



**Evaluation of Selected Citrus spp. and Relatives for Susceptibility to Root Injury  
by *Diaprepes abbreviatus* Larvae (Coleoptera: Curculionidae)**

J. B. Beavers; D. J. Hutchison

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EVALUATION OF SELECTED *CITRUS* SPP. AND  
RELATIVES FOR SUSCEPTIBILITY TO ROOT INJURY  
BY *DIAPREPES ABBREVIATUS* LARVAE  
(COLEOPTERA: CURCULIONIDAE)

J. B. BEAVERS AND D. J. HUTCHISON  
USDA, ARS, Horticultural Research Laboratory  
Orlando, FL 32803, U.S.A.

The 5 major citrus rootstocks grown in Florida, rough lemon (*Citrus limon* (L.) Burm. f.), sour orange (*C. aurantium* L.), Carrizo citrange (*C. sinensis* (L.) Osb. X *Poncirus trifoliata* (L.) Raf.), Milam lemon (*C. limon* hybrid), and Cleopatra mandarin (*C. reticulata* Blanco), indicated susceptibility to *D. abbreviatus* larval feeding in field tests (Norman et al. 1974). Nine of 65 ornamental-nursery and 1 of 6 native-plant species were found to be susceptible to feeding injury in a screenhouse study (Schroeder et al. 1979), suggesting that larvae are more host specific than previously indicated. Selected *Citrus* spp., citrus relatives, and the 5 major Florida citrus rootstocks were evaluated for susceptibility to *D. abbreviatus* larval feeding in a screenhouse study, and results are reported in this paper.

The citrus rootstock seedling selections utilized in this study are shown in Table 1. Plants (10-96 cm tall when planted) were grown in individual 15-cm-diam containers in soil medium consisting of 1 Florida peat:1 masonry sand and maintained on raised screenhouse benches for ca. 1 year. Neonate larvae obtained from eggs of field-collected adults were placed on the soil surface of 10 containers at a rate of 100 larvae/plant (ca. equal to 1 egg mass). Plants were removed from the containers after 8 weeks, the roots washed and examined for larval feeding injury, and the number of recovered larvae were recorded. A numerical classification of root damage was made on a basis of 1-5, where severe injury (epidermal layer of roots completely devoured to soil surface) = 1, and no injury (no visible evidence of larval feeding injury) = 5.

Twenty-four of the 25 selections tested were found to be highly susceptible to root injury caused by feeding of *D. abbreviatus* larvae. One selection, a hybrid of *Poncirus trifoliata* X *C. grandis* (L.) Osb., showed the least amount of root injury with an average rating of 3.4 (Table 1). All other selections, with the exception of the Large Flower trifoliolate orange (*P. trifoliata*) with a root injury rating of 2.2, had severe ratings of less than 2.0. With the possible exception of the *P. trifoliata* X *C. grandis* hybrid, all plants in this study are highly susceptible to *D. abbreviatus* injury, indicating that citrus is a primary host for this insect pest in Florida.

TABLE 1. ROOT DAMAGE OF *Citrus* SPECIES AND RELATIVES BY *Diaprepes abbreviatus* LARVAE.

Selections	I.D. <sup>a</sup>	Root injury <sup>b</sup> mean/10 replicates	Larvae recovered mean/10 replicates
<i>Citrus aurantium</i> L.	76-9	1.1	5
<i>C. limon</i> (L.) Burm. f.			
Columbia sweet lime	78-258	1.0	3
Milam lemon	76-278	1.2	14
Rough lemon	76-644	1.0	4
Vangasay lemon	77-460	1.0	7
Volkamer lemon	76-548	1.2	22
<i>C. macrophylla</i> Wester	76-646	1.0	3
<i>C. reticulata</i> Blanco			
Cleopatra	76-522	1.5	7
Miray	78-260	1.0	4
<i>C. reticulata</i> var. <i>austera</i> Swing.			
Rangpur lime	78-259	1.0	3
<i>C. sinensis</i> (L.) Osb.			
Lab sweet orange	76-647	1.9	7
<i>Microcitrus australasica</i> (F. Muell.) Swing.			
Australian finger lime	76-586	1.0	6
Australian finger lime	76-587	1.0	5
<i>M.</i> hybrids			
Sydney hybrid	76-482	1.0	4
Sydney hybrid	77-427	1.0	6
<i>Poncirus trifoliata</i> (L.) Raf.			
Large Flower trifoliolate orange	76-448	2.2	10
<i>P. trifoliata</i> hybrids			
<i>C. grandis</i> (L.) Osb. X <i>P. trifoliata</i>	76-490	3.4	7
<i>C. limon</i> X <i>P. trifoliata</i>	78-261	1.0	4
<i>C. paradisi</i> Macf. X <i>P. trifoliata</i>			
Swingle citrumelo	76-480	1.7	9
<i>C. reticulata</i> X <i>P. trifoliata</i>	76-239	1.2	6
<i>C. reticulata</i> var. <i>austera</i> X ( <i>C. sinensis</i> X <i>P. trifoliata</i> )	76-492	1.0	5
<i>C. sinensis</i> X <i>P. trifoliata</i>			
Carrizo citrange	76-508	1.0	3
	76-428	1.1	8
Troyer citrange	76-648	1.0	4
<i>Severinia buxifolia</i> (Poir.) Ten.	78-257	1.0	5

<sup>a</sup>USDA accession number at Orlando, Florida.<sup>b</sup>1 = serious injury; 5 = no injury.

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