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An identification guide to common Rangeland Insect Pests of South Dakota

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Scouting for Insects

The insects listed in this guide can be pests of rangeland in South Dakota. The best approach for preventing these pests from reaching damaging populations involves routine scouting.

Most insects can be scouted for by using visual observations. This includes checking plants on the surface for insect presence or signs of damage (i.e., defoliation). Aboveground pests can also be scouted for by using a sweep net.

How to scout with a sweep net:

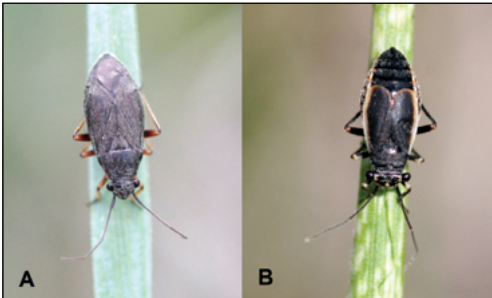
- Use a 15" diameter sweep net with a sturdy handle
- When recommendations call for a number of sweeps, they are referring to pendulum sweeps. One pendulum sweep consists of swinging the net from one side of the body to the other and back again.
- To get accurate population estimates from sweep nets, it is important to walk at a steady pace and swing the net hard enough to dislodge any insects that may be present on the plants. However, the force used to swing the net should not be so much that plants are also destroyed in the process.

To scout for belowground pests, dig into the soil using a shovel or hand trowel. Sift through the soil with your hands to reveal any insects that may be present. When scouting for white grubs, the most effective method is to dig around the fringe of a dead grass patch. This area is the leading edge of the infestation and will indicate whether the infestation is still occurring.



Black Grass Bugs

Pest status: occasional, early season



- Two common species found in South Dakota – *Irbisia brachycera* (A) and *Labops hesperius* (B)
- Both approximately $\frac{1}{4}$ inch long
- Black body color; *L. hesperius* with tan margins on sides
- Active from April/May until late June
- Feeding causes stippling (white spots) on leaves
- Prefer wheatgrasses including crested and intermediate
- Injury is magnified during drought years
- No established economic threshold
- Management can be achieved by maintaining plant diversity through grazing practices, hay removal, prescribed burning, or foliar insecticides



Fall Armyworms

Pest status: occasional, late season



- Body color variable: green, brown, or black with 3 narrow yellow or white lines that run the length of their bodies
- Fall armyworms also have a characteristic white inverted “Y” on the front of the head
- Size depends on age, ranging from 1/8 – 1 ½ inches long
- Moths migrate from the southern U.S. and have one generation per year in South Dakota
- Larvae begin feeding in July-August, causing defoliation
- Irrigated hay fields are at highest risk of infestation, especially during drought years
- Economic threshold is 2-3 armyworms per square foot
- Fall armyworms can be managed with foliar insecticides or by hay removal



White Grubs

Pest status: common, early to late season.



- True white grubs are the larvae of May/June beetles
- Grubs are C-shaped with a “zipper” pattern of hairs on the base of the abdomen (top right image)
- Remain underground for 3 years before emerging as adults
- Feed on grass roots, causing brown patches
- Small mammals prey on white grubs, creating large holes and further forage loss
- Currently no insecticides labeled for use against white grubs in pastures and rangeland
- Managed by maintaining a healthy plant community consisting of mostly native grasses and forbs
- Exotic cool season grasses may promote white grub infestations



Grasshoppers

Pest status: common, mid to late season



- Nymphs emerge in late spring and develop into adults by mid-summer
- Both adults and nymphs can cause severe defoliation
- More of an issue during hot, dry years
- Economic threshold is 15-20 nymphs or 8-10 adults per square yard
- Grasshoppers can be managed with insecticide applications, fungal baits (*Nosema locustae*), or using grazing practices that reduce bare ground to limit grasshopper egg laying
- If pastures were severely impacted by grasshoppers, exclude livestock for at least one year to allow time for the vegetation to rest and recover

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