

NITROGEN NUTRITION OF "ROHINI"— A SHORT DURATION RICE VARIETY

Nitrogen is required in large quantities by rice, especially for high yielding varieties to express their production potential fully. It is a well known fact that about 50% or even more of the applied nitrogen is lost from soil through various ways. In order to reduce the magnitude of loss and to increase the efficiency of applied nitrogen, split applications were suggested by Pande and Singh (1970) and Srivastava and Thakur (1971). Increase in grain yield of rice by foliar application of nitrogen was reported by Venketesan *et al.* (1977). The present investigation was conducted in 1975 to find out the optimum quantity of nitrogen required together with its right method of application for a short duration of rice variety viz., Rohini during punja season under Vellayani conditions. With the following 10 treatments and three replications the experiment was laid out in a randomised block design.

Treatments		Method of application		
Sl. No.	kg N/ha	50% as basal	25% at PI (25 DAT)	25% at booting (45 DAT)
1	0			—
2	30	S	S	S
3	30	S	S	F
4	30	S	F	F
5	60	S	S	S
6	60	S	S	F
7	60	S	F	F
8	90	S	S	S
9	90	S	S	F
10	90	S	F	F

PI = Panicle initiation; S = Soil application; F = foliar

DAT = Days after transplanting.

Seedlings aged 21 days were transplanted at a spacing of 15 x 10 cm in well prepared plots on 16th of January 1975. A common basal dose of phosphorus and potassium at the rate of 30 kg each per hectare was applied. Nitrogen as per treatment was applied as urea, phosphorus as superphosphate and potassium as muriate of potash. Uniform cultural and plant protection operations were done in all plots. The crop was harvested on the 80th day after transplanting.

Results presented in Table 1 show that the number of productive tillers was very much influenced by the treatments under study. The highest number of 607.1 productive tillers per m² was recorded in treatment No.5 which was significantly superior to all other treatments. There was no significant difference

between treatments with regard to 1000 grain weight, but the highest value of 25 36 g was recorded in treatment No. 5. The data on grain yield show significant variation between treatments. The highest grain yield of 2654 kg/ha was recorded in treatment No. 5. It can be seen that the highest value on number of productive tillers and 1000 grain weight were recorded in treatment No. 5. Therefore, it appears that application of 60 kg N (50% as basal, 25% at panicle initiation and 25% at booting) would be sufficient for getting higher yield from Rohini during punja season. Similar results were obtained by Devi *et al.* (1980) in rice. In respect of straw yield also the effect of treatment was significant, the treatment No.6 giving highest yield of 6617 kg/ha.

Table 1

Mean values on number of productive tillers, 1000 grain weight, yield of grain and straw

Treatments	Number of productive tillers per m ²	1000 grain weight (g)	Yield of grain (kg/ha)	Yield of straw (kg/ha)
T ₁	314.9	21.48	1444.44	3358.0
T ₂	390.8	23.27	2148.14	4913.5
T ₃	359.4	23.80	2061.72	5234.5
T ₄	437.4	23.56	2086.41	6320.9
T ₅	607.1	25 36	2654.31	6320.9
T ₆	496.1	24.10	2049.38	6617.2
T ₇	439.6	23.78	1807.40	5728.3
T ₈	421.9	23.28	2172.83	5999.9
T ₉	444.7	23.73	2246.91	6197.5
T ₁₀	444.4	24.10	2012.34	5432.0
CD (0.05)	82.4	NS	421.88	981.1
S Em±	27.73	0 68	141.99	330.21

NS Not significant

സംഗ്രഹം

രോഹിണി എന്ന ഹ്രസ്വകാല നെല്ല് പൂർണ്ണമായി സമയത്ത് ആവശ്യമുള്ള പാകൃഷ്ണകത്തിന്റെ അളവും അതുപ്രയോഗിക്കേണ്ട രീതിയും നിർണ്ണയിക്കുന്നതിന് 1975-ൽ നടത്തിയ പരീക്ഷണത്തിൽ ഹെക്ടറിന് 60 കി. ഗ്രാം പാകൃഷ്ണകം 30 കി. ഗ്രാം അടിവളമായും 15 കി. ഗ്രാം മണ്ണിൽക്കൂടി മൂല രൂപം പ്രാപിക്കുമ്പോഴും 15 കി. ഗ്രാം മണ്ണിൽക്കൂടി കൊതുന്യു തലത്തിലും നൽകുന്നത് വളവും ഉല്പാദനക്ഷമതയുള്ള ചിനപ്പുകളുടെ എണ്ണവും വർദ്ധിപ്പിക്കുന്നതിനു സഹായകമായി. 60 കി. ഗ്രാം പാകൃഷ്ണകം — 30 കി. ഗ്രാം അടിവളമായും 15 കി. ഗ്രാം കരിർ മൂല രൂപം പ്രാപിക്കുമ്പോഴും 15 കി. ഗ്രാം കൊതുന്യു തലത്തിൽ പത്ര പോഷണവഴിയും നൽകുന്ന തുകൊണ്ട് വയ്ക്കോലിന്റെ ഉല്പാദനം ഗണ്യമായി വർദ്ധിക്കുകയുണ്ടായി.

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