Apricots and Plums as Hosts of Western X-Disease[1]

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Stoddard (*3*) reported that peach, *Prunus persica* Batch., nectarine, *P. persica* var. *nucipersica* Schneid., and chokecherry, *P. virginiana* L., are natural carriers of the X-disease in eastern United States. He was able to transmit the disease by budding to the sand cherry, *P. besseyi* Bailey, Chinese bush cherry, *P. japonica* Thung., wild goose plum, *P. hortulana* Bailey, and almond, *P. communis* Arcang. He considered the wild black cherry, *P. serotina* Ehrh., and the beach plum, *P. maritima* Marsh, immune and reported no evident symptoms following inoculation into wild plum, *P. americana* Marsh. Palmiter and Parker (*2*) found diseased sour cherries, *P. cerasus* L., close to peaches and chokecherries affected with X-disease. They reported that "inoculations from affected sour cherries to peach resulted in typical peach-disease symptoms." Bodine (*1*) reported an estimated 100 peach trees infected with "western X virus disease" in western Colorado in 1944, and that no chokecherries were found in the immediate vicinity of the peach growing section. His survey of the nearest area where chokecherries were found revealed only healthy plants.

TABLE 1

RESULTS OF INOCULATION OF ELBERTA PEACH TREES WITH BUDS FROM PREVIOUSLY INOCULATED APRICOT AND PLUM TREES

Source of inoculum	No. of peach trees inoculated	Healthy	Diseased	
Apricots				
Jones	4	1	3	
Early Horn (1)	5	1	4	
Early Horn (2)	5	4	1	
Reece (local seedling variety)	4	4	0	
Plums				
Big Mack (1)	5	3	2	
Big Mack (2)	5	0	4	(1 winter killed)
Duarte-Satsuma hybrid (1)	5	3	2	
Duarte-Satsuma hybrid (2)	5	2	3	
Climax	5	4	0	(1 winter killed)
Red Late Hardy	4	4	0	
Omaha	5	5	0	
Hungarian prune	5	5	0	

Since X-disease is still present and spreading in Colorado peach trees and the situation remains unchanged as to the proximity of chokecherry trees to the peach area, other possible hosts of the X-disease were thought to exist. To test this hypothesis, buds were taken in the summer of 1946 from peach trees having the western X-disease and placed into nursery trees of several varieties of apricots growing on apricot seedling root stock and also into plums growing on peach root stock. In 1947, buds were taken from these 1946–inoculated trees and placed into small Elberta peach trees. Western X-disease symptoms expressed in the peach in 1948 showed that two varieties of each of the inoculated apricot and plum were carrying the western X-disease virus and none of the 40 uninoculated check trees was affected.

The results in Table 1 show that the Jones and Early Horn varieties of apricot and the Big Mack and Duarte-Satsuma plum can carry the western X-disease virus. All previously inoculated apricot and plum trees were reinoculated from peach in 1947 and the Climax plum now shows a premature yellowing and bronzing of leaves which suggest its possible infection. Inoculations from this tree, as well as other trees from which transmission was not obtained in 1947, were again made on Elberta peach in 1948. Symptoms found in other hosts require further study and will be reported later.

[1] Published with the approval of the Director, Colorado Agricultural Experiment Station, as Scientific Paper No. 287.

References

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Aureomycin, a New Antibiotic[1]

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A new antibiotic principle active against certain viruses and rickettsia (*6*) and against both Gram-positive and Gram-negative microorganisms (*1, 2, 5*) has been isolated from the substrate of *Streptomyces aureofaciens* (*4*). The antibiotic has been named aureomycin from the yellow color of the parent actinomycete and the golden color of the crystalline antibiotic.

Aureomycin is a weakly basic compound which contains both nitrogen and nonionic chlorine. Aureomycin when treated with alcoholic ferric chloride gives a greenish-brown color by reflected light and reddish color by transmitted light. The crystalline free base has the following properties: m.p., 168–169° C (uncorr.); $[\alpha]_D^{23°}$, −275.0 (methanol); solubility in water, 0.5–0.6 mg/ml at 25° C; very soluble in the Cellosolves, dioxane, and Carbitol; slightly soluble in methanol, ethanol, butanol, acetone, ethyl acetate, and benzene; insoluble in ether and petroleum ether; very soluble in aqueous solution above pH

[1] This work was initiated and directed by the late Dr. Y. SubbaRow, and by Dr. J. H. Williams.