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PERFORMANCE OF FODDER COWPEA VARIETIES AT GRADED LEVELS OF PHOSPHORUS AND POTASSIUM

Significant yield increase in cowpea due to soil application of phosphorus and potash has been reported by a few workers (Dubey *et al*. 1975; Garg *et al*. 1971; Chesney, 1974). Two cowpea cultivars (C-14.20, C-26.28) obtained from the Forage Research Project, Gujarat Agricultural University, Anand were evaluated, against a high yielding grain type 'New Era' and a local check. The levels of phosphorus were 30 and 60 kg P_2O_5/ha and those of potassium, 0 and 30 kg K_2O/ha. The experiment was laid out in the experimental farm attached to the Fodder Research and Development Scheme, College of Veterinary and Animal Sciences, Mannuthy, adopting factorial randomised block design with 16 treatment combinations and three replications. The spacing adopted was 25 cm x 10 cm. A uniform dose of farm yard manure at the rate of 2.5 t/ha and a starter dose of nitrogen at 15 kg/ha were applied basally. The phosphatic and potassic fertilizers were also applied as basal dressing. The crop was harvested 68 days after sowing and the green yield of fodder was recorded.

Table 1

Effect of graded levels of phosphorus and potassium on the green fodder yield of cowpea (t/ha)

	Levels of P_2O_5 & K_2O (kg/ha)				
Varieties	30+0	30+30	60+0	60+30	Mean
C-14.20	20.20	20.69	20.41	17.91	19.8
C-26.28	18.81	20.13	21.87	25.27	21.52
New Era	12.22	11.80	13.67	15.69	13.34
Local	11.80	15.62	13.26	13.33	13.50
Mean	15.76	17.06	17.30	18.05	—

C D (0 05) for comparisons between varieties =6.2

The results (Table 1) indicated significant varietal differences. Differences between levels of phosphorus and potassium were not significant. Among the types, C-26.28 recorded the highest green yield of 21.52 t/ha followed by C-14.20 which gave an yield of 19.80 t/ha. The difference in yield between these two varieties was however, not significant. The mean yields of 'New Era' and the local variety were 13.34 and 1 3.50 t/ha respectively. Though the difference in yield between these varieties was not significant, they were significantly inferior to the cultivars C-26.28 and C-14.20. The lack of significant response to phosphorus and potassium is perhaps attributable to the high inherent supplying power of the soil for these two nutrients.

The supply of these two elements through applied farm yard manure may e another factor responsible for the lack of response. Another reason for the

failure of the crop to respond to levels of phosphorus beyond 30 kg P_2O_5/ha may be the increased availability of soil phosphorus consequent to application of farm yard manure. The data on content of available phosphorus (17 kg/ha)) which was at medium level will further substantiate this point. Tne general yield levels were also reasonably high which indicate again that the lack of response to the nutrients could not have been because of other factors limiting the growth and yield of the crop. Though the treatment differences were not significant, the highest mean yield was recorded by the combination receiving phosphorus and potassium at the highest levels (18.05 t/ha) and the lowest by the treatment that received phosphorus at 30 kg P_2O_5/ha without potassium (15.76 t/ha).

സംഗ്രഹം

വിവിധ തോതിൽ ഭാവഹവും ക്ഷാരവും നൽകുന്നതുകൊണ്ട് ചിലയിനം പയറിനങ്ങളുടെ കാലിത്തീറ്റ ഉൽപാദനശേഷിയെ എത്രമാത്രം ബാധിക്കുന്നുവെന്ന് മണ്ണുത്തി തീറ്റപ്പുല്ലു ഗവേഷണ കേന്ദ്രത്തിൽ പരീക്ഷണങ്ങൾ നടത്തുകയുണ്ടായി. നാലിനം പയറുകൾ ഉപയോഗിച്ചതിൽ ഹെക്ടറിന് 21.52ടൺ വിളയുൽപാദിപ്പിച്ച സി–26.28 എന്നയിനമാണ് ഏറ്റവും മികച്ചതായി കണ്ടത്. ഭാവഹത്തിന്റേയും ക്ഷാരത്തിന്റേയും വ്യത്യസ്തffi(OTOOTii<9yCo പയറിനങ്ങളുടെ വിളവിനെ ഗണ്യമായി ബാധിക്കുന്നില്ലെന്ന് കണ്ടു. കാലിവളം മണ്ണിൽ ചേർക്കുക വഴി ലഭിച്ച ഭാവഹാംശ വർദ്ധനവും ജൈവ പദാർത്ഥം മണ്ണിൽ ചേർക്കുക വഴിയുണ്ടായ മണ്ണിലെ ഭാവഹ eഭ്യതാവർദ്ധനവുമായിരിക്കാം, ഭാവഹ വളങ്ങൾ ഉപയോഗിച്ചപ്പോൾ വിളവർദ്ധന ഉണ്ടാകാതിരിക്കാനുള്ള കാരണം, മണ്ണിൽ ഭാവഹവും ക്ഷാരവും നേരത്തെതന്നെ കൂടിയ അളവിൽ ഉണ്ടായിരുവെന്നതും വളപ്രയോഗംകൊണ്ട് ഗുണമുണ്ടാകാതിരിക്കാൻ കാരണമായിരുന്നേക്കാമെന്ന് അനുമാനിക്കേണ്ടിയിരിക്കുന്നു.

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