



Figure 1. This citrus tree is heavily infested with possum grapevine.

Don't let vine weeds trip you up

By Ramdas Kanissery and Camille McAvoy

Weedy vines are among the problematic and difficult to manage group of weeds in citrus. Vine weeds twine around the trees, competing with citrus for light and nutrients and causing reduction in yield and harvesting efficiency. Since vines do not have to form strong upright stems, more energy and resources can be diverted into rapid growth and

proliferation (Figure 1). This, combined with their exceptional ability to flourish in areas where light levels are low, makes vine weeds tough to tackle in a weed management program.

Many vine weed species are found in Florida citrus groves. Some examples of commonly found vines in Southwest Florida are milkweed vine and possum grape vines (Figure 2, page 17). In addition, other vine weeds like balsam

apple, Virginia creeper, morning-glory, cat's claw and skunk vine may be present (see <http://edis.ifas.ufl.edu/hs185>). Most species can be readily identified by their twining nature, presence of tendrils or modified roots, which aid in the weed's ability to climb. These structures provide the necessary support and attachment for the vine's growth into a citrus tree's upper canopy. Vine weeds can have extensive root structures, such as tubers and rhizomes (Figure 3, page 17) that operate as carbohydrate storage and cause the weed to be more difficult to manage.

Vine stems will grow into the lower branches of the tree and elongate into the upper canopy. Once fully grown into the canopy, vines will flower, form fruits and produce seeds for dispersal (Figure 4, page 18). When vines are well established in the citrus canopy, management is very challenging. The major limitation is an insufficient amount of herbicide reaching the vine foliage to control the hardened vine.

MANAGEMENT METHODS

A single best approach is not available for controlling weedy vines in citrus groves. Every situation is different, and growers often must choose a method from the variety of options available. The management options include prevention, physical/mechanical control and chemical control. Each chosen practice will vary with location, soil type, time (season), tree spacing and age, vine presence, cost and grower preference.

Preventive Measures

The implementation of proper sanitation practices may help to prevent the vines from spreading in the citrus grove in the first place. Examples of sanitation practices include ditch bank and perimeter weed control, washing and rinsing equipment that plant debris builds up on, and isolating a weed problem by working (e.g., mowing or spraying) the area last.

Vines inhabiting ditch banks and grove perimeters can provide seed sources for infestations and should be controlled in the management program.

Physical or Mechanical Control

Physical weed control of vines includes hand removing or digging them out with complete removal of the root structures (tubers and rhizomes). This method of weed removal tends to be very labor intensive and cost prohibitive. Regardless, when performed regularly, physical control is a great method to deal with a sporadic emergence and light infestations.

Occasional cutting back of the above-ground vines is never a final and complete solution for managing vine weeds. For example, when the stems of possum grape vines are cut, cuttings

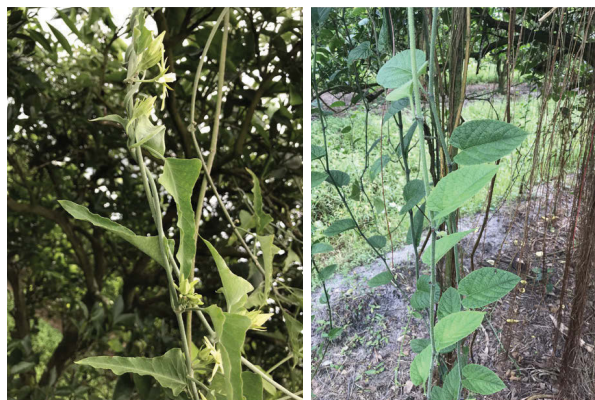


Figure 2. Milkweed vine (left) and possum grapevine (right) are among the commonly occurring vine weeds in citrus.



Figure 3. Extensive root systems are found in possum grape vine (left) and milkweed vine (right).

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Figure 4. Fruits of milkweed vine are shown on the upper canopy of citrus (left). Ruptured fruits expose seeds that are tufted with silky white hairs at one end (right).

can develop adventitious roots when left on the soil surface. These cuttings allow the vine to multiply, grow and infest the adjacent trees. Following up with a chemical after cutting the possum grape vines would reduce the potential for asexual propagation. While possum grape vine is a special case, it exemplifies the need for follow

up with a chemical control option after physical control.

Chemical Control

Two strategies exist for chemical control of vine weeds, 1) spot spraying the vine foliage with a systemic herbicide and 2) an application to the soil of a pre-emergent herbicide.

Systemic post-emergent products (e.g., glyphosate) have the most potential to control established vine weeds.

Systemic products are only possible for use when the weedy vines are young, short and not entangled in tree foliage. It is not recommended to spray systemic post-emergent products directly at citrus foliage or tree trunks. Direct

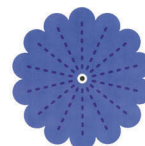
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application of a systemic post-emergent herbicide to any portion of an actively growing citrus tree will result in tree damage. Thus, it is very important to target a systemic product application to a vine weed's foliage (spot spraying).

Several pre-emergent herbicides, especially those containing the active ingredient simazine, can provide vine weed control when applied at the right time. For optimal control, applications of pre-emergent herbicides should be timed before weed seeds emerge. A more detailed list of suggested herbicides specific to vine weeds can be found in the chapter on weeds in the most recent Florida Citrus Production Guide (<https://crec.ifas.ufl.edu/extension/pest/PDF/Weeds.pdf>). As always, read the label and follow all product label instructions.

Integrated Approach

For well-established vines, spraying the entire vine is not a crop-safe approach to management. The risk for herbicide injury is too high. The cut-vine method is the most practical method in such scenarios. As its name suggests, it involves cutting off the vine a few inches from the ground and immediately following up with an approved post-emergent systemic herbicide on the stem remnant. The freshly cut surface absorbs and translocates the herbicide, killing the stump and root structures. This method is ideal as it may be used any time of year and repeated, as necessary.

CONCLUSION

Due to their aggressive growth and difficulty in management, vine weeds are problematic in citrus groves as they compete for resources and hinder harvesting operations. Management options available for vine weed management in citrus include the combination of preventive, physical and chemical controls. Established vines require cutting followed up with an herbicide application to the stump for effective control. 🍊

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