

## Leafhoppers<sup>1</sup>

Leafhoppers are small insects (1/8-1/6 inch) that have an elongate body. The adults, which are winged, readily jump and fly from plants when disturbed. Immature stages (nymphs) are wingless but can quite actively crawl on plants.

The leafhoppers associated with hemp are poorly studied at present but adults of about a half dozen species have been collected in sweep net samples. Most regularly found is *Ceratagallia uhleri*, which is one of the few leafhoppers found on hemp that can also reproduce on the plant (Fig 1,2). No visible plant injury has ever been observed by this leafhopper. Another leafhopper, a small light green species tentatively identified in the genus *Empoasca*, also reproduces on the crop. (Fig. 3, 4).

Other leafhoppers are less frequently collected (Fig. 5-7). Sampling of hemp has resulted in recovery of only adult stages of most of these. Most leafhoppers observed on hemp leaves appear to be transient species on the crop, which develop on other off-field plants. These transients may feed briefly on the plants, or may not feed at all on hemp.

Leafhoppers feed on leaves and stems with piercing sucking mouthparts that extract a bit of fluid from the plant. Most feed on fluids moving through the phloem of plants, resulting in insignificant effects on plant growth and no visible symptoms. A few leafhoppers, notably an *Empoasca* species (Fig. 3, 4) extract fluids from cells of the mesophyll, producing a small, light flecking injury (stippling) at the feeding site.

None of the leafhoppers found in hemp in Colorado produce feeding injuries capable of causing any significant damage to hemp. This situation is different in the eastern United States where the potato leafhopper (*Empoasca fabae*) is present. This species produces a unique kind of



**Figures 1, 2.** Adult (top) and nymph (bottom) of *Ceratagallia uhleri*, the most common leafhopper found in hemp in eastern Colorado and a species that can reproduce on the crop. No plant injury has been observed by this insect.



**Figures 3, 4.** A leafhopper, tentatively identified as an *Empoasca* species, is common in sweep net collections of hemp grown in eastern Colorado (top). It is suspected that this leafhopper can produce small white flecking injuries to hemp leaves (bottom).

plant injury known as hopperburn, and is discussed in the Fact Sheet [Potato Leafhopper and Hopperburn Disorder](#).

Potato leafhopper produces hopperburn symptoms on many kinds of plants and can cause serious yield loss to many crops – alfalfa, beans, hops and potato to name some. Hopperburn produced by potato leafhopper has been observed in areas east of Colorado, although the damage to hemp resulting from this injury is unknown.

There is one species of leafhopper, rarely found in surveys of Colorado hemp fields, which can indirectly produce serious damage, the **beet leafhopper**. The damage produced by beet leafhopper is due to its ability to transmit (vector) a virus to hemp, beet curly top virus. The disease produced in hemp, beet curly top, can cause a wide range of growth disorders and can seriously damage plants. This disease regularly occurs in western Colorado, much less commonly in eastern Colorado, and produced a very damaging outbreak during 2019 in parts of western Colorado. This situation is discussed in more detail in the fact sheet [Beet Leafhopper and Beet Curly Top Virus](#).

<sup>1</sup> Hemiptera: Cicadellidae



**Figures 5-7.** Adults (top, middle) and nymph (bottom) of leafhoppers collected on hemp.