

Ecological Significance

Cannabis aphids originated in India and are specialized feeders of plants in the hemp family (*Cannabaceae*). Although relatively new to the United States, cannabis aphids have been observed in several states, including Virginia, Minnesota, Colorado, North Carolina, Kentucky, Illinois, California, Indiana, Iowa, Kansas, Wisconsin and Louisiana and may even be established in Oregon. It is likely that the illegal or heavily regulated status of cannabis in the United States has prevented the spread of the cannabis aphid between states. This can also be attributed to the species' minimal host range. However, the increasing popularity of industrial hemp as an agricultural commodity will result in much broader distribution via infested plant material.

As the industry grows, the movement of infested plant material will likely be the most effective means of long-distance dispersal. The cannabis aphid is considered reportable by the USDA (USDA-APHIS).

Pest Status

Cannabis aphids are also disease vectors and can transmit both cucumber mosaic virus and alfalfa mosaic virus to *Cannabis sativa*. The sappy secretions they produce (honeydew) are also of significant concern. Honeydew can be a precursor to fungal diseases like powdery mildew and black sooty mold, which can inhibit photosynthesis. The sugary saplike secretion can also attract another pest to the host plant, fire ants.

Damage resulting from the cannabis aphid appears as leaf wilting and yellowing (chlorosis), as well as reduced plant vigor and stunted growth. These aphids are also known to infest cannabis flowers, causing hypertrophy and distortion. Cannabis infestations will indeed have a negative economic impact on producers as additional production costs will be required, and altered control methods will need to be implemented to achieve adequate control.

Prevention and Control

Integrated pest management, or the combination of biological, cultural, physical and chemical strategies used to control pest populations, is essential when controlling hemp pests and diseases. This is especially true because no pesticides are currently registered for use on industrial hemp, meaning that any chemical applications to the crop are illegal. Organic treatments are available and have shown some results as agents of control of the cannabis aphid in *Cannabis sativa*. These treatments include azadirachtin (the active ingredient in neem oil), horticultural oil, insecticidal soap, *Beauveria bassiana* fungus formulations, peppermint oil and rosemary oil. Scouting to detect aphids early should be considered the first line of defense against infestation. Early detection can be



Signs of cannabis aphid infestation (molted exoskeletons) (Whitney Cranshaw, Colorado State University, Bugwood.org).

especially helpful in overall control of the pest. Growers should conduct regular pruning, cleaning and disposing of infested plants.

Generously spraying infected plants with water to dislodge the cannabis aphids may also prove beneficial to the overall control efforts. The introduction of natural pests in both fields and greenhouses growing hemp has shown promising results in controlling cannabis aphids. Convergent lady beetles and Asian lady beetles are believed to be the most important predators of *P. cannabis* in the field. Parasitic wasps, green lacewings, minute pirate bugs, and syrphid flies have also been immensely successful when utilized in aphid control. These natural predators build populations with the ability to control cannabis aphids during their late-season outbreaks effectively, either by feeding directly on the aphids or as parasitoids. Infestations located in greenhouses or other controlled environments could see significantly more damage because natural predators may be largely absent. If not already present, or if the infestation occurs in a setting with a controlled environment, beneficial insects can be purchased from a reliable vendor by any farmer. Crop rotation can be especially useful in preventing aphid infestations. Because the species has such a limited host range, a one-year crop rotation could eliminate any overwintering cannabis aphid eggs.

The use of tillage practices may also be beneficial in mitigating the presence of overwintering eggs present in your field. Tillage can remove any remaining seedlings post-harvest. This could be detrimental to hatching aphids, which require nearby hemp seedlings immediately after hatching to survive. Because conditions such as these rarely occur, cannabis aphids typically overwinter on live plants indoors and are then transmitted back into the field on infested transplants.

References

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Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: <https://bit.ly/36c4awm>.



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