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Note on Time of Seeding and Seedling Age on Performance of Rice

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RICE is a main crop extensively grown in South Gujarat. The date of seeding in nursery as well as age of seedling for transplanting are the important factors in deciding the yield of rice. Bala Subramanium *et al* (1977), reported that 25 days old seedlings are optimum for I. R. 8 and I. R. 20 for early planting. Very little work on this aspect is done in this part of the country. With a view to ascertain time of seeding in nursery and age of seedlings for transplanting for 'GAUR-2', a new variety of rice evolved by the Gujarat Agricultural University in 1976, a field experiment with nine treatments involving all the combinations of (A) and (B) as under was planned and conducted during 1976 *kharif*, at the Navsari Campus Farm, Navsari.

(A) Seeding time in nursery.

(i) — 15th June ... (S_1)
(ii) — 25th June ... (S_2)
(iii) — 5th July ... (S_3)

(B) Age of seedling at transplanting

(i) — 21 days ... (A_1)
(ii) — 28 days ... (A_2)
(iii) — 35 days ... (A_3)

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A spilt plot design, with seeding time as main plots and age of seedling as sub—plots was employed with four replications. Seeding in nursery was done as per treatments. The manuring in paddy field was done @ 12·5 tonnes of well decomposed farm yard manure per hectare, as a basal dose at the time of preparation of land, supplemented with 50 kg N and 50 kg P_2O_5/ha at the time of puddling. Remaining 50 kg N/ha was given in two equal instalments viz. first at the time of tillering and second at booting stage. Transplanting of seedlings was done as per treatments. The spacing adopted was 20 cm × 10 cm.

The data regarding grain yield as well as straw yield per hectare, effective tillers per plant, panicle length in cm, and number of grains per panicle are presented in Table 1.

The data on grain yield presented in Table 1 showed significant differences due to different dates of seeding in nursery, age of seedlings at transplanting and their interaction. Among different dates of seeding in nursery, S_1 (15th June) gave the highest yield (3789 kg/ha) and was significantly superior to S_2 and S_3 (25th June and 5th July) giving 50% and 79% more yield, respectively. As to the age of seedlings, A_1 (21 days old seedlings) was significantly superior to A_2 and A_3 (28 days and 35 days old seedlings). It

TABLE 1

Grain and straw yield per hectare, effective tillers per p-length of panicle and number of grains per panicle as affected by different dates of seeding in nursery and age of seedlings at transplanting.

	Grain yield kg/ha	*Straw yield kg/ha*	*Effective tillers per plant*	*Panicle length in cms.*	*Number of grains per panicle*
Mean for seeding dates					
S_1 June 15, '76	3789	6371	9·57	18·98	114·91
S_2 June 25, '76	2526	6479	7·37	18·10	105·23
S_3 July 5, '76	1771	5285	4·97	15·69	93·08
S. Em.	208	389	0·30	0·10	0·60
C. D. @ 5%	708	N.S.	1·04	0·39	2·09
C. V. %	26·8	21·4	14·23	2·21	2·00
Mean for age of seedling					
A_1 21 days old	3234	6500	8·83	18·82	109·85
A_2 28 days old	2698	6925	6·78	17·23	103·44
A_3 35 days old	2154	5911	6·28	16·63	99·91
S. Em.	104	208	0·37	0·36	0·74
C. D. @ 5%	303	N.S.	1·07	1·07	2·16
C. V. %	13·40	6·10	17·40	7·27	2·50
Interaction					
S. Em.	180	361	0·63	0·63	1·28
C. D. @ 5%	524	N.S.	1·85	N.S.	3·75
C. V. %	13·40	6·10	17·40	7·27	2·50

yielded 3234 kg grains per hectare. The grain yield was reduced to 16% and 33% when A_2 (28 days) and A_3 (35 days) seedlings were used for transplanting, respectively. The treatment combination of S_1A_1 was the highest yielder (4924 kg/ha) and it was significantly superior to rest of the treatment combinations. The second best treatment combination was S_1A_2. The lowest yield (1583 kg/ha) was obtained from the treatment combination S_3A_3.

The straw yields were not affected significantly by different dates of seeding, different ages of seedlings and their interaction.

The data of Table 1 further indicated that the highest number of tillers (9·57) was recorded in S_1 which was significantly superior to that of S_2 and S_3. The number of tillers under S_1 was practically double the one under S_3 treatment. The age of seedling had significant effect in respect of effective tillers per plant, A_1 was superior to A_2 and A_3 with 30% and 31% increase in effective tillers, respectively. The interaction S_1A_1 was also significantly superior to the rest of the treatment combinations in this respect. It had given more than double effective tillers (11·83) when compared with that under S_3A_3 (4·05) the lowest yielder.

The data on panicle length presented in Table 1 indicated that the treatment S_1 achieved maximum (18·88 cm) panicle length and was significantly superior to that of S_2 and S_3. The second best was S_2. The effects of age of seedling were

significant in this respect. The panicle length under the youngest seedlings of A_1 (21 days old) was significantly the longest. The latter two ages were at par. The interaction between seeding date and age of seedlings were not significant in respect of panicle length.

The data presented in Table 1 showed that seeding date, as well as age of seedling and their interaction had appreciable effect on number of grains per panicle. The maximum grains per panicle (114·91) was found under S_1 (15th June seeding). The treatment A_1 (21 days old seedling) gave (109·85) maximum grains per panicle, followed by by A_2 (28 days old seedlings). The maximum number (122·30) of grains per panicle was observed in S_1A_1 treatment combination and was significantly superior to the rest of the treatment combinations. The second best treatment combination was S_1A_2 in this respect. The lowest yielder was S_2A_2.

Based on the above findings the farmers in Bulsar and Surat district may adopt early seeding in nursery in mid of June and transplant them after 21 days in paddy fields in the first week of July for obtaining maximum yield.

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