e-GRO Alert

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Sunflowers: Insects Like Them Too!

And the yellow sunflower by the brook,
In Autumn beauty stood.
William Cullen Bryant

Keep your face to the sunshine and you cannot see the shadows. It's what the sunflowers do.
Helen Keller

Everyone loves sunny sunflowers, judging from their growing popularity and diversity as a cut flower. Native to North America, the National Sunflower Association's interesting discussion of the plant's history, commercial and cultural uses (https://www.sunflowernsa.com/all-about/history/) notes earliest evidence of cultivation in the Southwest US around 3000BC. Now an important crop grown around the world for its high food and industrial value, we're learning even more about the benefits sunflowers provide. For example, a recent research report (Palmer-Young et al., 2023) found "sunflower pollen was associated with reduced levels of Varroa mites in honey bee colonies." Thanks to its economic position much is known about the plant's genetics and diseases, as well as the many insect pests, major and minor, associated with it. In the US at least 6 are found feeding on seedlings and roots, 5 on stems, 5 (plus ~12 leafminers) on foliage, and 11 on flower heads and seeds. A much smaller subset (around 8) of these is economically significant in large-scale commercial production and a smaller number might be encountered or common in cut flower production, in part because

Sunflowers ready for market.

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flower heads are removed and plants aren't grown to maturity for seed, production tends to be on a much smaller scale, crop residue is tilled under earlier, the impact of natural enemies, and other factors. Following are the few sunflower (cut flower) pests I have encountered in the field or the Diagnostic Lab over the years. Over time the list will likely grow, but the bottom line is sunflowers, as cut flowers, have not been highly pest-prone and based upon my experience are unlikely to need insecticide applications.

Field of sunflowers in bloom.

European corn borer (*Ostrinia nubilalis*) is occasionally found boring into stems of many kinds of plants, including sunflowers. Among cut flowers, dahlias, mums, strawflowers and ornamental corn are sometimes on the menu, as well as commercial vegetable (sweet corn, peppers, beans, potatoes), field (corn) and other (apple, hops) crops. Damage can weaken stems and cause breakage or dieback. Where it is a more regular problem separate pheromone traps are used to monitor flights of each of its two (E, Z) races. Traps are placed in grassy field borders and checked weekly from late May or June to September, with lures replaced every 2 weeks. The most damaging infestations, when they occur, are usually associated with the second (summer) generation of moths active after mid-July through August. Populations have overall fallen in the last decade or so and growers have not had to treat for this preventively, though occasional spotty outbreaks still occur. If European corn borer has been troublesome in the past, rather than setting up your own traps regional vegetable and field crop programs may publish in-season local trap data that cut flower growers may be able to access.

European corn borer in stem.

Painted lady caterpillar.

Sunflower moth caterpillar Photo Deborah Swanson, UMass Ext.

Asiatic garden beetles hiding in soil at base of plant.

Thistle or painted lady caterpillar (*Vanessa cardui*), is among the few butterfly pests (most are moths) I encounter in agricultural production. The colorful butterflies migrate north each year from Mexico or possibly parts of the Southwest US; the spiny caterpillars chew large areas from leaves and create webbing 'nests' which can be unacceptable on leaves of cut stems. However, foliage of sunflower cuts is often removed and even during 'outbreak' years the levels in sunflowers tend to be small, making it generally a minor concern on this crop. This insect is a popular one for school projects, in part because the caterpillars are easily reared on artificial diets. Burdock, thistle, hollyhock, lupine and many other plants are also hosts.

Saltmarsh caterpillar (*Estigmene acrea*), like the painted lady, is a minor pest that draws attention due to the sometimes dramatic damage it causes when the caterpillars, gregarious in their early stages, defoliate individual plants. I have yet to see large-scale damage in the field, however, even if in some years the insect is quite common. Caterpillars are quite hairy and vary considerably in appearance from pale yellow to black. It's a relative of our famous weather-prognosticating black and orange-banded woolly bear. Also called acrea moth, saltmarsh caterpillar adults have bright white forewings and yellow (male) or white (female) hindwings, both with black dots. The cocoons overwinter.

Banded sunflower moth (*Cochylis hospes*) is about ¼" long, tan with a darker triangular band in the middle of each wing. The moths start appearing around mid-summer and lay eggs mostly on sunflower bracts of middle-sized buds. Youngest caterpillars feed on pollen, later on disc florets and developing seeds, then drop off to pupate in soil. There can be one (northern areas) to several generations a season. Populations are monitored with pheromone traps and scouting buds for eggs; deep plowing old stalks can reduce the population significantly and some varietal resistance has been noted. Ironically, in lab tests presence of pollen appears to deter egg-laying, which may serve to guide moths to buds rather than open flowers, but it's unclear how moths are now responding to pollenless cut flower cultivars.

Sunflower moth (*Homoeosoma electellum*) is small, (1/3”), pale gray or tan, tubular-shaped and overwinters in the southern parts of the US, migrating north in summer. Eggs are laid preferentially on flowers at early bloom. Caterpillars, longitudinally striped brownish-red and cream, start feeding on pollen and florets, later boring in to feed on developing seeds and the receptacle. Damage is compounded by increased risk or incidence of head rot. It can be one of the most damaging pests in commercial sunflower production. It is also a pest I am commonly seeing in Echinacea, where infested flowers may have small piles of frass among disc florets and deteriorate or fade prematurely. Scouting and pheromone traps can be used for monitoring and timing treatments but applications should consider potential for impact on pollinators. Some have reported the caterpillars require sunflower pollen, so it may be a non-issue on pollenless cultivars.

Asiatic garden beetles (*Maladera castanea*) are ‘stealth bombers,’ active during the evening when least observed. The adults feed on leaves and flowers of many plants and the larvae, a white grub, feed on roots of grasses and weeds. During occasional ‘outbreak’ years plants, including sunflowers, can suffer heavy defoliation. The beetle is often responsible for mysterious damage to chrysanthemums, basil roses, and Echinacea (especially flowers) starting in June. The culprit can be detected by checking plants after dark with a flashlight or sifting through loose soil at the base of plants for the adults hiding there during the day. They also might be noticed attracted to porch and other lights at night. Hand-removal may suffice in small plantings.

Sunflower spittlebug (*Clastoptera xanthocephala*) bears mentioning after encountering it producing ‘spittle masses’ in August on chrysanthemum, a related host, last year. I have yet to see it on sunflowers specifically. Our more common meadow spittlebug is done producing these protective foamy nests by late spring, and with the increasing popularity of sunflower I’ll be watching to see if this becomes an annoyance in its eponymous crop. For images: https://bugguide.net/node/view/20663/bgimage.

Greenhouse pests: Sunflowers are occasionally grown in pots for sale as tabletop decoration. Western flower thrips can be a problem and long list of aphids can potentially feed on sunflowers, though I have so far only encountered green peach aphid as a minor pest.

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Echinacea petals chewed off by Asiatic garden beetle.

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