

DICTYOSPERUM SCALE IN CALIFORNIA

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Although *Dictyospermum* Scale was reported in California as early as 1909 it was not until 1924 that there was any degree of popular interest in the control of this pest. During the 1924 season, however, shipments of avocados from Florida were found to be carrying some *Dictyospermum* Scale and reports issued at that time drew the attention and interest of the avocado growers of California to the fact that this scale might become established on avocados in Southern California and prove to be a pest of some importance.

A survey of the nurseries and other likely places where this scale might be found was made by Mr. R. D. Hartman, formerly of this department, during the winter of 1924, and several new infestations were found as a result of his inspections. Every infestation, however, was under the shelter of some protection such as lath or glass and in no case has *Dictyospermum* Scale been found to exist in California under outside conditions, although repeated inspections have been made in the warmer portions of the state in avocado groves, ornamental plantings and other places where the scale might occur.

Representatives of the State Department of Agriculture have been carefully watching the situation and have made repeated examinations of nurseries and other locations where the scale occurs, and with the co-operation of the horticultural commissioners in affected counties and the owners of infested plants, have done much to control the scale. In some instances where only a few plants were found to be infested, these were destroyed. In other cases where more plants were involved and destruction of the stock was not practicable, control measures have been put into effect, the usual method being to give repeated applications of a light summer oil to obtain effective control and eradication wherever possible.

During the last year a rather complete survey was made of nurseries through the state, and as a result several new infestations of *Dictyospermum* Scale were located.

From the completion of the first survey until the present time, thirty separate infestations have been listed in various parts of the state in nurseries, greenhouses and parks. Exactly half of these are in Los Angeles County and the remainder are distributed as follows: Alameda County, five; Sacramento County, two; San Francisco County, three; San Mateo County, one; Santa Clara County, one; Santa Cruz County, one; Stanislaus County, one. In several instances these infestations consist of but one or two plants.

Dictyospermum Scale is known to exist in but a single county in Southern California (that of Los Angeles), and the efforts of Mr. Ryan, Horticultural Commissioner, and Mr. Gorton, his deputy, have been very effective in checking the spread of the scale as it exists there and in working toward its eradication. Mr. Gorton, in a report dated April 26,

1927, lists five former infestations as being apparently clean when inspected this spring. All other known infestations are reported to be rather light, and in most cases control appeared to be effective at the time of inspection.

In the northern part of the state there have been several infestations eradicated or eliminated from the nurseries concerned, and in all but one or two cases the scale was under effective control at the time of inspection during April, 1927.

Considering the state as a whole, the present status of the Dictyospermum situation is as follows:

Infestations eradicated..	4
Apparently clean	8
Effective control	12
Unsatisfactory control ..	4

There are, therefore, twelve former infestations from which the scale has been entirely eliminated as far as inspection this spring could determine. A recheck will be needed in several cases before it will be considered that eradication has been attained.

In all cases owners of infested stock have been asked to treat their stock very thoroughly and to eliminate the scale as rapidly as possible, with every reasonable precaution being taken to prevent its spread.

In examining stock for Dictyospermum Scale it is apparent that the spread of this insect is not rapid under existing conditions. In only a few instances has the scale been found in California on any plants except Kentia palm and the rubber plant, *Ficus elastic a*. There seems to be no report of its occurrence on more than a single host plant other than the above mentioned species, except possibly on orchids. Single plants of Dictyospermum palm, avocado, Cycas and Pandanus have been found infested, but during the past two years no Dictyospermum Scale has been found on any plants other than Kentia and Ficus, except in the case of one Pandanus plant in the conservatory at Golden Gate Park, San Francisco.

In many cases, plants known to be hosts of this scale in other localities have been found near stock infested with Dictyospermum Scale with leaves and branches sometimes intermingling, without any apparent transfer of the scale from the infested plants to the host plants of other species. It seems, therefore, that this scale, which appears to spread but very slowly even under greenhouse and nursery conditions, will be very unlikely to reach field grown stock, and it is probable that it would have considerable difficulty in establishing itself under outside conditions, except in the most sheltered and protected localities.

Reports of host plants affected in California include but seven species as against fifty-six host plants reported as carrying Dictyospermum Scale in Florida. (Quarterly Bulletin, State Plant Board of Florida, Vol. VII, No. 4.) The close relationship of this scale to the California Red Scale, however, indicates that these apparent characteristics may be somewhat deceiving and consequently very careful watch of the situation is being maintained. It is expected that by the end of another year's effort, a substantial number of the present infestations may be eliminated and that extended effort over a period of years may bring about the complete elimination of Dictyospermum Scale from California.