

EFFECT OF FOLIAR SPRAY OF UREA AND DIAMMONIUM PHOSPHATE ON THE GROWTH AND YIELD OF COWPEA

Foliar nutrition method ensures remarkably rapid and often complete absorption of nutrients. A part of nitrogen when applied through foliage could boost the production efficiency of nitrogen (Sharma, 1970; De, 1971). In order to evaluate the comparative efficiency of urea and diammonium phosphate as foliar

Table I
Effect of foliar spray of urea and diammonium phosphate on the growth and yield of cowpea

Treatments	No of pods per plant	Yield of dry pods (kg/ha)
1	5.20	729.77
2	4.20	765.58
3	3.30	563.80
4	4.85	712.16
5	3.92	462.91
6	4.50	908.01
7	3.37	646.88
8	3.80	563.80
9	3.77	652.82
10	3.37	599.40
11	3.05	391.69
Ftest	Sig.	Sig.
CD (0.05)	1.11	160.24

- Tr. 1—Nitrogen and phosphorus applied fully as basal as per Package of practices (20:30 kg N & P/ha.)
- Tr. 2—Half nitrogen and full phosphorus as basal + half nitrogen top dressing 20 days after sowing as soil application.
- Tr. 3—Half nitrogen and full phosphorus as basal + one spray of urea 2% solution 20 days after sowing.
- Tr. 4—Half nitrogen and full phosphorus as basal + two sprays of urea 2% solution 20 days and 30 days after sowing.
- Tr. 5—Half nitrogen as basal and one foliar spray with diammonium phosphate 2% solution 20 days after sowing.
- Tr. 6—Half nitrogen as basal + two foliar sprays with 2% diammonium phosphate solution 20 days and 30 days after sowing,
- Tr. 7—No nitrogen, full phosphorus as basal and urea 2% solution as foliar spray 20 days after sowing.
- Tr. 8—No nitrogen, full phosphorus as basal and two sprays of urea 2% solution 20 days and 30 days after sowing.
- Tr. 9—No nitrogen or phosphorus as basal with one foliar spray of 2% solution of diammonium phosphate 20 days after sowing.
- Tr. 10—No nitrogen or phosphorus as basal with two foliar sprays of 2% solution of diammonium phosphate 20 days and 30 days after sowing.
- Tr. 11—Control—no fertiliser.

spray in increasing growth and yield of cowpea, a Randomised replicated trial was conducted during July to September, 1979 at the Rice Research Station, Pattambi, The test variety was C-152 and the number of replications was four. The seed rate was kept at 25 kg/ha and sowing was done at a spacing of 30 x 20 cm. The gross plot size was 5 x 4 m and the quantity of spray fluid used per plot was one litre.

The data on growth characters and yield of dry pods are presented in Table-1. The Tr. 6 gave the highest dry pod yield of 908.01 kg/ha and this was significantly superior to all the other treatments. In this treatment, 50% of the nitrogen was applied as basal dose and two foliar sprays with diammonium phosphate 2% solution were given at 20 days and 30 days after sowing. Sahu and Lanka (1967) reported that in the rice crop, application of 50% nitrogen as basal and 50% as foliar spray was better than the soil application of the entire dose of nitrogen. Similar results were reported in sesamum by Nair *et al.* (1975), Of the growth characters studied, the treatment differences were significant only with respect to the number of pods per plant,

സംഗ്രഹം

യൂറിയ, ഡൈഅമോണിയം ഫോസ്ഫേറ്റ് എന്നീ രാസവളങ്ങൾ ഉപയോഗിച്ച് പർണ്ണപോഷണം നടത്തിയാൽ സി-152 എന്ന വൻപയറിനത്തിന്റെ വളർച്ചയേയും, ഉൽപാദനത്തേയും അത് ഏപ്രകാരം ബാധിക്കുന്നുവെന്നറിയാൻ 1979ൽ പട്ടാമ്പി നെല്ലുഗവേഷണ കേന്ദ്രത്തിൽ ഒരു താരതമ്യപഠനം നടത്തുകയുണ്ടായി. ശുപാർശപ്രകാരമുള്ള പാകൃഷ്ണകത്തിന്റെ 50 ശതമാനം അടിസ്ഥാന വളമായി മണ്ണിലിടുകയും, വിത്ത്പാകി 20-ഉം 30-ഉം ദിവസങ്ങൾക്കു ശേഷം 2 ശതമാനം വീര്യമുള്ള ഡൈഅമോണിയം ഫോസ്ഫേറ്റ് ലായനി തളിച്ച് പർണ്ണപോഷണം നടത്തുകയും ചെയ്തപ്പോഴാണ് ഏറ്റവും മെച്ചമായ വിളവ് ലഭിച്ചത്.

References

De, Rajat, 1977 A review of foliar fertilization of crops in India. *Fertili. News*, 16, 78-81.

Nair, N. R., Santhakumari, R. and Gopalakrishnan, R. 1975. A comparative study of soil and foliar application of urea on sesamum. *Agri. Res. J. of Kerala*, 13, 128-131.

Sahu, B. N. and Lanka, D. 1967. Nutrition of rice crops by soil and foliar applications of urea *Indian J. Agric. Sci.*, 37, 437-44,

Sharma, K. C. 1970. Urea spray fertilization can bring extra yield in dwarf wheats. *Indian Fmg.*, 20, 31-32.

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