

## WHEAT STEM SAWFLY

Sawfly damage occurs annually in North Dakota. This insect primarily affects wheat in the central and western areas of the state. The larvae tunnel in the stem, reducing grain yield by 10% to 25% or higher yield losses when infestations are severe. Additional loss occurs when infested stems lodge, rendering the grain unharvestable. Larvae overwinter in the wheat stubble making infested sites the source of next year's problems.

### Managing Wheat Stem Sawfly:

**Chemical control.** Insecticides have been found to be ineffective in controlling wheat stem sawfly.

**Harvesting.** Swath the most heavily infested fields at 30% to 35% moisture before significant lodging occurs. This requires field surveys to determine infestation levels. Infested stems have a reddish-brown spot below the second or third node. Examine 50 consecutive stems in a drill row from at least two sites (one near the field margin, another near the center). Determine the percent of stems infested at each site. **If more than 15% of stems are infested by sawflies, producers should swath the wheat crop.** Producers should swath sawfly-infested wheat as soon as kernel moisture drops below 40% to save infested stems before they lodge. If producers decide to swath grain, use a high swathing height to conserve the parasitoids that attack wheat stem sawfly. Research from Montana State University has shown that taller residue (at least the lower 1/3 of the plant) is better for conserving the parasitoids. If 10 to 15% of the crop was cut by sawfly during the current field season, a solid-stemmed variety of wheat is recommended for the upcoming field season.

**Fall tillage.** A shallow fall tillage to dislodge stubble and leave it on the soil surface can result in 90% mortality of overwintering larvae. Tillage can be limited to areas where surveys indicated infestations within the field or strip.

**Crop rotation.** Non-host crops are oats, flax, sunflower, legumes, and to a lesser extent barley, rye, durum or winter wheat.

**Resistant wheat varieties.** Resistant wheats have a solid-stem trait which is unsuitable for sawfly development. Please note the 2009 release of the NDAES solid-stem hard red spring wheat release named 'Mott' which has good resistance to wheat stem sawfly and high yield.

Wheat Stem Sawfly Resistant Wheat Variety Descriptions

Variety	Type <sup>1</sup>	Height	Origin <sup>2</sup>	Year Released	Straw Strength	Maturity	Test Weight	Protein	Yield <sup>3</sup>
<b>Older varieties that were released prior to 1990 (may be difficult to find):</b>									
Cutless	HRS	semidwarf	NDAES	1986	med	med early	high	avg	med
Glenman	HRS	semidwarf	MAES	1985	strong	med	avg	low	high
Fortuna	HRS	standard	NDAES & MAES	1966	med	med	high	avg	high
Lew*	HRS	standard	MAES & ARS	1976	med	med	high	low	high
Leader	HRS	standard	AC	1981	med	med	high	high	med
Rambo	HRS	semidwarf	WPB	1986	very strong	med early	high	avg	high
Tioga	HRS	standard	NDAES & ARS	1974	med	med	high	avg	low
<b>Newer varieties that were released after 1990:</b>									
AC Abbey	HRS	standard	AC	1998	med	med	high	high	high
AC Eatonia	HRS	standard	AC	1996	med	med	high	high	high
AC Lilian	HRS	standard	AC	2006	med	med	high	high	high
Agawam	HWS	semidwarf	WPB	2005	strong	med	high	avg	high
Choteau	HRS	semidwarf	MAES	2003	strong	med	avg	avg	high
Ernest	HRS	standard	NDAES	1995	med	med	high	high	high
Explorer*	HWS	semidwarf	MAES	2002	strong	med	high	high	high
Genou	HRW	standard	MAES	2004	strong	med	high	high	high
Mott	HRS	standard	NDAES	2009	strong	med-late	high	high	high
Rampart	HRW	standard	MAES	1996	med	med	high	high	high
Vanguard	HRW	standard	MAES	1995	med	med	avg	high	high

\*indicates semi-solid lines that provide partially resistance.

<sup>1</sup>HRS = Hard Red Spring Wheat, HRW = Hard Red Winter Wheat, HWS = Hard White Spring Wheat..

<sup>2</sup>AC = Agriculture Canada, ARS = Agriculture Research Service (USDA), MAES = Montana Agricultural Experiment Station, NDAES = North Dakota Agricultural Experiment Station, WPB = Western Plant Breeders, Inc.

<sup>3</sup>Yields are relative to sawfly resistant varieties.