

## ROLE OF ASCORBIC ACID ON 'TIKKA' DISEASE OF GROUNDNUT

The 'Tikka' disease of groundnut, caused by *Cercospora personata* (Berk. and Curt.) Ell. and Ev. is localised and the necrotic regions will usually be surrounded by yellow haloes. The halo apparently restricts the further spread of the disease.

It has been reported by earlier workers that resistance to the tikka disease is related to the concentration of ascorbic acid, riboflavin and magnesium in the tissues. Roger *et al.* (1946) in their studies on the leaf spot of peanut found that the low level of magnesium was either directly or indirectly responsible for the susceptibility of peanuts to the disease. Ravindranath *et al.* (1965) found that ascorbic acid had a direct bearing on the manifestation of the disease in susceptible varieties.

In the present study, the total content of ascorbic acid in healthy and diseased groundnut leaves was estimated so as to ascertain its influence on the development of the disease.

Highly susceptible groundnut variety TMV-3 was used in the experiments. Samples were analysed from plants of the same age groups grown under identical conditions and comparisons made within plants and between plants. Ascorbic acid content of young healthy leaves, old healthy leaves, diseased portion of the leaves and yellow halo around the infected region was estimated by the method described by Glick (1954).

A higher ascorbic acid content was noticed in young healthy leaves (33.39 to 35.29 mg/100 g) as compared to the old leaves (25.66 to 26.71 mg/100 g) on a fresh weight basis. The ascorbic acid content was higher in the necrotic region than in healthy tissues, the range being from 36.5 to 39.75 mg/100g. The yellow halo around the necrotic spots showed a very high accumulation of ascorbic acid content, which ranged from 71.55 to 74.73 mg/100 g (Table 1).

Table 1

Ascorbic acid content of groundnut leaves in healthy (young and old), necrotic and yellow halo regions

Replication	Ascorbic acid content in mg/100 g of leaf tissue			
	Young healthy leaves	Old healthy leaves	Diseased portion of the leaves	Yellow halo region around the infected region
1	34.34	26.71	38.16	73.14
2	33.39	26.71	39.79	73.14
3	34.34	27.66	38.16	71.55
4	35.29	25.66	36.57	74.73
Mean	34.34	26.69	38.17	73.14

The above results clearly indicate that ascorbic acid accumulates around the infected regions in groundnut leaves. It is, therefore, probable that the restricted growth of the pathogen within the necrotic region might be associated with the higher accumulation of ascorbic acid content in the yellow halo zone.

സംഗ്രഹം

നിലക്കടലയെ ബാധിക്കുന്ന ടിക്കാ രോഗത്തിന്റെ പുളളിക്കുത്തുകൾക്കു ചുറ്റുമുള്ള മഞ്ഞവലയങ്ങളിൽ അസ്കോർബിക് അമ്ളത്തിന്റെ തോത് ആരോഗ്യമുള്ള കലകളിലേതിനേക്കാൾ ഗണ്യമായി വർദ്ധിച്ചിരിക്കുമെന്നു കണ്ടു. പുളളിക്കുത്തുകൾ ഇലകളിൽ വ്യാപിക്കാതിരിക്കുന്നതിന്റെ കാരണം കൂടുതലായി കാണുന്ന അമ്ളമായിരിക്കാനിടയുണ്ട്.

References

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College of Agriculture,  
Vellayani, Trivandrum.

P. Karunakaran  
J. Sam Raj

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