

Considerations for use of products in management of **CITRUS GREENING**

By Steve Futch
and Mark Mossler

As state-wide production drops to historically low levels, citrus crops are currently generating relatively positive economic returns. At the same time, production managers are making significant efforts to combat citrus greening (*Huanglongbing* or HLB), and its vector, the Asian citrus psyllid (*Diaphorina citri*). Intensified efforts to control greening and the vector have been widely discussed in grower circles, and some elements of these control measures have been introduced into grove management programs. These programs involve different ways of applying crop protection chemicals while others include using materials not previously considered.

One chemical approach being considered for insecticide treatment for citrus psyllid is use of more concentrated sprays (i.e., lower spray volume per acre) that cover more area in less time, thereby lowering application costs. For this lower volume treatment, applicators should exercise caution because pesticide labels vary in their specifications for applications. For example, the dimethoate label states “for concentrated application, apply 1 to 2 quarts per acre in sufficient water to provide full coverage of foliage.” In contrast, the fenprothrin label states “no less than 50 gallons per acre should be used to apply the material by ground spraying.” When a product label states a range of spray volume per acre, it is the responsibility of the applicator to follow the prescribed spray volumes and application methods. Improper spray volumes and application methods may result in spray droplets that can drift off-site and risk movement to non-target areas, causing crop damage or residue issues. Remember the label is the law and must be followed.

Production managers know that numerous “chemical remedies” for citrus canker were touted as the disease spread statewide after the hurricanes in 2004 and 2005. The only products recommended in the Florida Citrus Pest Management Guide (<http://edis.ifas.ufl.edu>) for canker control are well proven copper formulations already in use for control of

fungal diseases of foliage and fruit. Nevertheless, several alternative products were tried and found to be ineffective through grower experience and replicated trials.

Although some compounds are allowed on food commodities without requirement for a tolerance, the federal Environmental Protection Agency (EPA) maintains a list of thousands of compounds as a “list of inerts” (known as the 4A and 4B inerts). There is also a list for 25(b) pesticides, i.e., compounds for use on food commodities — also without requirement for a residue tolerance in food crops. The 25(b) pesticides are minimal risk materials that are a subset of the inert ingredients. Materials that can be used in organic crop production are drawn from the inerts list. Organizations such as the Organic Materials Review Institute determine which inerts and 25(b) pesticides can be used in the organic production scheme.

The term “pesticide” is defined as (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or (2) any substance or mixture of substances intended for use as plant growth regulator, defoliant, or desiccant. One of the most important words in the FIFRA definition of “pesticide” is “intended.” A key determination is whether the product is **intended** to be used as a pesticide. Products are generally considered to be pesticides if they are **intended** for preventing, destroying, repelling or mitigating any pest, or **intended** for use as a plant growth regulator, defoliant or desiccant.

EPA determines **intent** by examining claims on the label, advertising, composition/use and/or mode of action of the product as distributed or sold. If a person who distributes or sells the product claims, states or implies by labeling that the product can be used to control a specified pest, then the product is classified as a pesticide. Some substances and products are excluded for pesticide registration requirements if they meet certain conditions or criteria. Examples of products that are not pesticides include liquid chemical sterilants, nitrogen stabilizers, products labeled only for use on humans or animals (such as vitamins and hormone products), prod-

ucts intended only to aid in growth of desirable plants, antimicrobial products used solely in processed foods or feeds, in beverages or in pharmaceuticals, and products with no pesticidal claims.

Products that are not intended to prevent, destroy, repel or mitigate a pest, or to defoliate, desiccate or regulate the growth of plants are not considered to be pesticides. Some of these products may appear to be pesticides, but are not considered as such unless pesticidal claims are made on their labels or in connection with their sale and distribution.

Currently, there are also several products available in the citrus management trade that claim enhancement of plant health as opposed to providing pesticidal activity that reduces the pest or pathogen populations. The use labels for these products may or may not contain statements that they affect certain pests or pathogens by eliciting a plant defense response. However, if the products are being promoted and applied to specifically induce the defense response in plants and to control a plant disease, then these products may fall under the definition of a pesticide. Currently, there are no products of this type registered for use in citrus.

Citrus juice and byproducts are tradable commodities and, as such, are subject to significant testing to meet national and international health and certification standards. With this in mind, grove managers must consider all chemical inputs to their crops. Inadvertent residues in the juice of compounds that require establishment of food residue tolerances may risk rejection of the entire crop or ‘lot’ of juice. If a product is purported to have disease or pest control activity, grove managers should discuss its use with registrant representatives or IFAS personnel to assist in evaluation of the utility and legality of the product for use in citrus. If utility is confirmed by testing in some manner, registrations are available under the federal pesticide law to make them available under labeling guidelines for emergency situations.

Steve Futch is a multi-county extension agent and Mark Mossler is in the Pesticide Information Office, both with the University of Florida.