

EFFECT OF GRADED LEVELS OF PHOSPHORUS AND POTASSIUM  
ON NODULATION OF TWO VARIETIES OF GROUNDNUT  
(*ARACHIS HYPOGAEA L.*)

The influence of phosphorus on nodulation and yield of groundnut has been reported by many workers (Verma and Bajpai, 1964; Banarjee *et al.*, 1967 and Pawar and Khuspe, 1976). The beneficial effect of potassium in increasing nodulation of groundnut is reported by Sreedharan and George (1968), Nair *et al.* (1970) and Muthusamy (1973).

An experiment was laid out in the red loam soils of the Instructional Farm, College of Agriculture, Vellayani during the third crop season of 1976-77 to study the performance of two varieties of groundnut (TMV-2 and TMV-9) under graded doses of phosphorus (50, 75 and 100 kg  $P_2O_5$ /ha) and potassium (25, 50 and 75 kg  $K_2O$ /ha). The experiment was laid out in a  $2 \times 3^2$  partially confounded factorial design. Observations were recorded three times, the first at 30 days after sowing, the second at 60 days after sowing and the third at 90 days after sowing. The weights of oven-dried samples of nodular tissue per plant were recorded, analysed and presented in Table 1.

Table 1  
Nodulation of groundnut as influenced by graded levels of phosphorus and potassium.

Treatments	Weight of nodular tissue per groundnut plant (mg)		
	30 days after sowing	60 days after sowing	90 days after sowing
50 kg $P_2O_5$ /ha	24.33	42.50	49.17
75 kg "	24.50	45.92	51.42
100 kg "	27.09	51.00	54.17
'F' test	Sign	Sign	Sign
25 kg $K_2O$ /ha	25.00	46.00	50.50
50 kg "	24.17	45.42	52.25
75 kg "	26.75	48.00	52.00
'F' test	NS	NS	NS
CD (0.05) P & K	2.37	5.51	2.16
TMV-2	25.17	45.89	51.39
TMV-3	25.44	47.06	51.78
'F' test	NS	NS	NS

It is seen that 100 kg  $P_2O_5$  per hectare significantly increased the weight of root nodules as compared to 50 kg  $P_2O_5$  at 30 and 60 days after sowing. At 90 days after sowing, it was found that the nodular weight was significantly increased by incremental doses of  $P_2O_5$ . It is thus evident that the applied phosphorus induced rapid growth of rhizobia thereby increasing the weight of root nodules. This is in agreement with the findings of Khare and Rai (1968), Muthusamy (1973), Punoose and George (1975) and Pawar and Khuspe (1976). Potassium levels were found to have no significant effect on the nodule weight. Similar results were earlier reported by Veeraraghavan (1964). There was no varietal influence on the weight of root nodules.

സംഗ്രഹം

ഫോസ്ഫറസ്, പൊട്ടാഷ് എന്നീ സസ്യ പോഷക മൂലകങ്ങൾ ററി. എം. വി-2, ററി. എം. വി-9 എന്നീനിലക്കടല ഇനങ്ങളുടെ വേരിലുള്ള ബാക്ടീരിയാ ഗ്രന്ഥികയുടെ തൂക്കത്തിൽ എത്രമാത്രം സ്വാധീനം നടത്തുന്നു എന്നു പഠനം നടത്തിയതിൽ ഫോസ്ഫറസിന്റെ അളവ് 100 കിലോഗ്രാംവരെ കൂട്ടുന്നതനുസരിച്ച് ഗ്രന്ഥികയുടെ തൂക്കം കൂട്ടുന്നതായി കണ്ടു. പൊട്ടാഷിന് ഗ്രന്ഥികയുടെ തൂക്കം വർദ്ധിക്കുന്നതിൽ കാര്യമായ പങ്കുള്ളതായി ഈ പഠനത്തിൽ കാണാൻ കഴിഞ്ഞില്ല.

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