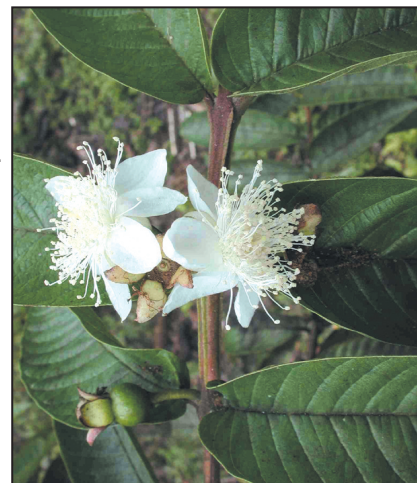


*Vietnamese citrus interplanted with guava had higher mite populations and higher incidences of canker and scab. Guava poses additional concerns to citrus growers and researchers.*

# IFAS — Be cautious about guava

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*Immature fruit and leaves of guava.*



*Guavas and newly set fruit of guava.*

Recently there has been considerable publicity about the use of guava (*Psidium guajava* L.) trees to fight huanglongbing (HLB, citrus greening) in Florida, but IFAS recommends caution regarding this proposal. The information that has stirred this discussion comes from observations reported from some Vietnamese citrus growers who for the past 15 to 20 years have interplanted citrus with guava. These growers believe that such interplanting might delay significant losses due to greening by either repelling psyllids or hindering the ability of psyllids to locate citrus plants. The effects of guava on psyllid populations and HLB incidence is being further investigated by Vietnamese and Australian researchers, and the USDA is conducting field studies with guava trees in South Florida.

In an unreplicated trial in the Cai Be region of the Mekong Delta of Vietnam, two blocks of trees were planted several kilometers apart. One block was planted as a solid block of citrus trees and in the other, citrus was interplanted with guava in a 1:1 ratio. After a period of one year, no greening was detected in the citrus trees planted in the presence of guava at one site whereas those planted at the second

site without guava had infection rates of 30 to 40 percent.

The results also showed that citrus trees planted with guava had very low populations of adults and nymphs of the Asian citrus psyllid (*Diaphorina citri* Kuwayama — the insect vector of greening) per tree compared with those not planted with guava. The guava trees were thought to have ei-

ther acted as a natural repellent of the psyllid or were toxic to the insect. The larger size of the guava trees as opposed to the newly planted citrus may also have made it difficult for pests to locate the citrus hosts.

While these data initially look interesting, caution is advised. Despite interplanting with guava, Vietnamese farmers who have maintained such interplantings for more than 15 years report that psyllids are still present in these groves and management of the psyllid is still needed. Therefore, these farmers routinely monitor new flushes for the presence of psyllids and hand remove any flush on which psyllids are observed. Petroleum oil sprays are also routinely used by the Vietnamese to help reduce psyllid populations when new flush is anticipated.

## **MITES, CANKER, SCAB, CARIBFLY ...**

The investigators of the above mentioned study indicated that the citrus trees interplanted with guava had higher mite populations and higher incidences of canker and scab. Additionally, guava is a preferred host of Caribbean fruit fly, *Anastrepha suspense*, in Florida. While not

a direct threat to Florida citrus production, Caribfly management is necessary to export fruit to some domestic and foreign markets as mandated by the Caribbean Fruit Fly Protocol of the Florida Department of Agriculture and Consumer Services. These rules include the creation of fly-free zones around groves producing fruit for export. One of the requirements for creating a fly-free zone is that the designated grove area and a buffer zone be free of preferred hosts such as guava, Surinam cherry, and other soft-fruited species.

In addition to serving as a host of Caribfly, the IFAS Assessment of the Status of Non-Native Plants in Florida's Natural Areas has concluded that guava is an invasive species and it is NOT RECOMMENDED for planting by IFAS. Furthermore, the Florida Exotic Pest Plant Council lists guava as a Category I invasive plant, meaning that it is "altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives."

The current research in Vietnam represents only a single unreplicated test with very small trees and it remains to be seen whether similar results would be obtained under other conditions or as the trees matured. In addition, interplanting of any crop with citrus presents many problems in terms of harvesting practices, equipment movement, potential competition and shading, and may require modification of irrigation and fertilization practices.

## **REDUCED YIELD**

Planting guava in a 1:1 ratio with citrus would reduce yield by 50 percent due to the loss of acreage, although other planting arrangements that are less "invasive" are possible. The guava trees would also produce

copious amounts of fruit for which there is currently only a small market. At the same time, grove management costs would probably remain the same or possibly increase due to new pest and disease pressures. Guava is not cold tolerant and may not survive in the northern citrus areas. Even if it proved highly effective, cultural practices would have to be greatly modified to accommodate the changes.

Despite the negative aspects, these

observations on guava may yield some new data for control of Asian citrus psyllids. Future research to determine if there are chemical compounds in guava that may affect psyllids could help us better understand psyllid behavior and whether or not such compounds can be formulated for use in psyllid management programs. Also, other Myrtaceous species related to guava might be studied as to their potential effects on

psyllids as well.

However, guava is an invasive, exotic species, and until more evidence supports the use of guava to reduce psyllid populations and greening spread, IFAS is not recommending interplanting citrus with guava.

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