

PEST ALERT

FDACS-P-02121

Pest Alert created August 2019

Florida Department of Agriculture and Consumer Services Division of Plant Industry

Rose rosette virus mite, *Phyllocoptes fructiphilus* Keifer

Samuel Bolton, Ph.D., Kishore K. Dey, Ph.D., John McVay, Ph.D.; Bureau of Entomology, Nematology and Plant Pathology
DPIHelpline@FreshFromFlorida.com or 1-888-397-1517

Austin N. Fife, Xavier Martini, Ph.D.; Department of Entomology and Nematology, University of Florida

INTRODUCTION

The mite *Phyllocoptes fructiphilus* is the vector of *Rose rosette virus* (RRV). This eriophyoid mite appears to live exclusively on roses and is known to feed on a variety of rose species. It is widely distributed across the United States, including Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Nebraska, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee, Utah and West Virginia. In July 2019 it was reported for the first time in Florida (Leon County).

GENERAL BIOLOGY

Phyllocoptes fructiphilus spreads via wind dispersal between plants, although phoretic dispersal via insects is also possible. People can also translocate them if they become attached to clothing or horticultural equipment. The mites can survive up to five days or more without a host. After overwintering under bud scales or in other tiny harborages on the plant, the mites lay eggs on shoots in the spring. Eggs can take seven to 10 days to develop into adults, depending on ambient temperature. The adults can live up to 30 days, and can lay an egg per day. Therefore, they have the potential to build up to large numbers very quickly.

SYMPTOMS AND DAMAGE

The mites can only be observed with a good quality loupe or microscope; they are too small to see with the naked eye (less than a fifth of a millimeter long and less than a twentieth of a millimeter wide). They are usually found on fruits, petiole bases and apical shoots. Damage is normally from the transmission of RRV rather than as a direct result of feeding. *Phyllocoptes fructiphilus* can acquire the virus in a period of five days and can transmit in less than an hour after feeding. Susceptible roses develop symptoms 30 to 146 days after infection. Symptoms of RRV vary widely among rose cultivars, but typically include a form of witches' broom (excessive new growth of shoots), excessive thorniness, defoliation and death of the plant. New growth is also typically reddish in color and the red pigmentation persists for the life of the foliage. The new growth from the witches' broom is beneficial to the mite, resulting in larger mite densities than would otherwise exist. The invasive weed *Rosa multiflora* is the most susceptible and widespread host, and serves as reservoirs for the virus and the vector.

COLLECTION

If the presence of either *Phyllocoptes fructiphilus* or RRV is suspected, the Division of Plant Industry should be contacted (DPIHelpline@FreshFromFlorida.com or 1-888-397-1517). Please collect the damaged or infested shoots and fruits and place them into a sealable polyethylene bag. Place paper towels into the bag (to reduce mold) and then carefully seal the bag before sending it.



Florida Department of Agriculture and Consumer Services
Nicole "Nikki" Fried, Commissioner



Figure 1. (1a) Reddish color and (1b) witches' broom (distorted growth) characterisitic of RRV. Photos by Austin Fife, University of Florida