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**Common Small Grain Insects**

Cooperative Extension South Dakota State University

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COMMON SMALL GRAIN INSECTS

For safe and effective use of insecticides, always identify the problem correctly.

1. Cereal leaf beetle adult, eggs, larva, and damage
2. Greenbug and damage
3. Thrips (greatly enlarged)
4. Hessian fly larva, and puparium showing location behind lower leaf sheaths
5. Armyworm
6. Grasshopper
7. Chinch bug nymphs and adult, and adult greatly enlarged
8. Wheat stem maggot
9. Wheat stem sawfly
10. Common stalk borer
11. Wireworm and damage to seed

Prepared by Extension Entomologists of the North Central States in cooperation with the Federal Extension Service, U.S. Department of Agriculture
COMMON SMALL GRAIN INSECTS

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1. Cereal Leaf Beetle, Oulema melanopius (Linnaeus). The cereal leaf beetle is not known to occur in South Dakota. This insect primarily a pest of oats but feeds on wheat and other plants in the grass family. In areas of the U.S. where this insect is established, adult beetles hibernate, overwinter, and move to wheat, barley, and wild grasses to feed early in the spring. They move into spring seeded oat fields and continue feeding and complete their egg laying. The slug-like larvae skeletonize leaves and do the bulk of the damage. Larvae pupate in the soil and beetles emerge during June and July. Adult beetles then become inactive and go through summer and winter hibernation periods becoming active in the spring.

2. Greenbug, Schizaphis graminum (Rondani). The greenbug feeds on all the small grains and many wild and cultivated grasses. This insect has in 1968 become a serious pest of sorghum in an area stretching from Texas into South Dakota. During 1967 and 1968, greenbug injury to winter wheat during October and November has been severe with damaging infestations developing in many areas. This aphid sucks sap from the plants and while feeding, injects a toxic saliva which destroys the plant tissue. Injured plants turn yellow and die. Complete loss of the crop often results. The greenbug is the most important aphid that attacks small grain in South Dakota.

3. Thrips, order Thysanoptera. Thrips are considered a minor pest of small grains in South Dakota although there are several species that feed on small grain. Economic injury by thrips to barley does occur in South Dakota. Thrips feed by rasping or scraping the plant leaf surface and then feed on the juices that ooze from the wounds. Discoloration and wilting result. Damage appears more severe during dry seasons.

4. Hessian fly, Mayetiola destructor (Say). Hessian fly has been a serious pest of wheat in South Dakota but the damage by this insect has been reduced by use of resistant wheat varieties. There are at least two generations, and sometimes more, of this insect each year. Wheat plants are attacked in the fall causing stunting and abnormal growth, which in turn increases winter kill. A spring generation attacks the plants in the spring causing broken straws, unfilled heads, and reduced yields. Damage is caused by the larvae.

5. Armyworm, Pseudaletia unipuncta (Haworth). Armyworm populations fluctuate greatly from year to year, with destructive numbers occurring during some growing seasons. Infestation in grain fields often arise from migration from pasture or grassy areas. Infestations often develop in grain fields where heavy growth and lodging are present. All grass crops are attacked and under hunger stress, the worms will feed on many other plants.

6. Grasshopper, family Acrididae. Grasshoppers are a problem on both spring and fall-sown small grains in South Dakota. When abundant on spring wheat, severe injury is frequently caused by grasshoppers eating off the bracts or cutting off the newly formed heads. Fall-sown winter wheat fields are subjected to injury each fall in South Dakota. Severe damage on field borders is quite common most years in winter wheat growing areas where control measures are not taken.

7. Chinch bug Blissus leucopterus (Say). This insect is of little or no economic importance in South Dakota during periods of normal rainfall; it usually requires 2 or 3 years of less than normal precipitation to trigger a build-up. The adult insect overwinters and a spring generation develops in small grain fields. The bugs feed by sucking sap from the plants. As the grain becomes mature the insects migrate to adjacent corn fields, pastures, and fence rows.

8. Wheat Stem Maggot, Meromyza americana Fitch. Although not a major insect pest, wheat stem maggot is present in South Dakota each year. During spring and early summer, the maggots bore in the plant stems and cause the heads to turn white and die. Damage caused by the fall infestation resembles hessian fly injury. The principal host plants among cultivated crops are: wheat, rye, barley, oats, bluegrass, timothy grass, and wild grasses.

9. Wheat Stem Sawfly Cephus cinctus Norton. This native grass-feeding sawfly has become a pest of small grains in the northern wheat belt and northern areas of South Dakota where damage has been observed. Plants attacked are: wheat, spring rye, barley, and others. Wheat infested by the sawfly shows fallen straw resembling injury by hessian fly or jointworm. Examination of infested straw will show the inside filled with fine sawdust-like cuttings, in which a wrinkled-bodied, brown-headed larva 1/3 to 1/2 inch long, pale yellow in color, will be found. The larvae will be nearly legless and have a short pointed projection at the tail end.

10. Common Stalk Borer, Papaipema nebris (Guenne). This insect is a general feeder and will attack almost any plant with a soft stem of sufficient size to shelter its body. Young larvae often are found in small grain plant stems which cause the stems to wilt and die. Injury is usually confined to the outer edge of a field and very seldom are populations of sufficient magnitude to cause economic damage.

11. Wireworms, Family Elateridae. Wireworms are especially destructive to corn and grasses, all the small grains, and nearly all cultivated crops are subject to attack. So far as is known, all the wheat wireworms have a 4-year or longer life cycle. These insects attack the seeds—eat out the germ and hollow out the seed completely. The worms also bore into underground portions of the stems causing the plants to whither and die. The worms continue to feed on the underground roots of surviving plants. Injury from this insect can be severe.

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