



Figure 1. Contact herbicides can be used for weed control prior to new tree establishment.

Protecting new citrus plantings and resets from weeds

By Ramdas Kanissery and Mongi Zekri

Newly planted citrus trees and resets require more care and attention than established trees, especially when it comes to weed control. Florida's weather conditions like high summer temperatures and often heavy rainfall make weed control in young groves difficult. Weeds compete with young citrus trees for nutrients, moisture and other resources, and may hinder successful tree establishment. Weeds growing around new plantings may also absorb soil-applied chemicals and reduce their availability to citrus trees for pest and disease management.

Resetting trees in groves presents another challenge because the new trees are distributed irregularly

among the larger trees in a grove. Such scattered resets often have more weeds because the soil around them is exposed to more sunlight, which is conducive for weed growth. These resets are often overlooked for extra weed management care as they are difficult to spot in the block. In addition, young trees are more susceptible to damage from herbicide applications compared with mature and established trees. Hence, careful and tree-safe weed control is a crucial component for newly planted citrus trees.

Weed control in new citrus plantings or around resets should be considered at three stages: 1) pre-planting, 2) during the early establishment period and 3) post-establishment.

PRE-PLANTING

Weed control prior to planting (Figure 1) can be achieved with several strategies. Non-chemical methods include mechanical mowing and cultivation. However, when the soil is moist, cultivation of new planting areas can cause the bottom of the plowed layer to seal off, inhibiting root growth. There is also the risk of stimulating weed seed emergence when the soil is disturbed.

Chemical control using post-emergent herbicides with contact mode of action (e.g., products containing active ingredients like carfentrazone-ethyl and paraquat) is the preferred method for pre-plant weed control in citrus. This is a relatively safe option since contact herbicides generally do not leave phytotoxic soil residues behind.

Residual or pre-emergence herbicides that are approved for use in young citrus trees can also be applied to the soil during site preparation for new plantings. However, an extremely low application rate should be selected for such herbicides. High concentration of herbicide residues in soils can potentially result in phytotoxicity and/or severe stunting in young citrus trees.



Figure 2. Wraps can be installed to protect trunks of young trees and resets from spray contact.



Figure 3. Note the narrow herbicide application bandwidth in this weed-managed zone in a new citrus planting.

These residual herbicides should be applied well in advance (e.g., at least one month prior to planting according to certain product labels) so that herbicide residues do not affect the rooting and establishment of the new trees.

Regardless of the type of herbicide used, the label should be consulted for information, especially the waiting period before planting, also known as the pre-planting interval.

EARLY ESTABLISHMENT PERIOD

Weed control during the first year of a new planting is quite challenging. Manual or mechanical weed removal are non-chemical options but are

laborious and expensive. Also, mechanical mowers can damage young trees.

Mulching around trees with organic materials such as compost and wood chips can assist in managing weeds by excluding light from the soil surface. Mulch will also improve moisture retention and maintain soil surface temperatures. If using mulch for weed suppression, care should be taken to avoid any contact of the mulch with the trunks of the trees. The bark of young trees can become soft if it is in contact with mulch due to excess moisture build-up, which increases vulnerability to pests and diseases.

Chemical weed control utilizing herbicides is also an effective strategy

during the early establishment period. A large selection of residual and post-emergent herbicides is available for controlling a broad range of weeds in young trees and resets. For a complete listing of herbicide recommendations, please refer to University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Electronic Data Information Source publication HS-107 (<https://edis.ifas.ufl.edu/cg013>).

Some herbicides that are applied in mature citrus groves may not be appropriate for new plantings. For instance, the use of products containing the active ingredient indaziflam is discouraged in citrus trees established for less than one year after transplanting. Since trees in their early establishment phase are more vulnerable to herbicide-related injuries, label directions for their rate and use restrictions must be strictly followed.

