

Susceptibility of *Psidium guajava* Selections to Injury by *Cephaleuros* sp.

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ABSTRACT

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Cephaleuros sp. is a pathogenic green alga that severely injures foliage of guava, *Psidium guajava* L. Five guava selections were compared for susceptibility to this algal disease. The cultivars Patillo and Blitch had low disease incidence, Ruby × Supreme 6-29 was moderately infected, and Webber × Supreme and Ruby × Supreme 10-30 had a very high incidence of disease.

A disease caused by a pathogenic green alga, *Cephaleuros* sp., has been seen in

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Florida for at least 50 years on several tropical fruits (2,3), including guava, *Psidium guajava* L. (1,4).

Minute, shallow, brown lesions appear on guava leaves, and as the disease progresses, the lesions enlarge, develop nearly black margins and extend into the

mesophyll. Guava foliar symptoms can be severe and fruits are blemished (Fig. 1). Although the alga's zoosporangia arise from thalli on adaxial surfaces of many host species, lesions on guava frequently extend through the entire lamina, and sporangia most often occur on the abaxial leaf surface (Fig. 2).

MATERIALS AND METHODS

Observations were recorded monthly in a 10-yr-old grove of five guava selections, which included Ruby × Supreme 6-29, Ruby × Supreme 10-30, Webber × Supreme, Blitch, and Patillo. The Ruby × Supreme selections are sweet, low-acid guavas that are sold for fresh consumption and for processing. The Patillo fruit is moderately acid and Blitch is highly acid; both are suitable primarily for processing. Single-tree plots of each selection were randomized in 15 blocks.

Trees were examined monthly from August 1979 to January 1980 and rated for disease. Trees with 0–20% of their leaves diseased were given a rating of 1; 20–40%, 3; 40–60%, 5; 60–80%, 7; and 80–100%, 9. Disease incidence ratings were compared by analysis of variance and Duncan's multiple range test.

RESULTS

Differences of algal disease incidence were highly significant among the cultivars in late December and early January (Table 1). Cultivars Patillo and Blitch had low disease incidence; Webber × Supreme and Ruby × Supreme 10-30 showed very high incidence and Ruby × Supreme 6-29 moderate incidence.

The pathogen sporulated readily during the period of highest rainfall (July

Table 1. Algal (*Cephaleuros* sp.) disease incidence of guava selections,^a August to January

Selection	Aug.	Early Sept.	Late Sept.	Oct.	Nov.	Dec.–Jan.
Patillo	4.3 a	4.3 a	7.1 a	6.5 ab	3.6 a	3.5 a
Blitch	6.0 b	6.8 b	5.5 a	6.0 a	5.2 ab	5.5 b
Ruby × Supreme 6-29	6.8 bc	7.6 bc	5.7 a	6.5 ab	6.7 b	6.9 c
Ruby × Supreme 10-30	7.3 c	8.5 c	8.3 b	10.0 c	9.7 c	10.0 d
Webber × Supreme	7.7 c	8.4 c	6.4 ab	8.4 bc	9.2 c	9.5 d

^aAverage rating of 15 replications. Ratings followed by the same letter were not significantly different at the 1% level.



Fig. 1. Guava foliage damaged by *Cephaleuros* sp., with blemished fruit.

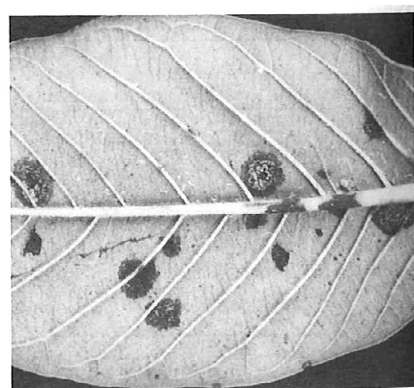


Fig. 2. *Cephaleuros* usually sporulates on the abaxial surface of a leaf.

through September), and disease incidence was greatest during September. Flushes of new foliage during late summer, fall, and winter displayed no symptoms. Normal leaf fall occurs during the dry, cool winter months; therefore, the percentage of diseased leaves on the trees varied as healthy foliage developed and old leaves fell. For this reason, little seasonal change of disease incidence was demonstrated by the data. The incidence on Patillo peaked during late September and October, and Ruby × Supreme 10-30 and Webber × Supreme had more diseased leaves in late fall and winter. The

December-January observation most accurately demonstrated relative susceptibility of the selections and its statistical analysis detected the largest F-value.

DISCUSSION

Very little information is available regarding the relative susceptibility of cultivars and selections of tropical fruits to damage by this pathogenic alga. In guavas, this may be explained by the fact that thresholds for fruit damage are high for produce destined for processing and most guavas for fresh-market consumption are marketed in developing countries

where superficial fruit injury is considered unimportant. The disease can severely diminish photosynthetic leaf surface, however, and apparently can cause premature defoliation. Such damage most likely affects fruit yield.

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