



Armyworms

The armyworm, *Pseudaletia unipuncta* (Haworth), sometimes called the true armyworm, gets its common name from larvae, which are often seen feeding and moving in large numbers and “marching” through fields like an invading army. Larvae feed on all types of grasses (i.e., brome and prairie) including small grains and corn. In the absence of a preferred host, they feed on a variety of other plants. In Kansas, damage most commonly occurs in the eastern and southern portions of the state during warm, moist periods from spring to early summer.

Mature worms (larvae) reach a length of approximately 1½ inches and lack body hairs. They can vary in color but are typically greenish-black with two yellow to orange stripes running lengthwise down each side and a white line (often faint) down the back (Figure 1). The larval head capsule is brown with a characteristic honeycomb-like pattern. They pupate in the soil and are about ¾ inch long and initially caramel colored, becoming darker brown before moths emerge (Figure 2). Armyworm moths are pale brown to grayish brown with a small white spot on the forewing (Figure 3).



Figure 2. Armyworm pupa.



Figure 3. Armyworm moths at rest (left) and wings spread (right).



Figure 1. Armyworm larva.

Biology

Armyworms are thought to overwinter in Kansas as late instar larvae, pupae, or adults. In spring, overwintered armyworms and those migrating from the southeastern U.S., deposit eggs in lush vegetation including low-lying areas in wheat fields, pastures, field margins, or dense patches of grassy weeds within fields. Depending on temperatures, larvae emerge from eggs in 1-2 weeks and begin feeding (Figure 4). They defoliate plants, feeding mostly at night or on overcast days and spending the day curled up under leaf litter on the soil surface. Larvae pupate just underneath the soil surface. Adults emerge in 1-2 weeks to begin mating and depositing eggs. Armyworm moths may feed on nectar but are not damaging. There may be 2-3 generations per year, but consecutive generations rarely occur in the same field.



Figure 4. Feeding on wheat head.

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Damage

Armyworm larvae prefer to feed on young, succulent leaf tissue. In Kansas, populations are often noticed first in wheat. They may cause economic damage by destroying

the flag leaf before wheat kernels complete the soft dough stage. As wheat matures and leaves dry out, worms often move up to feed on beards and clip plant heads. They may migrate out of maturing fields into adjacent corn, sorghum, brome, or other small grains. Larvae can devastate border rows, consuming all leaf tissue except the midrib as they work their way up from the base of the plant. Armyworms may be a pest again in the fall on seedling wheat.

Damage associated with armyworms may increase as reduced and no-till management practices increase, especially in areas where grassy weeds are not well managed. Brome pastures (Figure 5) and areas seeded with brome to mitigate erosion (i.e., road ditches and grades) are susceptible to defoliation. Brome or any other perennial grass may be vulnerable. Defoliation rarely results in stand loss, but foliage loss may be significant.

Management

When armyworm damage is suspected, scout for larvae on the soil surface and under leaf litter, especially where feeding is apparent. During development, each worm can consume roughly 43 linear inches of leaf tissue, or about three entire wheat plants. Approximately 80% of the damage occurs in the last 3-5 days of larval feeding.

Wheat fields should be scouted before flag leaf emergence. Treatment may be warranted if sampling detects an average of 5-8 larvae per foot. If infestations are not detected until larvae are clipping heads, yield loss has probably already occurred, and treatment options will be limited due to harvest interval restrictions. In corn, treatment should be considered when larvae are present on 30% of V5-V6 plants or 75% of taller corn. Once corn reaches reproductive stages, yield loss is possible if defoliation reaches the ear zone before hard dent. In all situations, treat only while larvae are small, 1¼ inch or less.

Overall plant health should be considered when making treatment decisions. Stressed plants may have lower treatment thresholds. In corn, armyworm populations can be managed by reducing oviposition sites such as weedy grasses at least seven days before plant emergence. Treatment thresholds for brome are not well established for Kansas, but if 25 percent of plants show feeding damage



Figure 5. Brome stripped to the mid-rib by armyworm feeding.

with 3-4 small larvae (≤ 1 inch) per foot, treatment to preserve foliage may be warranted. Plant development may be delayed in affected areas, but stands typically recover. Insecticide seed treatments are not effective against armyworm infestations. Some corn hybrids may provide protection against armyworms, but the need for a transgenic hybrid solely for armyworm resistance is questionable because infestations in corn are sporadic in Kansas.

Natural controls often rapidly reduce larval populations. Several species of tiny wasps parasitize armyworms and may be indicated by large numbers of small, white cocoons near dried larval bodies. Tachinid flies deposit white eggs on armyworm backs. The fly larvae burrow into their bodies, killing armyworm larvae within a few days. Several types of bacteria, viruses, and fungi may infect larvae and provide good control of local populations. If these natural controls are detected in significant numbers, resample in 3-5 days before making management decisions.

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