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INFLUENCE OF AGE OF SEEDLINGS, SPACING & TIME OF APPLICATION OF NITROGEN ON THE YIELD OF RICE VAR I. R. 8

Correct time of transplanting and optimum manuring are two important factors which affect potential production of the paddy varieties. Plant population per unit area is also one of the major factors deciding the yield. A field experiment was conducted at the Agricultural College, Vellayani during the first crop season of 1974 to study the performance of IR-8 under split application of nitrogen, spacing and age of seedlings.

Eighteen treatment combinations with time of application of Nitrogen (T1-75% N as basal, 25% N at tillering stage, T2-75% N as basal, 25% N at panicle initiation stage, T3 -50% N as basal, 25% N at tillering and 25% N at panicle initiation stage), levels of spacing (S1 =15 cm x10cm, S2=20cmx 10cm) and age of seedlings (A1 =21 days, A2=28 days and A3 =35 days old seedlings) were tried in the Randomised Block Design of lay out and replicated three times. A uniform dose of P and K at the rate of 45 kg per ha. each and specific quantities of N as per treatment were applied as basal dressing. Top dressing was done as per the treatments on the 50th and 70th days after seeding respectively for each age group of seedlings.

The mean grain yield in kg per ha. is given in Table 1. The effect due

Table 1

Mean grain weight in kg. per hectare

Age Group	Time of application of nitrogen				Spacing		
	T1	T2	T3	Mean	S1	S2	Mean
A1	3179	3201	3450	3276	3269	3284	3276
A2	2669	3361	3452	3261	3137	3384	3261
A3	3350	3312	3189	3248	3169	3399	3248
Mean	3166	3191	3363		3102	3356	—
<i>Spacing</i>							
S1	3026	3294	3255	3192			
S2	3306	3289	3442	3356			
Mean	3166	3191	3363	—			

to age of seedlings, spacing and time of nitrogen application were not significant. But the mean grain yield was found maximum for $\frac{1}{8}$ N as basal and $\frac{1}{4}$ th N at tillering $\frac{1}{4}$ th N at panicle initiation with wider spacing and 28 days old seedlings. The highest yield of 3528. kg per ha. was noticed in plot with 28 days old seedlings and $\frac{1}{2}$ N as basal and $\frac{1}{4}$ th N at tillering and $\frac{1}{4}$ th N at panicle initiation stage and wider spacing and the lowest yield of 2635 kg per ha. in plot with 28 days old seedlings with closer spacing and $\frac{3}{4}$ th N as basal and $\frac{1}{4}$ th N at tillering stage.

The mean straw yield in kg per ha. is given in Table 2. The effect of timings of N application and age of seedlings were significant on the yield of

Table 2
Mean weight of straw in kg. per hectare

Age Group	Time of application of nitrogen				S1	Spacing	
	T1	T2	T3	Mean		S2	Mean
A1	3035	3700	4065	3933	3835	4031	3933
A2	3644	3237	3670	3517	3440	3594	3517
A3	3724	3394	3480	3533	3468	3597	3533
Mean	3801	3444	3738		3581	3741	
S1	3752	3254	3737	3581			
S2	3801	3634	3739	3441			
Mean	3801	3444	3738	—			

C. D. at 5% level for comparing age of seedling time of application of nitrogen combination—289. 5. E. of mean. Age of seedlings = ± 100

Time of application of nitrogen = ± 100 . Spacing — ± 82

straw. The yield from 21 days old seedling was significantly superior to 28 days old and 35 days old seedlings. The plot which received $\frac{3}{4}$ th N as basal and $\frac{1}{4}$ th N at tillering was significantly superior to plots which received the other two times of N application. The different levels of spacing did not show any significant difference on the yield of straw. Maximum yield 4225 kg of straw per ha. was obtained from the plots with 21 days old seedlings receiving $\frac{3}{4}$ th N as basal and $\frac{1}{4}$ th N at tillering and wider spacing.

Barthakur and Gogoi (1974) have reported a lower straw yield in crops raised from the old seedlings. This was perhaps due to the fact that they were subjected to intensive competition on account of the over crowded environment in the nursery for a longer time.

സംഗ്രഹം

ഞാറിന്റെ പ്രായം നടുന്നതിലുള്ള അകലം, നൈട്രജൻ ഭിന്നമാത്രകളായി ചേർക്കുക എന്നിവ ഐ. ആർ. 8 എന്ന നെല്ലിനത്തിന്റെ ഉൽപാദനത്തെ ഏങ്ങിനെ സ്വാധീനിക്കുമെന്നു പഠിക്കാൻ ഒരു പരീക്ഷണം, വെള്ളായണി കാർഷിക കോളേജിൽ 1974 ലെ ffl0DC0 വിളക്കാലത്തു നടത്തുകയുണ്ടായി. മേൽപറഞ്ഞവയൊന്നും തന്നെ ധാന്യത്തിന്റെ ഉൽപാദനവർദ്ധനയെ കാര്യമായി സ്വാധീനിച്ചു കണ്ടില്ല. ഏറ്റവും കൂടിയ നെല്ലുൽപാദനം — ഹെക്ടറിനു 3528 കിലോഗ്രാം ലഭിച്ചതു് 28 ദിവസം പ്രായമുള്ള ഞാറു് 28 x 10 സെ. മീറ്റർ അകലത്തിൽ നടുകയുംപകുതി നൈട്രജൻ അടിസ്ഥാന വളമായും കാൽഭാഗം നൈട്രജൻ ചിനപ്പു പൊട്ടുമ്പോഴും കാൽഭാഗം അടിക്കണ പത്മവത്തിലും ചേർക്കുകയും ചെയ്തപ്പോഴാണ്. മുക്കാൽഭാഗം നൈട്രജൻ നടുമ്പോഴും കാൽഭാഗം ചിനപ്പുപൊട്ടുമ്പോഴും ചേർത്താൽ വൈക്കോൽ ഏറ്റവും കൂടുതലായിരിക്കുമെന്നു കണ്ടു. മുറ്റു കറഞ്ഞ ffricooltoi നിന്നു് ഏറ്റവും കൂടുതൽ വൈക്കോൽ ലഭിക്കുമെന്നും തെളിഞ്ഞു.

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