



Black grass bugs

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What You Should Know

- Black grass bugs are native to western North America.
- Monoculture reseeding of rangelands may contribute to outbreaks and severe plant damage.
- Black grass bug control with insecticides is often not practical to apply or economically feasible.
- Timely burning, grazing and haying of infested rangelands can minimize plant damage.

Black grass bugs are common insects in native and introduced range grasses. These insects belong to a large and diverse family of true bugs (Hemiptera: Miridae). Many species of black grass bugs occur in the United States, including 23 *Irbisia* spp. and 8 *Labops* spp. The most common species in Utah include *I. pacifica* and *L. hesperius*. Both types of black grass bugs can have adults with fully formed wings (Fig. 1), but short-winged forms are also naturally occurring (Fig. 2).

Host Plants and Plant Damage

Black grass bugs will feed on a variety of range grasses (e.g. wheatgrass, brome grass, orchardgrass, bluegrass) and field crops (e.g. barely, wheat, rye, oats). Great Basin wildrye and wheatgrasses are preferred if available, especially blue bunch wheatgrass, crested wheatgrass, and intermediate wheatgrass.

Black grass bug nymphs and adults have a beak with a piercing-sucking stylet, and feed on the mesophyll cells of leaf blades. The mesophyll layer consists of the tissue between the upper and lower epidermis of a leaf blade and contains chloroplasts. Typically these bugs feed on the upper leaf surface. Feeding begins at the leaf tip of younger leaves, gradually moving toward the leaf base. White spots and chlorotic blotches often appear near feeding sites. Heavily infested plants will have reduced green-leaf area and appear frosted, yellow or straw colored (Fig. 3). Small black spots of excrement covering plants is also an indication of heavy feeding.



Fig. 1. *Irbisia* species of black grass bug.¹

Black Grass Bug Life Cycle

As with all true bugs, black grass bugs go through simple metamorphosis (egg, nymph, adult). There is one generation of black grass bugs per year, starting with the overwintering egg protected in grass stems. Egg hatch begins in late April and can extend into June for higher elevations (5,900 - 9,200 feet). Young nymphs feed at night and move under plant debris during the day. As the nymphs mature, they will feed during the day as well. Black grass bugs complete adult development 4-5 weeks after egg hatch. Females begin to lay eggs about 2 weeks after adult emergence. Adult black grass bugs are active for 5-6 weeks, with females depositing eggs into dry stems.



Fig. 2. *Labops* species of black grass bug, note the shortened wings.¹

Black Grass Bug, *Irbisia pacifica*

Irbisia pacifica has one of the widest distributions in its genus. This black grass bug is medium to large in size (5.7-8.2 mm long and 2.2-3.2 mm wide). The body is nearly black and covered with silvery scales. The forewings are dark brown or black and relatively slender compared to other true bugs. The antennae are uniformly dark brown and the legs are yellowish brown. The compound eyes are prominent, almost appearing to bulge on the head (Fig. 1).

Black Grass Bug, *Labops hesperius*

Labops hesperius is widespread throughout Canada and the western U.S. This black grass bug is medium in size (3.9-4.2 mm long and 1.6-2.25 mm wide). The body is black and covered with white scales. The forewings are black and slender. The antennae are dark brown and the legs are yellowish brown with pale "kneecaps." As with *I. pacifica*, the compound eyes appear to be bulging on the sides of the head (Fig. 2).

Black Grass Bug Management

Monocultures, particularly introduced wheatgrasses, are more susceptible to black grass bug outbreaks. Because these insects only have one generation per year, an outbreak may occur several years after reseeding. Heavy feeding damage can reduce yield, plant height and seedhead production. Black grass bugs can also effect forage grass quality by reducing crude protein and increasing acid detergent/neutral detergent fibers. Planting grasses that flower early (e.g. beardless wheatgrass, *Agropyron inerme* or streamback wheatgrass, *A. riparium*) or incorporating forage grass polycultures can reduce widespread feeding damage.

Economic treatment thresholds for black grass bugs are not defined; however, populations can exceed 1,000 bugs/ft², likely causing some host plant death. In general, feeding damage is restricted to the field margins adjacent to pasture, range, or desert. Widespread insecticidal control for black grass bugs in forage grasses is usually not practical or economically feasible. Heavy fall/spring grazing and burning dead grass may reduce successful egg hatch in the spring. These cultural control tactics may suppress populations or eliminate the need for chemical control. Persistent black grass bug infestations can be reduced with a well-timed insecticide application targeting nymphs. Products registered in Utah include: acephate, carbaryl, lambda-cyhalothrin, malathion, and methyl parathion.



Fig. 3. Black grass bug feeding damage on leaf.²

¹ Images courtesy of Frank B. Peairs, Colorado State University Extension (www.ipmimages.org).

² Image courtesy of Jack Kelly Clark, University of Davis Statewide IPM Project, 2000 (www.ipm.ucdavis.edu/PMG/r730300911.html).

Precautionary Statement: All pesticides have benefits and risks, however following the label will maximize the benefits and reduce risks. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

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