

**Lifecycle and Damage:**

**One generation per year on the Canadian prairies.**

**Adult:** Adults overwinter within alfalfa crowns or crop debris in or near alfalfa fields. Each adult is a brown snout beetle measuring 6 to 7 mm in length (Fig. 1A). Adults feed on alfalfa (its main host), sweet clover, true clovers, and vetches. In the spring, gravid female weevils lay eggs in clusters of five to 20 eggs per cluster, at first on alfalfa leaves, leaf sheaths, buds, petioles or in the surface litter, and later, in alfalfa stems (Fig. 1B).

**Egg:** Oval eggs are creamy yellow in colour and darken to brown just before hatching (Fig. 1B), normally 4-21 days after egg-laying.

**Larva:** The first instar measures roughly 1 mm long, is light yellow or tan in colour but has a darker head capsule. The second instar is yellowish-brown with the head darkening to black, while the third and fourth instars measure up to 9 mm long, are bright green with a shiny black head capsule, and have a white stripe down the center of their backs (Fig. 1D). The larvae have a characteristic curled 'C' position when feeding and drop to the ground when disturbed. Larval development takes three to four weeks, and peak larval activity occurs from late June to mid-July.

**Pupa:** The late fourth instar larvae spin lacy white cocoons attached to plant crowns or surface debris (Fig. 1E), within which pupation takes place (Fig. 1 F). The pupal period lasts 1-2 weeks then new adults appear (Fig. 1 G).

**New Adult:** Newly eclosed adults are light brown in colour with a darker mid-back stripe (Fig. 1G). By late summer, the beetles become darker brown over their entire backs. Adults feed briefly in the late summer and then seek overwintering sites in and near alfalfa fields.



Figure 1. Alfalfa weevil growth stages including (A) overwintered adult, (B) newly laid (left) and older (right) eggs deposited within plant stem, (C) second, third, and fourth instar larvae, (D) fourth instar larva, (E) pupal cocoon, (F) pupa, and (G) newly emerged summer adult. Photos AAFC-Soroka.

**Damage:**

Both adult and larval alfalfa weevils are foliage feeders. Adults chew round holes in leaves or notches along leaf edges (Fig. 2 A), while newly emerged larvae feed on the stem interior for 3-4 days, then move up the plant to feed on the growing plant tips and opening leaf buds, where they feed, concealed, for some time. Older larvae feed on interveinal

areas of fully expanded leaves (Fig 2 B), and heavy feeding can result in shredded leaves, with only stems and midribs remaining. This feeding on developing buds and skeletonization of leaves can stunt growth, reduce hay biomass and cause flower loss, reducing seed formation (Fig. 2 C-E). Heavy feeding can give an alfalfa field a silvery, frostlike sheen. Alfalfa weevil feeding is especially damaging to seedling alfalfa hay and seed crops.

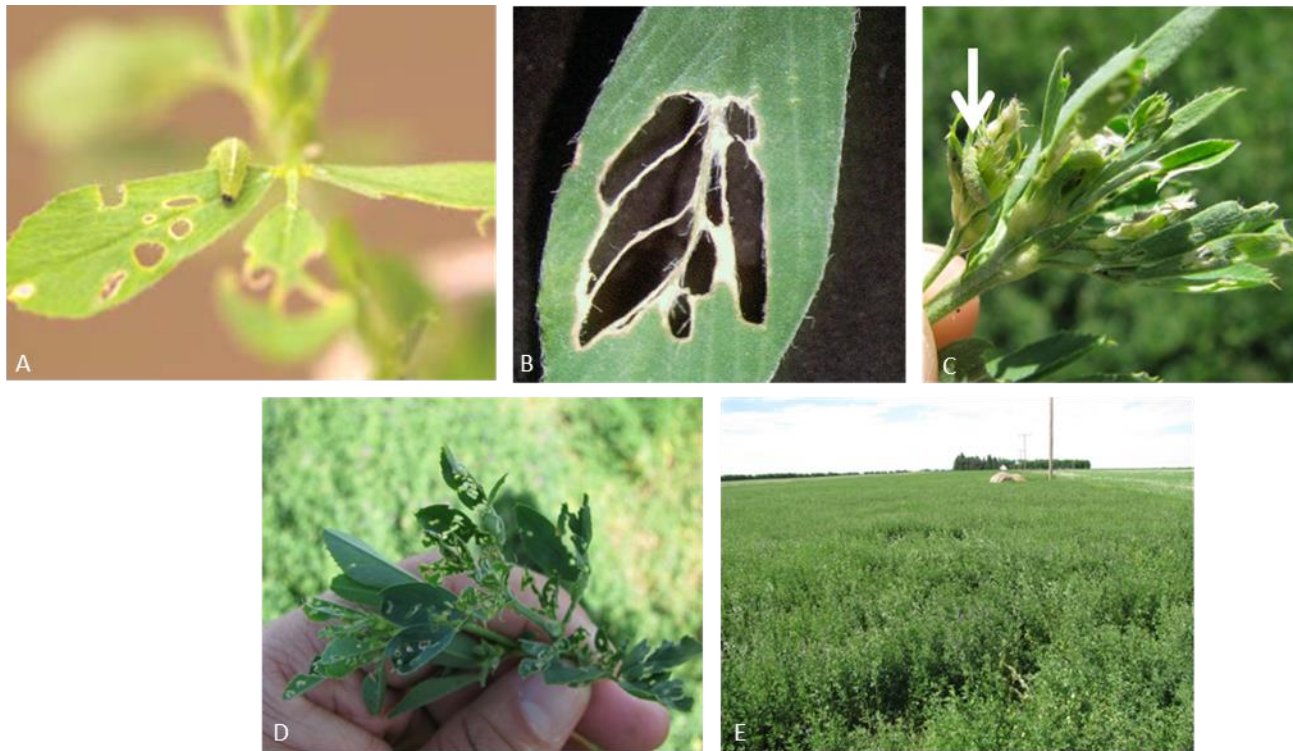


Figure 2. Alfalfa weevil injury to alfalfa including (A,B) leaf notching and skeletonizing, (C-D) injury to stem tips, (E) growth stunted, blooming reduced, plant tips turning white. Photos A, B – AAFC; C-E – B. Biligetu, Saskatchewan Ministry of Agriculture.