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Title

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Permalink

<https://escholarship.org/uc/item/9vd8v90r>

Journal

International Organization of Citrus Virologists Conference Proceedings
(1957-2010), 4(4)

ISSN

2313-5123

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Publication Date

1968

DOI

10.5070/C59vd8v90r

Peer reviewed

A Special Form of Stem Pitting in Sardinian Citrus Trees

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WIDESPREAD INSPECTION of citrus orchards in Sardinia over the last three years has revealed the presence of a disorder causing stem pitting on sweet orange [*Citrus sinensis* (L.) Osb.], sour orange (*C. aurantium* L.), and tangerine (*C. reticulata* Blanco). These pits suggest the possibility of tristeza virus infection, but since they occur on tristeza-tolerant varieties of sweet orange and mandarin, tristeza is probably not the cause. The same situation is true of cachexia-xyloporosis virus in that tolerant varieties of citrus show stem pitting. This type of stem pitting also occurs on Orlando tangelo (*C. reticulata* Blanco x *C. paradisi* Macf.), but the pitting is much different from that caused by cachexia-xyloporosis virus.

The pits of this disorder are characteristically large depressions, up to 4 or 5 cm long by 2 to 3 cm wide. The outer side of the bark appears smooth, but when the bark is removed elongated pegs or crests of bark are visible. These project into the wood and seem to be a fundamental characteristic of this disorder (Fig. 1).

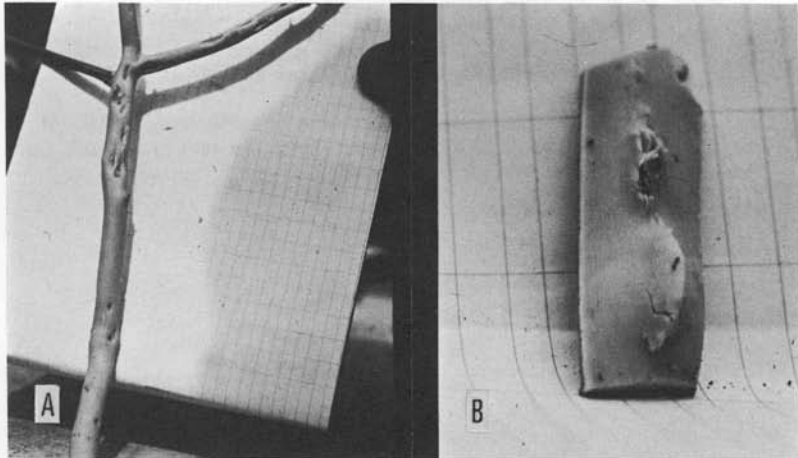


FIGURE 1. Symptoms of the special type of stem pitting. A. Tarocco branch with bark removed. B. Cambial face of bark from Washington navel showing ridges or crests.

A symptom regularly associated with this type of stem pitting is an oak-leaf pattern on the leaves. However, when stem pitting is mild, the oak-leaf pattern is also difficult to find. Of course, oak-leaf patterns are a well-recognized symptom of psorosis, but the regular association of this leaf symptom with this unusual type of stem pitting should be noted.

In 1959, Reichert (1) reported xyloporosis on sweet orange, sour orange, and other varieties that are known to be tolerant to that virus. Scaramuzzi (2), noting this peculiar type of stem pitting on sour orange, suggested that in Italy, a strain of sour orange might be in use that is different from the xyloporosis-tolerant strain used elsewhere. Vogel and Bové (3) exclude the possibility of concave gum or blind pocket forms of psorosis by pointing out that in neither one are pits formed at the bottom of the depressions.

Over 2,000 citrus trees in Sardinia were examined for this type of pitting and the percentage of trees affected is as follows: 25 per cent of 720 Havana sweet orange trees, 27 per cent of 202 common orange trees, 16 per cent of 731 Ovale calabrese trees, 27 per cent of 566 Tarocco trees, 12 per cent of 46 Vanilla variety trees, 44 per cent of 23 Sanguinello trees, and 10 per cent of 106 Clementine mandarin trees.

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