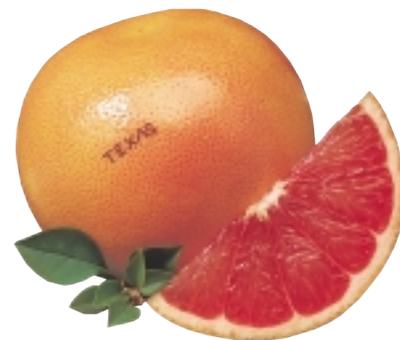




# The Agriculture Program

The Texas A&M University System



## Citrus in Texas

### Crop Brief on Production, Pests, & Pesticides

#### Citrus Production

- Texas ranks 3rd in U.S. production.
- Cash receipts for farmers exceed \$29 million annually.
- Total impact in the Texas economy exceeds \$93 million.
- Over 32,000 acres are grown in the Lower Rio Grande Valley and consists of 70% grapefruit and 30% oranges. Production is concentrated in Hidalgo and Cameron counties, but is limited by freezes. Other commercial subtropical tree crops totaling 300 acres include lemons, limes, tangerines, and tangelos.
- Grapefruit is red-fleshed and typically sold in high quality gift packs or fresh markets as Rio Stars, and Ruby Sweets.
- Orange production is mostly early varieties such as Marrs, Navel and late varieties like Valencia for regional fresh market sales. Cultivars of both grapefruit and oranges are grafted on to sour orange root stocks for saline soils, foot rot, and nematode tolerance.

#### Insect Pests

- Orchards are commonly managed by grove care operators who scout for pests based on IPM practices to hold down costs. In relation to potential loss of OP's, carbamates, and B2 carcinogens, the following pests and products have been identified as important for citrus production in Texas.
- Key problems include mites, scales, leaf cutting ants and fire ants. Citrus rust mite and spider mites are common. These pests can cause 60% in yield and quality losses, but can be controlled with various insecticides and miticides. Armored scale and soft scale insects are difficult to control.
- Present varieties are not resistant to insects. Efforts are underway to develop transgenic cultivars with insect resistance. Introduced beneficial insects control citrus blackfly and Florida red scale in managed groves.

- **Dicofol (Kelthane), aldicarb (Temik), hexakis (Vendex), and chlorpyrifos (Lorsban** and others) are major FQPA targeted products that, if withdrawn, could negatively impact the industry by 60% in yield and quality.
- Two currently labeled alternatives for mites are **abamectin (Agrimek)** and **pyridaben (Nexter)**, but they need to be rotated back with the above miticides to prevent resistance. Alternatives for scale control include nonphytotoxic oil and a possibility for ant control is the bait-form of **abamectin (Clinch)**. Several products such as **bifenthrin (Capture)**, **pyriproxyfen (Esteem)**, **imidacloprid (Admire)**, and **buprofezin (Applaud)** show promise in addressing future needs.

## Diseases

- Diseases include fungal leaf spots such as greasy spot and melanose, which cause defoliation and fruit blemishes. Copper-based products are available for fungal leaf spots. Soil-borne diseases include Phytophthora foot rot.
- Essentially all commercial oranges and grapefruit varieties are grafted onto sour orange rootstock which tolerates Phytophthora foot rot. But this rootstock is very susceptible to the citrus tristeza virus, which is vectored by the brown citrus aphid, which is currently limited in Florida, but is expected soon in Texas.
- Other than rootstock, there are no biological controls for citrus diseases.

## Weeds

- Annual broadleaf weeds, such as vines and pigweed, compete for water and nutrients under the tree and in the middles. Perennials such as bermudagrass, guineagrass, and yellow nutsedge reduces tree productivity and can interfere with harvest.
- Cultivation is commonly practiced, but residual herbicides help suppress weed growth and reduce mechanical root pruning. However, weed control with herbicides is most common for freeze protection and water conservation.
- If herbicide families, such as **triazines (simazine/Princep)**, **ureas (diuron/Karmex)**, and **uracils (bromacil/Terbacil)** are targeted, only **thiazopyr (Mandate)** and **norflurazon (Solicam)** would remain for preemergence weed control. **Glyphosate (several)** and **sethoxydim (Poast)** are used for postemergent weed control.

## Outlook

- For latest information regarding these issues and status of risk assessments visit [ipmwww.ncsu.edu/opmppiap](http://ipmwww.ncsu.edu/opmppiap) and [www.epa.gov/pesticides](http://www.epa.gov/pesticides).

**Crop Briefs** is an information series developed by The Agriculture Program of the Texas A&M University System on critical pest problems and pesticide needs for Texas agriculture. This effort is supported by the **Texas Citrus Mutual**, and other commodity groups. Dr. Dudley Smith, Texas Agricultural Experiment Station and Dr. Juan Anciso, Texas Agricultural Extension Service prepared these reports August 2000 using information from numerous sources. Departmental Report SCS-2000-02.

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