

Author(S): Gyanendra Kumar Rai^a, Rajesh Kumar, J. Singh, P. K. Rai^b
And S.K. Rai^c

Title: Peroxidase, Polyphenol Oxidase Activity, Protein Profile And Phenolic Content In Tomato Cultivars Tolerant And Susceptible To *Fusarium Oxysporum F.Sp.Lycopersici*

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Institute: Indian Institute of Vegetable Research, Varanasi, (UP) India
^aBiochemistry, Division of PBG, FOA, SKUAST-Jammu, Chatha,
^bKVK-Jammu, SKUAST-Jammu
^cDivision of PBG, SKUAST-Jammu, Chatha, Jammu .

Abstract

The total phenol content, peroxidase and polyphenol oxidase enzyme activities and the total protein profile in tomato cultivars (*Lycopersicon esculantum* Mill.), tolerant and susceptible to *Fusarium* wilt disease was studied. The tolerant cultivars of tomato viz., FEB-2, FEB-4, FloraDade and NF-31 had significantly higher phenol content as well as peroxidase and polyphenol oxidase activities than the susceptible ones (Sel-7, Sel-18 and Punjab Chuhara). The maximum peroxidase activity was recorded in the resistant cultivar, Flora Dade (02.073unit/ml) and minimum in the susceptible cultivar, Sel-18 (0.241unit/ml). Major differences in soluble protein banding pattern were observed in the susceptible and resistant cultivars. The hierarchical cluster analysis was performed using NTSYS-pc(V.1.8) software. The dendrogram using the average linkage between the groups, showed proximity of resistant cultivars viz., FEB-4, FEB-2, Flora Dade and NF-31 to the wild species with respect to similarity of banding patterns. The three susceptible cultivars viz., Sel-7, Punjab Chuhara and Sel-18 were grouped separately.