

Leaf-spot of Black Cherry

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In order to determine if initial penetration of leaf tissue on *Prunus serotina* Ehrh. occurred through the upper or lower leaf-surface, a conidial spore suspension (the *Cylindrosporium* stage) was secured by scraping spores from diseased leaves. The solution was then applied by means of a camel's hair brush to the upper epidermis of fifteen healthy leaves and to the under surface of fifteen similar leaves. Young nursery seedlings of current season's growth were utilized, and leaves of corresponding size and age were used on the various plants.

Following an inoculation period of fifteen days the treated leaves were removed from the plants and the lesions of infection counted. Upper leaf-surface inoculations yielded an average of 18.2 lesions per leaf, while upon those of under-surface treatment there were 85.3 lesions per leaf. Furthermore, at the end of this period many of the lesions on the under leaf-surface were in a conidial fruiting stage, while those of the other type were much less advanced and showed little fruiting. A duplication of this experiment gave similar results. It follows, therefore, that in applying sprays for the control of this disease, caused by *Coccomyces* sp., particular care should be taken to secure good coverage of the lower leaf-surface with a fine mist or fog spray.

Little or no attention has been given to determine a suitable spray solution for protecting nursery stock of *P. serotina* from infection by this fungus. The use of this tree species in reforestation warranted



Fig. 1. Center foreground, plot receiving lime sulphur plus ferrous sulphate; control area in center background. Plot to the right received Bordeaux mixture 2-3-50.

experimental work in this direction. It was found that lime sulfur 1-50 plus one and one-fourth pounds of ferrous sulphate was entirely impractical for use on seedling plants. Despite the previous recommendation of this solution¹ all of the plants in this experimental plot were either severely stunted or killed outright (Fig. 1). Two sprays which gave favorable results, using the criteria of foliage protection and freedom from unfavorable affects on plant growth, were copper phosphate and Bordeaux mixture.

The copper phosphate spray was composed of copper phosphate, two pounds, hydrated lime, four pounds, bentonite, two pounds, and water, fifty gallons. (With hand operated sprayers some difficulty is encountered in keeping the solution sufficiently agitated to yield a uniform spray.) The Bordeaux was a standard 2-3-50 formula. Neither of the above sprays entirely prevented leaf infection although seven applications were made at weekly intervals. However, infection in neither case was sufficient to cause premature leaf-fall during the actively growing season for the plant. From the various solutions tested, including several commercial sulfurs, the copper compounds indicate that with further research a successful spray can be developed for the control of leaf-spot on black cherry.

¹Hester, L. R. and H. H. Whetzel. 1924. Manual of fruit diseases. p. 176. Macmillan. New York.