

Harmful Hemp Pests

Caterpillars, Aphids and Spider Mites

By Alice Manning Touchette

With the 2018 Farm Bill clearing the way legally, many farmers are considering submitting applications to grow and cultivate industrial hemp. Hemp—which has more than 50,000 uses between the stalk, roots, leaves, flowers and seeds—has three potential varieties farmers may choose to develop: fiber varieties (used for textiles, pulp/paper and fuel), grain varieties (used for food and nutrition) and cannabinoid hemp varieties (used for cannabidiol, or CBD, as a nutritional, pharmaceutical and/or dietary supplement). With the exploding interest in the lucrative possibilities of industrial hemp comes a rapidly evolving study of how best to grow it and protect it from pests.

Photo: Debbie Roos



Hemp pests present different challenges depending on what variety is grown and how it is grown (from seed or plant cuttings, in greenhouses, tunnels or fields). Documented hemp pests to date include caterpillars, Japanese beetles, grasshoppers, leafminers, aphids and spider mites, among others. Many researchers, including the North Carolina State University (NCSU) Extension group on industrial hemp, are investigating which pests are likely to be the biggest concern for farmers. Tobacco farmers should be familiar with two of the primary hemp pests: caterpillars and aphids.

“For field-grown hemp, the main pests are tobacco budworms (*Heliothis virescens*) and corn earworms (*Helicoverpa zea*) that feed on buds, flowers and seed heads of hemp,” says Dr. Hannah Burrack, an NCSU professor and Extension specialist on berry, tobacco and specialty crops.

A study from Colorado State University’s College of Agricultural Sciences concurred that these types of caterpillars could mean potential damage to cannabinoid hemp varieties as the goal is to produce large buds to extract CBD and other compounds from. These pests are less of a concern for fiber hemp varieties.

Hemp is also vulnerable to cannabis aphids (*Phorodon cannabis*), also called hemp aphids, which differ from tobacco’s main pest, green peach aphids. According to University of Kentucky agriculture research specialists Raul Villanueva and Brenda Kennedy, these fluid sucking pests can cause leaf wilting and yellowing and stunt surviving plants. These aphids also “infest flowering tops, which may become distorted and hypertrophied.” In addition, secretions from cannabis aphids “attract ants and can support a heavy growth of black sooty mold that interferes with photosynthesis.”

In the field and the greenhouse, farmers should be aware of two species of spider mites: two-spotted

spider mites (*Tetranychus urticae*) and hemp russet mites (*Aculops cannibicola*). The two-spotted spider mites feed on hemp flowers and leaves, and they thrive in hot, dry conditions. The hemp russet mites infest the plant leaves and may cause plant color to dull, reduce the leaf size or make the plant more brittle. Colorado State University concluded that “heavy infestations [of hemp russet mites] can seriously suppress bud growth and size.” Though both species are known to survive year-round in greenhouse environments, researchers are still discovering how they fare in fields between seasons.

Farmers may be wondering how to deal with hemp pests, and the outlook is uncertain. Currently, no pesticides are legally recommended to protect hemp from pests.

“Pest management really must depend on the end use of the product,” Burrack explains.

“More research is needed into biological control agents for pests.”

Burrack is hopeful for new funding that will help researchers at NCSU explore insect management through screening biocontrol agents and explore the impact of pests on the chemical composition of CBD and THC in hemp. And, this summer, NCSU will release information on hemp disease management, plant pathogens and weed management.

Farmers looking to cultivate hemp will understand that no crop is completely pest resistant, and, Burrack added, “We don’t have to have a bug-free plant to yield a good crop.”



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