Egypt. J. Appl. Sci., 8 (9) 1993 1-19

INHERITANCE AND NATURE OF RESISTANCE TO WATERMELON MOSAIC VIRUS 2 (WMV-2) IN PUMPKIN (CUCURBITA MOSCHATA Duch.)

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ABSTRACT

A cross was made in both directions between two inbred lines of pumpkin (Cucurbita moschata): P1 (resistant to MWV-2; derived from cv. Dickinson) and P2 (susceptible to MWV-2; derived from cv. Nables). Results indicated that resistance to MWV-2 was controlled by one dominant gene designated WMV. No. maternal effect was observed in the inheritance of resistance to WMV-2.

Determination of the average number of local lesions resulting from subinoculation from F2 plants of the cross P1xP2 to Chenopodium amaranticolor proved to be a dependable indexing method for WMV-2 presence.

Concentration of reduced, non-reduced and total sugars in leaves of inoculated plants increased with the increase in disease severity. Highly significant negative correlation was found between disease severity and total phenol content in leaves of inoculated plants, indicating that phenol content of leaves can serve as a selection criteria or a double check for resistance to WMV-2 in pumpkin. Significant negative correlation was observed between disease severity and concentration of either TSS or carotenoids in the fruits, indicating the importance of selecting pumpkin lines with high level of resistance to WMV-2.