THE CROWN GALL ORGANISM IN NOVA SCOTIA

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Crown gall, caused by Agrobacterium tumefaciens (E. F. Sm. & Towns.) Conn, has been found on a number of hosts in Nova Scotia. The Kentville herbarium contains specimens collected in this province on apple (KP-925), Lombadry poplar (KP-923), willow (KP-1456), rose (KP-1260), rhubarb (KP-263), dahlia (KP-341), English walnut (KP-1640), rutabaga (KP-1696), marigold (KP-991), blackberry (KP-77), raspberry (KP-1788) and rhododendron (a seedling of a cross between Rhododendron smirnowii Trautv. x R. catawbiense Michx. var. Dr. Dresselhuys), (KP-2403). The latter specimen was collected in August, 1961 and is believed to be the first report of crown gall on this host in North America. It has also been reported from Nova Scotia on highbush blueberry[2].

In this district crown gall, although present in small amounts on a number of susceptible hosts, has not been considered to be of economic importance. Certified red raspberry canes from a 5-year-old plantation in light, sandy loam soil, sold in the spring of 1961 to propagating nurseries, developed crown gall on 100 per cent of the canes set. In the propagating nurseries several canes showing unthrifty growth had well developed galls and incipient galls were found on all canes examined. A subsequent examination of the original 5-year-old plantation showed that all plants were infected with crown gall. The varieties Carnival, Early Red, Newburg, Trent, Viking and Willamette were equally affected. This disease has eliminated the sources of certified raspberry plants in Nova Scotia until new disease-free plantings can be established,

In the spring of 1961, after digging the certified canes from the 5-year-old plantation, the remaining canes were mowed off, removed, and destroyed. Irrigation from a surface pond in the near vicinity of the planation kept the new canes in a vigorously growing condition. Suckering was normal and outward appearances did not indicate that gall infections were present. The crowns of several of the tallest, normal looking canes which were leaning over were found to be severely galled and disintegrating. The leaning canes were almost rotted off at the base. Incipient galls were found on the roots of all but a few of the sucker plants.

Other instances of severe crown gall infections of red raspberry have been noticed during the past two growing seasons. Several seedling selections set in old orchard land became severely galled. In the spring of 1961 one seedling selection in a propagation row developed galls on every bud just as they were breaking.

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[2] Lockhart, C. L. in 37th Ann, Rept. Can. Plant Dis. Survey p. 107. 1958.

The reason for the appearance of extensive crown gall infections is not clear. Propagation by digging and transplanting raspberry sucker canes provides numerous points of entry for the crown gall organism. Low rainfall and high temperatures for the past two growing seasons may have provided more favorable environme'ntal conditions for the development of crown gall.

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