Incidence of green petal disease in strawberry in Prince Edward Island, 1976'

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Following 5 years of low incidence of green petal disease in strawberries in Prince Edward Island, growers reported increased prevalence at the beginning of the 1976 harvest season. A survey conducted on 14 farms showed a mean of 6.2% infection in plantings of the cultivar Bounty and a much lower incidence in the cultivars Redcoat and Veestar. It appears that Bounty is more susceptible than Redcoat and that the incidence of green petal increases in Prince Edward Island during periods when "susceptible" cultivars are included in commercial plantings.

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Apres 5 ans de faible incidence du petale vert dans les fraisieres de l'Ile-du-Prince-Edouard, les producteurs ont signalé une recrudescence de la maladie au debut de la saison de recolte de 1976. Une enquête réalisée dans 15 fermes a révélé un taux moyen d'infection de 6.4% dans les fraisieres du cultivar Bounty et une frequence beaucoup plus faible dans celles des cultivars Redcoat et Veestar. Il semble que Bounty soit plus sensible que Redcoat et que le ftequence d'apparition du petale vert augrnente dans l'Ile-du-Prince-Edouard au cours des periodes d'inclusion de "cultivars sensibles'' dans les fraisieres commerciales.

Green petal disease of strawberries was apparently first observed in Prince Edward Island in 1961 (4). Losses from green petal were severe in some fields from 1961 to 1967 (3, 5), but the disease occurred only sporadically in commercial strawberry plantings from 1968 lo 1970 (4). A survey of first-crop plantings conducted in 1971-72 indicated averages of 1.9%, 2.4%, and 9.0% infected plants in the cultivars Cavalier, Redcoat, and Sparkle, respectively (1). There was subsequently a marked reduction in the planting of Sparkle and the authors noted very little green petal during the years 1973 to 1975, inclusive. However at the beginning of the 1976 harvest season, some growers reported that green petal was prevalent, particularly in the cultivar Bounty, which was not extensively fruited in Prince Edward Island prior to 1976.

Materials and Methods

A survey was conducted during the 1976 harvest season of strawberry plantings in all the major producinig areas of Prince Edward Island. In keeping with the reports by producers, Bounty was the main cultivar surveyed. Redcoat and Veestar were also examined on farms where they were grown adjacent to Bounty in an attempt to establish the susceptibility of Bounty in relation to these cultivars. Only first-crop plantings were examined at all locations, and the source of plants determined. Within a planting of each cultivar, 10 sampling sites, each consisting of 3 linear metres of matted row, were selected at random on a line running diagonally across the planting. The number of infected plants was counted at each of the 10 sampling sites, and the total number of plants was counted at two of the sites to provide an average number of plants per site for each planting. Plantings ranged in size from 0.1 to 2 hectares. A total of *8* hectares, representing about 40% of the total area planted to Bounty in Prince Edward Island was surveyed. The incidence of green petal was determined as a mean percentage for each planting.

Results and discussion

The mean ratings or percentages of green petal for each of the 14 locations surveyed are shown in Table 1. Green petal was found in all plantings of Bounty that were examined, and the incidence varied from 0.6% to 15.0%. At five of the seven locations where Redcoat was examined, the incidence of green petal was greater in Bounty than in Redcoat, while the difference between these cultivars was very slight at the other two locations. The mean incidence of green petal in Bounty and Redcoat at the seven locations was 4.7% and 2.5%, respectively. At the three locations where both Veestar and Bounty were examined, the mean incidence of green petal was 1.2% and 10.0%, respectively. Since the plantings of Bounty that were surveyed were propagated from three different sources of plants, and since the incidence of green petal varied considerably within plantings from each source, it is unlikely that the green petal observed in Bounty could be attributed to the source of plants.

The low levels of green petal observed in Redcoat and Veestar, 2.5% and 1.2%, respectively, suggest that this disease was not of major importance in the production of

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Table 1. Incidence of green petal disease in three strawberry cultivars in Prince Edward Island in 1976

Location	% infection (first crop)		
	Bounty	Redcoat	Veestar
Alexandra	0.6		
Tea Hill	1.7	0.2	
Tea Hill	8.0	2.1	
Tea Hill	9.3	6.7	
Cross Roads	3.3	3.6	
Cross Roads	2.6		
Fort Augustus	11.4		2.8
Fort Augustus	3.6		0.3
Blooming Point	15.0		0.4
Vernon	8.2		
Ten Mile House	3.7	1.0	
Parkdale	3.4	0.3	
Tryon	12.1		
Fairview	3.4	3.5	
Mean	6.2	2.5	1.2

these cultivars in P.E.I. in 1976. Observations by the authors also indicate that green petal has not caused serious losses in these cultivars during the past 3 years. It is of interest to note that others (2, 5) have observed lower levels of green petal infection in the cultivar Redcoat than in the cultivar Sparkle in commercial plantings throughout the Maritime provinces. Chiykowski et al. (1) speculated that the change in cultivars grown, from Sparkle to Redcoat, may have contributed to a lower disease incidence in Quebec and the Maritimes in 1971 and 1972. The extensive use of Redcoat by growers in Prince Edward Island from 1970 to 1975 possibly has been the main reason for the low incidence of green petal during this period.

The high incidence of green petal in the cultivar Bounty confirms our earlier observation (4) that Bounty, or K64-436, along with some other cultivars and selections, exhibited a high incidence of green petal infection. The results of the 1976 survey also support our suggestion (4) that certain strawberry cultivars have some resistance or tolerance to green petal, or that there is a leafhopper vector preference for one cultivar over another. Certainly strawberry growers in Prince Edward Island, and possibly throughout the Maritimes and Quebec, should be cautioned about the susceptibility of Bounty to green petal when they are selecting cultivars for new plantings. Also, it appears that new or potential cultivars for the Maritime Provinces and Quebec should be screened for susceptibility to green petal and only those expressing a high level of resistance be recommended for commercial planting.

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