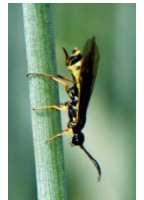


## Wheat Stem Sawfly Extension Focus Group



### The situation

Wheat stem sawfly is a major insect pest of spring wheat, winter wheat and durum in North Dakota. Sawfly larvae feed inside the stem, which impairs grain development and may reduce grain protein. Mature larvae girdle the bases of plants, which results in lodging and further yield loss because it is difficult or impossible to harvest all lodged plants. North Dakota wheat growers lose an estimated \$28-\$70M annually to wheat stem sawfly. Because of its long flight period, insecticides are ineffective at controlling wheat stem sawfly. Other Integrated Pest Management (IPM) tactics are needed.

### Extension response

NDSU Extension Entomology, in collaboration with NDSU REC extension personnel, Montana State University researchers, USDA-ARS researchers, ND and MT wheat commodity groups, and ND and MT wheat growers, held a Focus Group meeting in January 2010 to address current problems and summarize current research on wheat stem sawfly. We used this information to identify extension and research priorities and needs. Research presentations addressed IPM strategies for management of wheat stem sawfly, including use of solid-stemmed cultivars, insecticide efficacy, crop rotation, trap crops, cultivation, and conservation of native biological control agents.

### Impacts

The dynamic interaction between extension, research, commodity groups and growers was essential in summarizing the current knowledge and pest management practices, and in identifying needs and priorities for all concerned stakeholders.

#### Extension Priorities and Needs

- Sawfly post-harvest survey
- Extension factsheets, video and website
- How to identify and scout for sawfly and parasitoid wasps
- More regional meetings with growers
- Increase public awareness through media outlets

#### Research Priorities and Needs

- Sawfly population cycles

- Degree day emergence model
- Continue to evaluate physiological effects of larval feeding on kernel development, test weight, protein
- Cultural control, including trap cropping, crop rotation, cultivation, and soil fertility
- Host plant resistance, including development of high-yielding solid-stemmed cultivars, increased access to solid-stemmed varieties, genetics of chemical non-preference and antibiosis
- Biological control, including parasitoid wasp population and conservation research

### Impacts on Growers

Questions regarding sawfly management practices were asked before the research presentations and group discussions, and again at the end of the meeting.

- 95% of growers are more likely to manage for sawfly
- 0% of growers will use insecticides for sawfly, compare with 8% before the meeting
- 55% of growers will use solid-stemmed varieties, compared with 12% before the meeting
- Growers will continue to use crop rotation as a management strategy
- 5% of growers will use a trap crop, compared with 0% before the meeting
- 100% of growers will scout for sawfly, compared with 56% before the meeting

### Economic Impact

Applications of research through extension will result in:

- Better prediction and identification of sawfly problem areas
- Less economic loss due to wheat stem sawfly
- Improved wheat cultivars with sawfly resistance
- Increased wheat yields
- Savings in pesticide applications that are not effective
- Implementation of the best sawfly management strategies

### Feedback

- Well organized and useful focus group
- Increased awareness of wheat stem sawfly

- Increased knowledge on how to scout and manage wheat stem sawfly

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