# Beware of the black grass bug

Have you ever noticed wheatgrass on your property turning blotchy yellow or straw colored? If this sounds familiar, you may be dealing with a pesky little insect known as the black grass bug.

Several native species of black grass bug exist in the United States. The species *Labops hesperius* Uhler is considered native to the western grasslands, including Wyoming, and feeds on wheatgrass varieties.

As an adult, the black grass bug is approximately ¼ inch long and mostly black in color, with straw coloration along the outside edge of its wing covers. Immatures are smaller in size with similar coloration.

Black grass bug infestations tend to be most noticeable during wet springs, when the contrast between damaged plants and healthy green grass is more visible. However, infestations can also occur in dry years, potentially causing more severe damage if the grass is unable to recover.

## History

In native rangelands, these bugs have historically been found in relatively low populations and do not appear to affect overall growth of native grasses. Plant damage was first noticed around 1938, when damaged rangeland was reseeded with introduced wheatgrasses after prolonged drought during the Dust Bowl. Large plots of wheatgrass monocultures provided suitable habitat for the black grass bug, leading to a population explosion of *L. hesperius* Uhler.

## Life cycle

The black grass bug has a simple life cycle, producing only one generation per year. The eggs are laid inside dried grass stems for protection over the winter and they hatch in the spring when the grass begins to come out of dormancy.

Newly hatched nymphs feed on the plant at night and drop to the ground during the day or when disturbed. As the nymphs mature, they start feeding during the day with the adults. Nymphs feed and molt five times before becoming mature adults. The process from egg hatch to mature adults is completed within four to five weeks.

Adult bugs are active for roughly five to six weeks. Females begin laying eggs in dry stems approximately two weeks after adult emergence.

All bug activity is dependent on temperature and day length. Black grass bugs can tolerate a wide range of temperatures. In the crown of the grasses they inhabit, the temperature is typically around 45°F, but they have been observed leaving this microclimate to feed in ambient air temperatures as low as 22°F.

Low winter temperatures may reduce the number of overwintering eggs, while snowpack may insulate and protect overwintering eggs.

## Damage

Although black grass bugs feed on a variety of grasses, they prefer introduced wheatgrasses when available, specifically crested wheatgrass and intermediate wheatgrass.

Adult black grass bug (*L. hesperius*). Photo by Aaron Clark, Wheatland, Wyoming.

The nymphs go through five stages, also known as instars. The rate of growth depends on the temperatures of the spring weather. This image shows nymphs in all five instars before reaching maturity. Photo by Aaron Clark, Wheatland, Wyoming.

Black grass bugs cause damage to plants by piercing the leaves and sucking out the sugary substance found within leaf cells. The bugs typically feed on the upper surface of the leaf, beginning at the tip of the leaves and moving toward the leaf base.

Once the insects start feeding, whitish spots appear because the bugs are removing the chlorophyll (what we observe as the green part of healthy plants) from the leaves. This results in heavily infested patches looking frosted, yellowish, or, in extreme cases, straw colored. Heavy infestations may prevent seed formation and reduce palatability and nutrition for livestock.

While research-based economic thresholds have not been determined, infestations ranging from 100 black grass bugs per square foot to more than 1,000 bugs per plant have been observed in the western United States. Damaged plants usually recover with adequate moisture, though drought conditions and severe outbreaks may lead to some plant death.

There is usually a delay of four to seven years between reseeding and black grass bug infestations, indicating infestations are caused by a population explosion of bugs already present, rather than dispersal from neighboring populations.

To help reduce the likelihood of an infestation, consider using a variety of grass species (not just wheatgrass) when remediating a pasture.

## Control options

Before implementing a control strategy, keep in mind that the window for optimal control of black grass bugs is quite short (sometimes only about two weeks).

An integrated approach to strategically control the black grass bug may include cultural controls such as heavy grazing in the early spring or late fall. This practice allows animals to utilize the nutrients found in young plants before those nutrients are removed by the insects. Mowing or controlled burning of dead grass can reduce egg hatch the following year.

Chemical treatments can also be used to control persistent infestations. An insecticidal treatment is most effective during nymphal stages or before adult females lay eggs. When using insecticides, always follow the label instructions.

Note that black grass bugs may not need to be controlled every year, as their populations fluctuate depending on winter temperatures, snowpack, amounts of moisture, spring temperatures, and other events that disrupt their life cycle.

The key to effective control of the black grass bug, as with any pest, is correct identification, awareness of its life cycle, and early detection. For assistance in identifying and managing a black grass bug infestation, contact your local UW Extension office or weed and pest district.

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Adult black grass bug on a blade of grass. Photo by Aaron Clark, Wheatland, Wyoming.