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CHANGES IN FREE AMINO ACIDS CONTENT OF GROUNDNUT HYPOCOTYL TISSUE INFECTED WITH *SCLEROTIUMROLESII* Sacc

Importance of amino acids in imparting resistance or susceptibility in a number of host parasite relationships has been discussed by Van Andel (1966). In the present study changes in the free amino acids content of groundnut hypocotyl tissue as a result of seeds of the variety TMV-2 were surface sterilised, washed and sown in large petridishes containing 100 ml of per cent water agar. They were allowed to grow at room temperature ($26 \pm 2^\circ$ C) for 10 days. These seedlings were then inoculated with a highly pathogenic isolate of *S. rolfsii* and samples were collected on the 4th and 8th days after inoculation free amino acids were detected by unidimensional paper chromatography using n-butanol-acetic acid - water(4:1 :5 v/v/v) as solvent system as described by Block *et al.* (1958). The individual amino acids were quantitatively detected following the methods of Selman *et al* (1961). The results are presented in the, following table. In general there was an increase in many of the amino acids in the hypocotyl tissues due to infection. Glycine, glutamic acid, alanine, proline, phenylalanine and histidine were increased even during the early stages of infection. Amino acids like typtophane methionine, threonine, arginine, serine and cysteine were detected in the infected tissue only accumulation of amino acids in the infected tissues has been reported earlier (Van Andel, 1966). This may primarily be responsible for growth of the pathogen in the infected host tissue. It may be possible that the free amino acids were transported to the site of infection for the development of the pathogen or infection might have resulted in the breakdown of proteins as pointed out by Van Andel (1966). Ragunathan *et al.* (1966).

സംഗ്രഹം

സൂക്ഷ്മജീവോഷിതം റോലഫ്സി എന്ന ഫംഗസിന്റെ ആക്രമണം ഏറ്റവും നിലക്കടലുള്ള കോശങ്ങളിൽ അമിതമായി അമ്ലങ്ങൾ അധികരിച്ച രോഗത്തിൽ ശേഖരിക്കപ്പെടുന്നതായി കാണുകയുണ്ടായി. ഇതിന് കാരണം ചെടിയുടെ മറ്റു ഭാഗങ്ങളിൽ നിന്നും രോഗബാധ ഏറ്റവും കൂടുതൽ ഇവ അടിഞ്ഞുകൂടിയതോ *rawj* ഭാഗത്തെ മാംസ്യംശതമാനം അപഗ്രഥനം സംഭവിച്ചതോ ആകാം.

Table 1 Effect of root rot on the free amino acid content of groundnut hypocotyl tissue (in μ g / g fresh weight of tissue)

Sl. No	Amino acids	Days after inoculation			
		4 days		8 days	
		Healthy	Inoculated	Healthy	Inoculated
1.	Glycine	28.0	30.0	29.0	36.0
2.	Glutamic acid	30.0	34.0	30.0	34.0
3.	Alanine	29.0	32.0	31.0	35.0
4.	Proline	26.0	29.0	28.0	32.0
5.	Tryptophane	0.0	10.0	0.0	28.0
6.	Methionine	0.0	0.0	0.0	28.0
7.	Threonine	0.0	0.0	0.0	29.0
8.	Phenylalanine	38.0	45.0	51.0	50.0
9.	Arginine	0.0	0.0	0.0	24.0
10.	Serine	0.0	0.0	0.0	30.0
11.	Cysteine	0.0	38.0	0.0	44.0
12.	Histidine	36.0	40.0	39.0	48.0

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