|---------|-----------|------------|
| Disease | 868 | 1487 |
| Insects | 529 | 656 |
| Total | 1397 | 2143 |

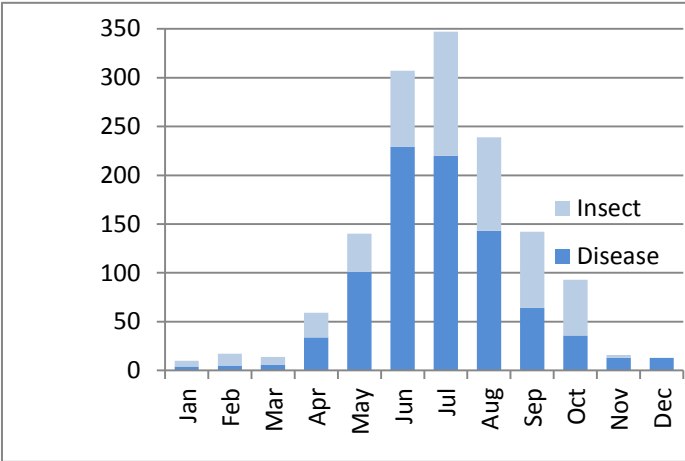


Figure 1. Number of plant disease and insect samples received each month in 2011.

Fifty-nine Montana counties submitted disease or insect samples. Gallatin County submitted 3x as many samples as any other county. Two others, Pondera and Hill submitted more than 100 samples. Twenty counties submitted 10 or fewer samples (Table 2).

Of the samples, 67% were submitted by County Extension Agents or Extension Specialists and 33% were submitted directly to the diagnostic lab by commercial operators or individuals. Noncommercial clients (primarily homeowners) outnumbered commercial clients (producers, consultants, landscape professionals) 62% to 38%. Homeowners were the most common client types: 48% for disease and 80% for insects.

Table 2. Disease and insect ID samples submitted per county in 2011.

| | | | | | | | |
|-----------------|-----|--------------|----|---------------|----|--------------|---|
| Gallatin | 480 | Chouteau | 39 | Powell | 17 | Blaine | 5 |
| Pondera | 138 | Toole | 35 | Big Horn | 15 | Bonner | 5 |
| Hill | 127 | Madison | 33 | Roosevelt | 15 | Silver Bow | 5 |
| Liberty | 97 | Jefferson | 32 | Stillwater | 15 | Phillips | 4 |
| Park | 81 | Sweet Grass | 31 | Broadwater | 14 | Unknown | 4 |
| Lake | 80 | Fergus | 28 | Valley | 13 | Garfield | 3 |
| Lewis and Clark | 76 | Carbon | 27 | Meagher | 12 | Sheridan | 3 |
| Yellowstone | 76 | Prairie | 25 | Custer | 11 | Milwaukee | 2 |
| Ravalli | 64 | Twin Falls | 24 | Sanders | 10 | Petroleum | 2 |
| Missoula | 58 | Dawson | 23 | Lincoln | 9 | Platte | 2 |
| Beaverhead | 55 | Daniels | 22 | Musselshell | 9 | Wibaux | 2 |
| Cascade | 55 | Judith Basin | 22 | Rosebud | 9 | Fremont | 1 |
| Teton | 52 | Fallon | 21 | Carter | 8 | Mineral | 1 |
| Flathead | 50 | McCone | 21 | Wheatland | 8 | Powder River | 1 |
| Glacier | 40 | Richland | 19 | Golden Valley | 6 | | |

Turf and ornamentals made up 48% and 42% of disease and insect samples, respectively (Fig. 2). Agronomic crops (primarily wheat) accounted for 33% of disease samples and only 4% of insect samples. Forty-nine percent of insect samples were for identification of insects, mites and spiders – bugs-in-bottles. The remaining disease and insect samples was distributed among field crops, vegetables, fruit and mushrooms.

