

A SURVEY OF PEA AND LENTIL VIRUSES IN THE SOUTH ISLAND

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INTRODUCTION

The following viruses have been found in previous surveys of peas: alfalfa mosaic virus (AMV), bean yellow mosaic virus (BYMV), beet western yellows virus (BWYV), cucumber mosaic virus (CMV), pea seed-borne mosaic virus (PSbMV) and soybean dwarf virus (SDV) (Ashby, 1988; Chamberlain, 1954; Crampton & Watts, 1968). In lentils only SDV was recorded (Ashby *et al.*, 1979)).

With the expansion of production of both lentils and peas into new regions, incidence of viruses in peas and lentil crops was surveyed. The influence of previous and adjacent crops on disease incidence and the importance of weeds as a disease reservoir for CMV in lentil crops was assessed.

METHODS

In 1987-88, 74 pea and 25 lentil crops were surveyed in Marlborough and Canterbury (Fletcher *et al.*, 1988). (Crops to be surveyed were selected by MAFQual, seed company and process company staff). Area, cultivar, sowing date, crop use, and cropping history were recorded. Samples of 130 leaves were taken from each paddock, bulked then inoculated onto indicator plants or serologically tested using ELISA. Disease incidence was estimated using a modified survey method (Moran *et al.*, 1985). In 1988-89 three lentil crops in Marlborough were surveyed for viruses and weeds adjacent to the crop were also sampled for viruses especially CMV.

RESULTS AND DISCUSSION

Virus incidence in peas was lower than in previous surveys, 0 - 15 % compared with up to 100 % (Ashby, 1988; Chamberlain, 1954; Crampton & Watts, 1968). No new viruses were recorded. The incidence of BWYV (0 - 11 %) and SDV (0 - 15 %) was greater than expected.

In lentils AMV (0 - 7 %), CMV (0 - 87 %), PSbMV (0 - 7 %), and BWYV (0 - 9 %) were recorded for the first time in New Zealand. Virus incidence was greater in Blenheim (15.8 %) than the other survey locations at Seaview (4.5 %), North and South Canterbury (12.7 %).

Adjacent or previous crops did not influence virus incidence. Weeds were not important as a virus reservoir for lentil crops.

The virus incidence was greater in spring sown crops than in autumn or winter sown crops.

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