

# GRAPE PESTS

## want more than a sip of your vineyard

Laramie is infamous in Wyoming for having a harsh climate for growing plants.

The two heaviest snows in my hometown in 2020 occurred in June and September. Despite this, grapes grow successfully in microclimates created in Laramie yards. My dental hygienist has one of them. When I see him each fall I always ask how his grape crop did. The conversation is one-sided as he works, but he usually gets enough grapes to make some wine each year!

There is great potential for grape production in Wyoming regions with milder climates with development of varieties selected for coping with short, frost-free period climates.

A possible advantage a Wyoming vineyard has is not having wild grape vines growing nearby that can be a source of pest insects that specialize on the crop. This does not mean it is impossible for grape specialist pests like the glassy winged sharpshooter (*Homalodisca vitripennis*) to show up in a Wyoming vineyard. Growers need to monitor for vineyard pests.

A grape grower should be very cautious about importing material that could harbor plant diseases or insect pests.

Individual production philosophy and the end use of the grapes grown will determine what pesticide can or can't be used legally if economically damaging populations of pests are discovered. The first step of Integrated Pest Management is always identification of the pest. The second step is determining whether the pest damage can be economically treated. Plant pest damage that threatens the long-term health and productivity of the vines or the saleable portion of the plants are most likely to be worth treating; however, the importance of regularly scouting the vineyard to detect and manage pest problems before they become severe cannot be overemphasized.

The following overview of already present or potential grape pests may help when scouting a vineyard.

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We want to ask **Scott Schell** his suggestions for what wine goes best with studying grape pests, but we want him to write for us again. Schell is the University of Wyoming Extension entomologist and can be reached at (307) 766-2508 or [sschell@uwyo.edu](mailto:sschell@uwyo.edu).

## Pests that attack grape roots and/or woody parts



Grape phylloxera (*Daktulospharia vitifoliae*) is a tiny insect related to aphids that spends most of its complex life cycle feeding on grape roots. It is most visible when the gallicole stage of the insect forms galls on grape leaves. This insect pest is infamous because it almost destroyed the wine industry in Europe by 1900 when accidentally introduced in 1860 with American grape vines. The plants were imported in an effort to improve powdery mildew resistance in the European species of *Vitis*. The grape phylloxera were unknowingly imported, too. Three North American grape species are resistant to phylloxera damage, and their rootstock are used for grafting susceptible grape species vines worldwide. The leaf form of this pest was discovered in a Goshen County vineyard in 2020.



Grape cane borer (aka apple twig borer) (*Amphicerus bimaculatus*) and an example of an 1/8-inch diameter exit hole they can make in a stressed grape vine just above a node. It is more likely to see the exit hole in the vine than the tiny beetle that made it.

Whitney Cramshaw, Colorado State University, Bugwood.org

Pest and Diseases Image Library, Bugwood.org

Evgeny Karandaev, shutterstock

## Pests that attack grape roots and/or woody parts



The larvae of several species of beetles in the genus *Otiorhynchus*, typically called root weevils, can feed on the roots of grapevines. Some root damage like this caused by the larvae of these black vine beetles (*O. sulcatus*) can be tolerated by established grape vines but can stunt or kill new vines. For example, if new vines were planted next to a lilac hedge infested with the lilac root weevil (*O. meridionalis*), the plants could be severely damaged by their larvae and fail to thrive.

Jim Baker, North Carolina State University, Bugwood.org

## Grape pests that chew leaves or pierce and suck plant juices



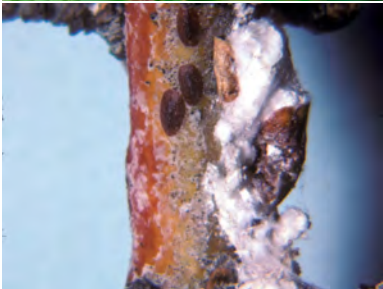
Apple flea beetle (*Altica foliaceae*) adults and larvae will defoliate grapes and many other plant species. The iridescent green adults overwinter in plant debris. They are very strong fliers. They seek out suitable host plants and deposit pale orange eggs on the leaves. The larvae that hatch are small, black-colored grubs that skeletonize the grape leaves from the underside.

Joseph Berger, Bugwood.org



“Climbing cutworms” is a catchall term for the larvae of multiple species of noctuid moths. The larvae are most active at night or overcast days and will climb up on a wide variety of host plants to feed. The variegated cutworm (*Peridroma saucia*) in this photo shown feeding on hemp is a common species of climbing cutworm in Wyoming.

