

BREVIPALPUS MITES FOUND ON FLORIDA CITRUS<sup>1</sup>  
(ACARINA:TENUIPALPIDAE)

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INTRODUCTION: Brevipalpus californicus (Banks), B. obovatus Donnadieu, and B. phoenicis Geijskes are found on Florida citrus. These mites belong to the family Tenuipalpidae and are called false spider mites (they do not spin a web) or flat mites. Their economic importance varies with the species, and they are all found on a wide host range.

DISTRIBUTION: Brevipalpus californicus is known from Algeria, Australia, Ceylon, Egypt, France, Israel, Malaya, Natal, Southern Rhodesia, Transvaal, and the United States. In the United States it is found in California, Florida, Hawaii, Kansas, Maryland, and Texas. In Florida it is found throughout the peninsula.

Brevipalpus phoenicis is known from Argentina, Cuba, Egypt, Holland, India, Kenya, Malaya, Mauritius, Spain, Taiwan, Tanganyika, Trinidad, and the United States. In the United States it is found in California, District of Columbia, Florida, and Hawaii. It is found throughout the peninsula in Florida.

Brevipalpus obovatus is known from Argentina, Australia, Canada, Ceylon, Cyprus, Egypt, France, Israel, Japan, Kenya, New Zealand, Spain, United States, and Venezuela. In the United States it is found in Alabama, California, Florida, Hawaii, Kansas, Louisiana, Maine, Maryland, Mississippi, Missouri, New Jersey, North Carolina, Ohio, Oregon, and South Carolina. It is found throughout the peninsula in Florida.

HOSTS: Brevipalpus californicus is recorded from approximately 50 hosts. Some of the more common hosts in Florida are Citrus spp.; red maple, Acer rubrum L.; Ligustrum sp.; croton, Codiaeum variegatum Blume; azalea, Rhododendron sp.; and Spanish needle, Bidens pilosa L.

Brevipalpus phoenicis is recorded from more than 60 hosts. Some of the more common hosts in Florida are Citrus spp.; Ligustrum sp.; palms; orchids; Gardenia sp.; Hibiscus sp.; Viburnum sp.; pittosporum, Pittosporum tobira Ait.; ivy, Hedera sp.; azalea, Rhododendron sp.; and holly, Ilex sp.

Brevipalpus obovatus is recorded from more than 50 hosts. Some of the more common hosts in Florida are silk oak, Grevillea robusta Cunningham; azalea, Rhododendron sp.; ligustrum, Ligustrum sinensis Loureiro; and pittosporum, Pittosporum tobira Ait. It has been found on Florida citrus only 11 times.

ECONOMIC IMPORTANCE: Brevipalpus californicus is the incitant of leprosis, sometimes referred to as "Florida scaly bark or nailhead rust." Leprosis was first observed in Florida in the 1860s. It spread from Pinellas County to 16 other counties by 1925. It declined in the late 1920s. Today it is not considered a problem of commercial citrus, but it is found in a few unsprayed groves. The decline of leprosis has been attributed to the increased use of sulfur in the late 1920s; however, there is no direct evidence for this claim. Leprosis is found on twigs, branches, and the rind of fruit. The mite is found on limbs, twigs, leaves, and fruit, and it can be found on citrus without any evidence of leprosis.

Brevipalpus phoenicis is the most common false spider mite on Florida citrus. It infests the fruit, leaves, twigs, and limbs. There is some question as to the type of damage it causes, but according to Muma (1961), no symptoms have been definitely demonstrated.

Brevipalpus obovatus until recently had not been found on Florida citrus. There are no known symptoms on citrus in Florida; however, it is the species responsible for leprosis in South America.

SURVEY AND DETECTION: Look for scaly bark or nailhead rust on fruit and leaves. It is visible on both sides of leaves. Symptoms are more prevalent in the spring, summer and fall.

CONTROLS: Contact your County Extension Agent for controls of these mites.

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DESCRIPTION: Muma (1961) referred to B. californicus as the red flat mite that measures 260 microns. The red and black flat mite, B. phoenicis, is slightly smaller than the red flat mite. Morishita (1954) stated that B. obovatus is orange-red in the immature stages, and the adult varies from light orange to dark red with some dark pigment that is correlated with the amount of feeding. It is about the size of B. phoenicis. Eggs of all 3 species are elliptical and red to orange-red. The adult female (fig. 1) is pear-shaped, and the 3 species can be separated by the following key.

Key to adult females on Florida citrus

1. Hysterosoma with 5 dorsolateral setae . . . . . 2  
    Hysterosoma with 6 dorsolateral setae . . . . . B. californicus
2. Tarsus II with a single sensory rod (fig. 2). . . . . B. obovatus  
    Tarsus II with 2 sensory rods (fig. 3). . . . . B. phoenicis

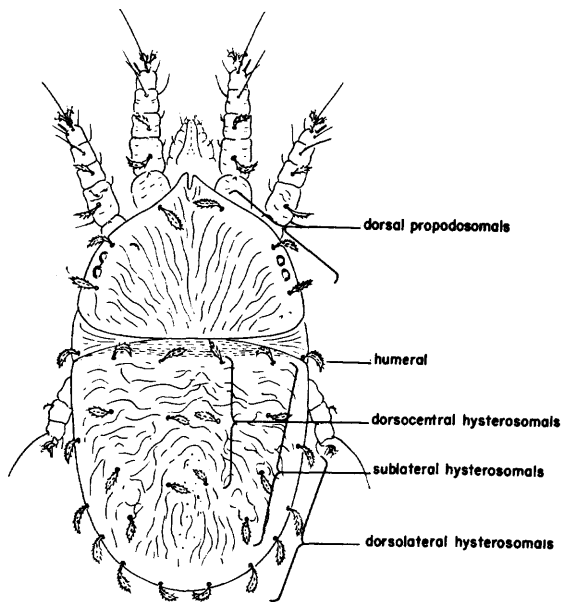


Fig. 1. A typical Brevipalpus female. (After Baker)



Fig. 2. A single sensory rod.



Fig. 3. Two sensory rods.

LITERATURE CITED:

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