POST-ESTABLISHMENT

One year after tree establishment, the weed control program can be modified to correspond with established grove practices, but herbicide rates adjusted for tree age. Herbicide use at a lower range of application rates, particularly for residual herbicides, will assure that young trees and resets will not be injured. Technological advancements have resulted in the development of sophisticated herbicide application equipment (e.g., herbicide rig mounted with precision application sensor) capable of delivering a reduced rate of material in the new planting or reset area in the grove.

Also, growers must note that certain

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herbicide products may only be labeled for nonbearing citrus and may only be applied for a limited time. For example, Prowl 3.3 EC, an herbicide containing the active ingredient pendimethalin, can only be used on citrus trees that are not going to be harvested within 12 months.

PREVENTING YOUNG TREE DAMAGE

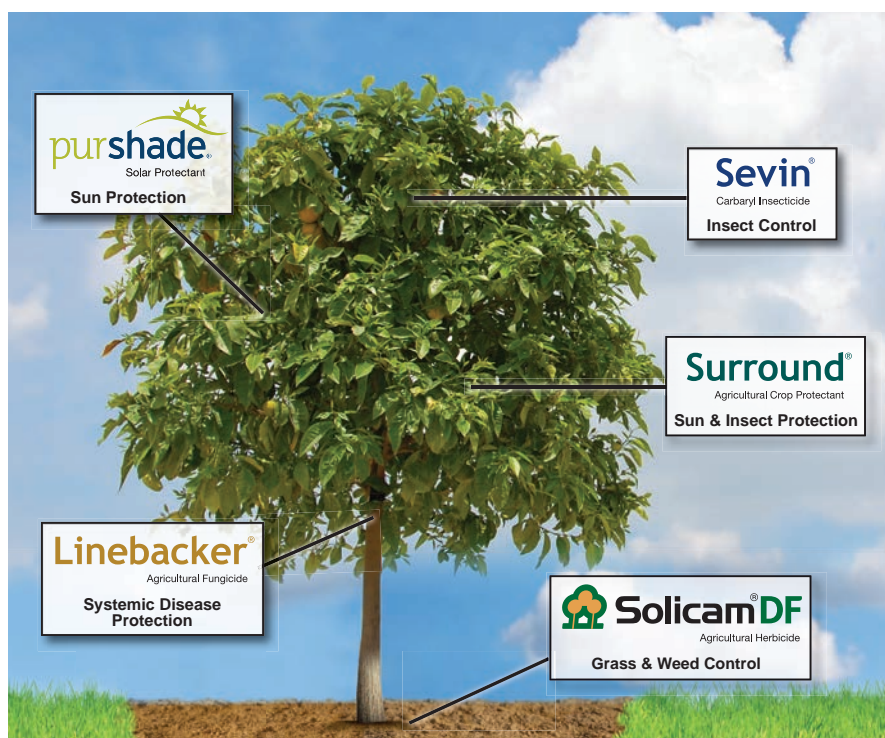
One potential strategy for assuring the health of young trees is to apply the herbicides at the low range of labeled rates but at frequent intervals. Make sure to consult the label for suggested time intervals between the follow-up application of herbicide products.

Care should be taken to avoid herbicide spray contact with tree bark, stems or foliage as injury may occur. The trunks of young trees and resets with green stems should be protected from spray contact by nonporous wraps or tubes. The wraps are typically installed around the lower 12 to 16 inches of the tree trunk (Figure 2, page 20). Be sure to periodically scout for insects or other pests concealed in these wraps that may damage the tree trunk. For instance, ants will often colonize the space between the tree trunk and the tree wrap. If insects have colonized this space, remove the wraps, remove the colonies and install looser wraps if the trees still require protection.

HERBICIDE BANDWIDTH CONSIDERATIONS

Maintaining a narrow herbicide application bandwidth (approximately 3 to 4 feet on each side of the tree) is desired in newly planted trees and resets (Figure 3, page 20). As the canopy width increases, the herbicide bandwidth can be gradually increased. Narrow bandwidths in young trees will not only help to minimize soil erosion in the groves but also maintain water quality in bedded groves. Additionally, a narrow herbicide application band reduces the amount of herbicide material applied per grove acre, and therefore reduces the total weed control costs. 🍊

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