Whitney Cranshaw, Colorado State University, Bugwood.org



Cottony maple scale (*Neopulvinaria innumerabilis*) is able to utilize grapes and many other plants besides maples as hosts. These insects feed on the plant phloem and produce copious amounts of honeydew that attracts ants and also causes sooty mold to grow on the plants and grape clusters. Sometimes, these scales can be easily pruned off. Properly timed horticultural oil applications can also be used to control the scales on the main trunk and cordons.

Whitney Cranshaw, Colorado State University, Bugwood.org



The ubiquitous web spinning spider mites such as the twospotted and McDaniel species (*Tetranychus urticae* and *T. mcDanieli*) can cause damage in vineyards usually in response to climatic conditions that are hot, dry, and dusty, which favor them. Alternatively, spider mite populations can flare after a pesticide application for other grape pests that reduces their predator's population unintentionally. A hand lens may be necessary when scouting to see the mites. They can rapidly increase to damaging populations in favorable conditions.

Bruce Watt, University of Maine, Bugwood.org



Detection of the mainly nocturnal adult root weevils is usually done by observing their characteristic leaf edge notching like this lilac root weevil has done to the peony leaf. The leaf damage they inflict is considered minor compared to the damage inflicted by their root feeding larvae.

Whitney Cranshaw, Colorado State University, Bugwood.org



Large achemon sphinx (*Eumorpha achemon*) caterpillars are common on ornamental Virginia creeper plants in Wyoming, but they can also utilize grape leaves for food. Their number and density in the vineyard determines their pest status, but the large insects can eat a lot of leaves.

Joseph Berger, Bugwood.org

## Pests that attack grape roots and/or woody parts



Multiple species of grasshoppers will feed on grape plants. The two-striped species (*Melanoplus bivittatus*) is the most common in Wyoming. The soil of weedy areas of fence lines, borrow ditches, and around outbuildings are preferred by this pest species for protecting their overwintering eggs. Scout that habitat starting in mid-May and continue on a weekly schedule until mid-July to watch for hordes of tiny grasshoppers emerging from the ground. The goal will be to treat the source of these pests outside of the vineyard to prevent invasion later in the summer as the grasshoppers become big and more mobile.



Western grape leaf skeletonizer (*Harrisina metallica*) caterpillars are brightly marked and often feed in groups on the surface of leaves. Many types of insecticides labelled for leaf feeding caterpillars on grapes are available. Follow the field reentry period and pre-harvest interval labelling for any insecticide product you choose to use.

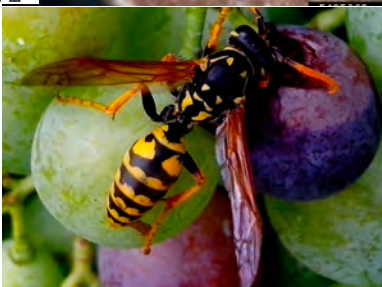
## Insect pest affecting the saleable parts directly



Grape leaves are not commonly considered a saleable product of a vineyard, but some Mediterranean cuisine utilizes grape leaves, and they could be a potential cash crop at farmers markets as vigorous plants can easily withstand light defoliation. Western grape leafhopper (*Erythroneura elegantula*) nymphs and adults can jump and also fly off the leaves, but the evidence of their piercing sucking mouthpart inflicts on the leaf surface is left behind. The widely distributed Virginia creeper leafhopper (*Erythroneura ziczac*) is another species of leafhopper in Wyoming that can also severely damage grape leaves. These leafhopper species produce multiple generations during the growing season.



Grape berry moth (*Paralobesia viteana*) can have multiple generations per growing season with the first generation feeding on the blossoms and small berries. The second-generation caterpillars tunnel directly into the grapes and both generations tie the grape cluster together with silk webbing.



Yellowjacket wasp (*Vespula*) species and European paper wasps (*Polistes dominula*) (pictured) will feed on ripening grapes. Earlier in the growing season they can be beneficial predators of leaf feeding caterpillars in a vineyard. That benefit has to be weighed against fruit damage and vineyard worker safety. Effective traps are available to suppress yellowjacket populations starting in the early spring; however, the lures used in yellowjacket wasp traps are not attractive to European paper wasps.



The brown marmorated stink bug (*Halyomorpha halys*) is not known to be in Wyoming as of 2021, but it is found in all of Wyoming's neighboring states, with the exception of South Dakota. This pest will feed on ripening grapes, wounding the fruits, which allows decay to start. The bodies of the insects can also contaminate harvested grape clusters, which can taint the flavor of wine or jelly produced from them.