

Common Pests in Industrial Hemp

By Heather Darby, University of Vermont Agronomist

Prevention, scouting, and impact of common pests and diseases

Since industrial hemp is a new crop to the Northeast, the pest potential is still widely unknown and it is possible that issues may arise after the crop becomes more prevalent. There are several diseases and arthropod pests that have been observed in Vermont. The impact these pests may have on yield appears negligible at this point.

Regular scouting of hemp is a way to monitor pest populations and potential problems that may arise. To scout your hemp plants, examine the top and undersides of leaves on low and high portions of the plant stems. Choose random plants throughout your field to gain a representative view of the entire planting. Currently, industrial hemp is a minor use crop and there are no registered pesticides available for its use.



Image 1. *Sclerotinia sclerotiorum*, common on industrial hemp on the seed head and stalk.

Disease

The most frequently observed disease in hemp has been white mold (*Sclerotinia sclerotiorum*). White mold can infect a wide range of broadleaf crops and weeds including sunflowers, mustards, edible beans, and soybeans. White mold infections spread by spores that are carried by wind and insects. Spores infect the stem and grain head in hemp.

The resting bodies of the fungus, sclerotia, can overwinter in the soil and remain viable for over 5 years. Moist conditions, high humidity, and warm temperatures (optimal is 68—77°F) encourage spore survival and growth.

Early in the season, especially under cool, wet conditions, seedling blight can also be an issue. Seedlings may rot or become stunted, leading to poor establishment and lower yields. Seedling blights are caused by a variety of pathogens including pythium root rot and rhizoctonia.

A four year crop rotation away from host crops is the best defense for preventing white mold.

Insects

Tarnished plant bugs, aphids, Japanese beetles, leafhoppers, European corn borers, and grasshoppers have been observed on hemp fields in Vermont, however, thus far they appear to cause minimal damage to plants.

Image 2 (Column on right). Common industrial hemp insect pests. A—tarnished plant bug, B—Aphid, C—Japanese beetle, D— Leafhopper, E—European corn borer, F—Berthy armyworm, G—Lygus plant bug nymph, H—Cutworm, I—Blister bug.



Leafhoppers

Leafhoppers were more prevalent in June/July and feed on leaves and stems with piercing sucking mouthparts that extract fluid from the plant. Most leafhoppers feed on the phloem of plants and have insignificant effects on plant growth and show no symptoms. Some leafhoppers may feed on the mesophyll and make a small, light flecking injury to the feeding site. They can also transmit plant pathogens, however, leafhopper-vectored diseases have not been observed so far. As such, leafhoppers may appear on hemp but are unlikely to cause significant damage. Leafhoppers will lay eggs in leaf tissue that overwinter, hatch in early spring, and then continue to lay eggs throughout the season.



Image 3. Beneficial insects (left to right): lacewing, ladybug (adult, larvae, pupa, from upper left, clockwise), parasitic wasp. Photo credits: Hobby farms, University of Minnesota, Public news service.

Aphids: Aphids were most prevalent in August, after vegetative growth had been completed, and therefore did not appear to have impacted yield. Aphids, like leafhoppers, suck fluids from the phloem, which can result in stunted growth and wilting. In outdoor settings, natural enemies such as lady beetles, green lacewings, and parasitic wasps prey on aphids. Aphids lay eggs that overwinter and hatch in the spring, develop, and then continue to lay eggs throughout the season.

European Corn Borer: We have also observed the European corn borer, the larva of which feeds on and weakens the hemp stalk, potentially causing it to break and reduce yields. Hemp plantings located close to corn fields will be more vulnerable to the European corn borer. The corn borer life cycle is to overwinter in the caterpillar form, and pupate and emerge as a moth in the spring. The moth then lays eggs on a host plant and it is the larva that damages the plant.

Tarnished plant bugs have appeared in Vermont and feed by sucking fluids from the plant, especially on new growth. Damage appears to be minimal.

Grasshoppers prefer dry conditions and hemp will generally outgrow the damage. Grasshoppers can chew on stems and tend to eat the large outside leaves of the hemp head. If severely damaged, seed development will be prevented and yields will decrease. Grasshoppers require a year long life cycle, with eggs being laid during late summer and hatching in mid-late spring. Tilling may damage eggs and prevent them from hatching.

Bertha armyworm has been reported as an occasional pest in Canada, with larvae feeding on the plant. Cutworms are a spring pest and can be identified by areas of dead plants or bare patches.

Other pests

Birds such as blackbirds, sparrows, starlings, etc. have preyed upon hemp seed, which protrudes from the seed head and are easy to pluck leading to harvest loss.

For additional information: Contact our program at cropsoil@uvm.edu, or visit the Canadian Hemp Trade Alliance e-guide, <http://www.hemptrade.ca/eguide>.

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number ONE19-333. This work was also funded by the Northeastern IPM Center through Grant #2018-70006-2882 from the National Institute of Food and Agriculture, Crop Protection and Pest Management, Regional Coordination Program.



January 2020. Published by the University of Vermont Extension Northwest Crops and Soils Program. Learn more about the program at: www.uvm.edu/extension/nwcrops.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. University of Vermont Extension, Burlington, Vermont. University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended.