INCIDENCE OF GREEN PETAL DISEASE IN CULTIVATED STRAWBERRY IN THE MARITIME PROVINCES IN 1967

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Green petal disease is of major economic importance in strawberry production in the Maritime Provinces. An extensive survey of strawberry plantations in Nova Scotia, Prince Edward Island, and southern New Brunswick was carried out during the strawberry harvesting season in 1967.

In addition to determining the amount of green petal disease in strawberry plantations, we looked for evidence that its occurrence might be correlated with the presence of phyllody-type symptoms in clovers and other potential hosts living in or near the plantations. The amount of green petal in strawberry often seemed to be positively correlated with the amount of clover phyllody in red clover (Trifolium pratense L.), alsike (Trifolium hybridum L.) or white clover (Trifolium repens L.) growing within or close to the plantations. Frequently other hosts with phyllody-like symptoms were also present along with clover. Among these were Anthemis cotula L., Matricaria matricarioides (Less.) Porter, Chrysanthemum leucanthemum L., Erigeron canadensis L., E. annuus (L.) Pers., Leontodon autumnalis L., and Lactuca sp. Sometimes one or more of these ——— lover plants that were subject to phyllody-like symptoms were more numerous than any of the clovers. An exceptional case was observed on a small-fruit farm near Debert, Colchester County, N.S., where no clover was present either within or in the vicinity of a large plantation of first-crop strawberry plants where as high as 70% of the clones contained plants showing symptoms of green petal disease. Coincidentally a high percentage of the numerous wild asters (Aster spp.) and golden rod (Solidago spp.) growing in the adjacent uncultivated low-bush blueberry (Vaccinium angustifolium [Ait.]) fields showed symptoms of a phyllody-aster yellows type disease. Nymphs of a known leafhopper vector, Aphrodes bicinctus, were numerous on the strawberry plants in the first row of a new plantation that was also adjacent to one of the weedy blueberry fields.

During July nymphs of this leaf hopper were readily found in all three Maritime Provinces when looked for under clumps of Rumex acetosella L. or any one of the three commonly cultivated clovers, which frequently grow as weeds in strawberry plantations in the Maritime Provinces.

The following is a summary of the amounts of green petal disease observed during July 1967 in strawberry plantations located at various locations in the Maritime Provinces. In each of the plantations visited the amount of disease in plants of a cropping year is based on representative samples of 100 to 2,000 clones comprised of one or more varieties. The results were usually recorded in terms of the number of clones affected regardless of the number of plants in a clone that showed disease symptoms. In first-crop plantations in western Nova Scotia, the amount of green petal disease was usually low in Kings, Digby, and Yarmouth counties, ranging from 0.2% to 25%, and averaging 6.5% for 19 plantations visited (Table 1). In the

Table 1. Incidence of green petal symptoms in strawberry plantings in the Maritime Provinces in 1967

Type of planting in 1967	No. fields examined	Total no. mother plants or clones examined	Incidence of green petal (%)	
			Range	Avg
New plantings	34	29,429	0.0- 5.2	1.4
Fruiting fields				
western N.S.	19	19,932	0.2-25.0	6.5
Central N.S.	12	2,324	4.0-70.0	32.0
P.E.I.	9	3,501	12.0-70.0	34.5
N.B.	16	6,490	0.5-31.0	8.4
Total	56	32,247	0.2-70.0	11.7

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central Nova Scotia counties of Cumberland, Colchester, and Pictou, numbers of diseased clones were usually high, ranging from 4.0% to 70%, and averaging 32% for 12 plantations visited. In Prince Edward Island the amounts were similar to those observed in the central counties of Nova Scotia, ranging from 12% to 70% and averaging 34.5% for 9 plantations visited. A great variation was observed among the 16 plantations examined in the southern New Brunswick counties of Westmoreland, Queens, and York, with the amounts of diseased clones ranging from 0.5% to 31%, and averaging 8.4%.

Where second- or third-crop plantations were present along with first-crop plantations on the same properties, the percentage of diseased plants was, with one exception, always greater on the first-crop plantation than on either of the other two.

The amounts of green petal diseased plants observed in new plantations, regardless of their location, were characteristic of the nurseries from which the plants originated. For three Nova Scotia certified nurseries the average percentages of diseased plants were 0.661, 0.82%, and 1.5% for 12, 9, and 6 recipient plantations, respectively. In contrast to the records for plants originating from certified "virus-free" nurseries, we have records for two new plantations in Prince Edward Island set out with plants from common field stock in which the percentage of diseased plants averaged 20% and 50% respectively.