SUSCEPTIBILITY OF SOME STRAWBERRY CULTIVARS TO GREEN PETAL[1]

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Abstract

Of 13 cultivars and selections of strawberry exposed to natural infection in a field test at Oxford, Nova Scotia, the cultivars Redcoat and Elista and the Kentville selection K63-280 were the least affected by green petal. Variation in disease incidence may have occurred because of a difference in vector preference for different cultivars, and not primarily as a cultivar resistance to green petal.

Introduction

Green petal, a virus-like disease of strawberries, occurs sporadically and in varying intensities in different areas of the Maritime Provinces (13). Chiykowski (3) showed that the green petal pathogen also causes clover phyllody. Observations made by Stultz and MacNab (13) and the transmission studies of Chiykowski (5) indicated that, in addition to clover, other plants may be reservoirs for this disease causing entity. The infectious agents appear to be mycoplasma-like bodies transmitted by leafhoppers (1,2,4,7,8,12).

In 1955, green petal was first reported in Nova Scotia on the cultivars Catskill, Senator Dunlap, and Temple (9). Since that time it has been found on most of the strawberry cultivars grown in the Maritime Provinces (6,10,11,13).

In 1967, a single row of 100 virus free plants for each of 13 cultivars or seedlings, was set out in a strawberry yield trial at Oxford, Cumberland County, Nova Scotia. Rows were set in an east-west direction and cultivars in the order arranged in the table from 'K63-280' on the north to 'Acadia' on the south side. The planting was bounded by a hedgerow on the south, by strawberry and raspberry plantings on the east and west ends, respectively, and on the north by a field of grass and clover. Phyllody was not observed on clover plants in this field.

Observations and discussion

In 1968, a high incidence of green petal occurred in this trial and during harvest each mother plant of each cultivar was examined for symptoms of disease. The incidence of green petal was recorded as follows:

Cultivar	% mother plants diseased
K63-280†	5
Tioga	56
Talisman	13
Senga Sengana	18
Sparkle	24
Raritan	16
Elista	5
Redcoat	4
Vesper	20
K60-98†	14
Midway	12
Gorella	12
Acadia	11

† Kentville seedling.

More green petal occurred in Sparkle than in Redcoat, two cultivars commonly grown in Nova Scotia. In the Oxford area, the incidence of green petal has been higher in commercial plantings than in other areas of the province (13), and observations suggest that Sparkle has been more seriously affected than Redcoat. Collins and Morgan (6) observed similar cultivar resistance to strawberry green petal, and reported Sparkle to be more susceptible than Redcoat. They indicated that although the strawberry was not a preferred host for the leafhopper vector, it was a suitable one. However, they believed that the disease was aster yellows and therefore assumed that the vector was Macrosteles fascifrons (Stål). More recent work has shown that the disease is distinct from aster yellows and that green petal may be transmitted by several species of leafhopper (1,2,3,4,8).

The work of Collins and Morgan (6) indicated that the vectors are slow moving and that this may have accounted for the higher incidence of green petal along the sides of plantations bordering on source

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fields. In the Oxford trial the incidence of green petal varied and was not always highest in those cultivars nearest source fields. There may be a difference in vector preference for different cultivars, and this may have been responsible for the difference in the incidence of green petal among the cultivars in this trial,

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