

MODERATOR STOUTEMYER: I would say from this symposium thus far, you can see that we have here what the extension people and communication experts call "resource" people. If we don't have time this afternoon, you come primed for the Question Box period tonight, because I think you can pick their brains and go back home wiser by doing so.

We have one additional presentation on this program which will be short. We're fortunate in having a member of the Staff of the Plant Pathology Department of UCLA who participated in the developmental work on the UC System of soil mixes; in fact, he was, I understand, brought there specifically to participate in that work. He's going to tell us something about "cleaning up" stock of Hibbertia. I've been used to seeing Hibbertias around the coastal area where I live, and usually they're rather sick looking things. I've always blamed it on thrips, but now I think I was mistaken - more than thrips was wrong with them. Now we'll hear this very interesting story from Mr. Phil Chandler of Plant Pathology at UCLA.

The Cucumber Mosaic Disease in Hibbertia Volubilis

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In California, the Guinea Gold Vine, Hibbertia volubilis, is affected with mosaic symptoms so commonly that not a single healthy plant has been observed either in home plantings or nurseries. The Guinea Gold Vine is native to Queensland and New South Wales, Australia, where it grows as a prostrate or twining shrub with solitary yellow flowers. In California it is grown primarily in the cool, coastal areas where it fails to produce seeds; thus vegetative propagation is necessary and is suspected as the major factor responsible for the high incidence of mosaic-affected plants.

Recent studies at UCLA indicate that the disease is caused by strains of the cucumber mosaic virus (CMV), and that the widespread occurrence of the disease is probably due to propagation of diseased cuttings from infected plants. Shoots free of CMV were rather readily produced by growing diseased plants at temperatures averaging 90°F for 3 to 12 weeks. Symptom-free shoots were removed from diseased plants, and were proved free of CMV.

Symptoms. Mosaic-affected Hibbertia plants develop mild to severe leaf mosaic, leaf deformation, stunting, and usually, considerable leaf chlorosis or yellowing. Some strains of the virus cause a mild, greenish-yellow mosaic, some a bright yellow mosaic, and still others a strong mosaic mottle consisting of islands of dark green tissue, and large areas of greenish-yellow. All strains occasionally

produce oak leaf and ring patterns on old leaves. Leaf deformations occur as a change in shape, margins, and in the surface, which usually became rough and irregular due to raised veins and sunken interveinal tissue. Flower set and flower size also are reduced. Symptoms are severe, persistent, and completely systemic during the cooler months of the year; during the warmer months, symptoms tend to be mild and usually incompletely systemic, particularly following periods of rapid growth. Field infected plants also commonly suffer from mineral deficiency resulting in a marked chlorosis and yellowing of the areas between the veins.

Control. Since CMV is transmitted by aphids, and occurs commonly in numerous plants in the field, it is not likely that healthy plants will remain permanently healthy in outside plantings. These studies indicate, however, that disease-free shoots can be readily produced by growing diseased plants at high temperatures, thereby enabling growers to propagate from disease-free mother-stocks, and to produce and sell disease-free plants. Since the appearance, vigor, and growth rate of healthy plants is much greater than diseased plants, customer appeal and salability is greatly increased.

Mother stock plants should be grown in a greenhouse section free of aphids or under aphid-proof cages. If infection re-occurs virus-free plants may be obtained by growing mosaic-affected plants in the greenhouse at an average air temperature of 90°F. After 4 to 6 weeks, symptom-free tip-cuttings may be taken and the cuttings rooted under mist. Plants that are free of mosaic symptoms at 55-75°F may be retained as mother stock plants.

THURSDAY EVENING SESSION

October 26, 1961

This session - the Plant Propagation Question Box - convened at 7:30 p.m. with Mr. Percy Everett, Rancho Santa Ana Botanic Garden, Claremont, California, as the moderator.

MR. DON HARTMAN: Before we get started with the Question Box, I would like to introduce a visitor with us who is a distinguished individual. He has been introduced once already, but I'd like to re-introduce him and ask a few words from the gentleman - Mr. Louie Vanderbrook from Hartford, Connecticut, who is the representative from the Eastern group. Louie was born and raised in Hartford and operated a nursery that he took over from his father and enlarged it, if my memory doesn't fail me, from around 35 or 40 acres up to around 120 acres. Louie, would you like to say a few words, please.

MR. LOUIS VANDERBROOK: Ladies and gentlemen. I can't say that I'm not forewarned. Your President, Don Hartman, asked me yesterday if I would say a few words before this meeting. I have been very much impressed with the group here, the size of the group of people with your keen and intense interest in this subject. You are only a year and a half or two years old. I've seen ten years of this in the East because