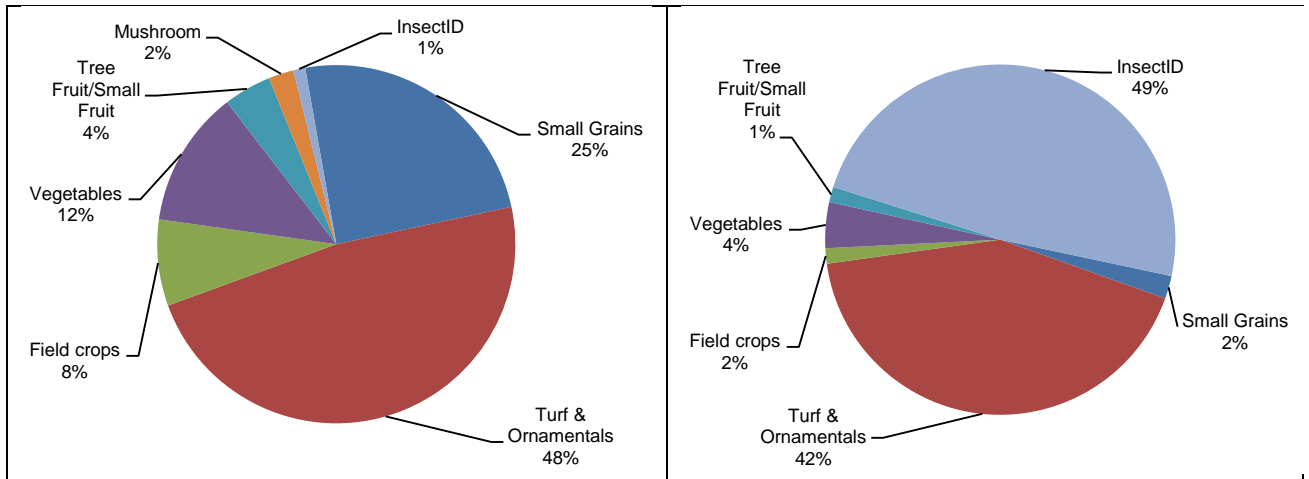


Figure 2. Distribution of disease samples (left) and insect samples (right) by host category.

Spring and early summer were abnormally cool and wet with flooding in many parts of Montana. This delayed planting and gardening in May and led to an increase in foliar diseases. There was a surge of samples in June, in part due to root rots in small grains and

nutrient abnormalities in small grains and tomatoes due to cold, wet soils (Fig. 1). In May/June, stripe rust reached epidemic proportions on winter wheat and moved into the spring wheat crop, causing significant economic losses. Leaf rust was found in northern Montana (Philips Co.) in early July, but did not cause severe losses. A survey via ag alerts indicated that yield losses due to stripe rust cost growers approximately \$48 million in lost yield and \$15 million in fungicide applications for disease control. Timely fungicide applications saved growers approximately \$30 million in yield and not spraying resistant varieties saved growers approximately \$12 million. Root and crown rots were also common, particularly Rhizoctonia, which was found moving up into the crown and mimicking common root rot symptoms. Spot form of net blotch on barley caused significant losses in eastern Montana (Richland Co. and surroundings) according to personnel at EARC (Evans).

Orange wheat blossom midge, wireworm, and wheat stem sawfly continue to be major pests in small grains. In northwestern Montana, orange wheat blossom midge continued to reduce wheat yields and grain quality, especially on spring wheat. Wireworm has reemerged as a pest due to the loss of lindane seed treatment. Wheat stem sawfly is the main focus of the spring and winter wheat breeding programs with three new releases; Judee, Bearpaw and Duclair.

We tested 318 samples of lentil, pea, and chickpea seed for *Ascochyta* in 2011. We processed 185 samples from Jan – May (2010 harvest) and 133 samples from August – Dec (2011 harvest). Thirty percent of the 2010 harvest was positive for *Ascochyta*, averaging 12% infection for positive samples and 3.5% for all samples. Of the 2011 harvest, 20% positive were positive with a 9% average infection. Infection for all samples averaged 1.9%.