

## TRANSPLANTING RICE BY BROADCASTING SEEDLINGS

The traditional method of transplanting rice is labour intensive. Due to increased cost and scarcity of labour, timely transplanting is often not possible. A labour saving method of transplanting rice by broadcasting seedlings has been successfully adopted by farmers in Uttar Pradesh. However, such a practice is not in vogue in Kerala. Trials were conducted at the Rice Research Station, Kayamkulam during the wet season (August-September to December-January) of 1990 to test the efficacy of the technology in sandy lowland rice fields of Onattukara in Kollam and Alappuzha districts of Kerala State.

The test varieties were Ptb 20 and Jaya. Ordinary transplanting was compared with seedling broadcasting in large plots of 185 m<sup>2</sup>. Rice seedlings were pulled out in singles with soil surrounding the roots and heaped without caring for its shoot or root direction. Long seedlings of Ptb 20 were topped. The main field was well puddled and levelled. The water depth was maintained at 1-2 cm. Seedlings were broadcast by trained persons. The depth of water was maintained at 1-2 cm for first 5 days in order to keep the seedlings in contact with soil and thereafter at 5 cm. All other package recommendations of the Kerala

Table 1. Ancillary data on the trials

| Variety  | Ptb 20   |      | Ptb 20    |      | Jaya      |       |
|--|----------|------|-----------|------|-----------|-------|
|  | 7-9-1990 |      | 27-9-1990 |      | 27-9-1990 |       |
| Date of planting/broadcasting  | 45       |      | 30        |      | 22        |       |
| Age of seedlings, days   | BRS      | TRS  | BRS       | TRS  | BRS       | TRS   |
| Days to flowering  | 86       | 88   | 68        | 70   | 85        | 88    |
| Height of plant (cm)   | 117      | 98   | 106       | 100  | 83        | 73    |
| No. of hills/m <sup>2</sup>  | 24       | 36   | 24        | 36   | 40        | 60    |
| No. of panicles/m <sup>2</sup>   | 328      | 260  | 293       | 277  | 456       | 408   |
| Grain yield (kg/ha)  | 2178     | 2092 | 2205      | 2100 | 3297      | 2902  |
| Straw yield (kg/ha)  | 4464     | 4183 | 4510      | 4440 | 3514      | 3273  |
| <b>Economics</b>   |          |      |           |      |           |       |
| Cost of transplanting (Rs/ha)  | 200      | 700  | 200       | 700  | 200       | 700   |
| Savings in cost of broadcasting over transplanting (Rs/ha)                       | 500      | -    | 500       | -    | 500       | -     |
| Cost of produce (Rs/ha)  | 9882     | 9413 | 9998      | 9630 | 12527     | 11161 |
| Profit derived by the technology (Rs/ha)   | 469      | -    | 368       | -    | 1366      | -     |
| Net profit of the technology (Rs/ha) (Savings in labour cost + additional yield) | 969      | -    | 868       | -    | 1866      | -     |

1) Cost of broadcasting, 5 men/ha @ Rs 40/man and transplanting, 35 women/ha @ Rs 20/woman

2) Cost of produce @ Rs 3/ kg rice and Rs 70/100 kg straw

BRS = Broadcasting seedlings

TRS = Transplanting seedlings

Agricultural University were adopted (Anon., 1989). Gap filling was done on the 7th day.

The broadcast seedlings anchored themselves and became erect by 7-10 days. The number of hills/m<sup>2</sup> was always low in seedling broadcast plots as against transplanted. Higher number of panicles resulting from heavy tillering was observed in broadcast plots. Similarly, plant height was also more in broadcast plots. The grain and straw yields were maximum in broadcast plots. This increased yield might have resulted from better growth, tillering and increased number of panicles/m<sup>2</sup>.

The increased tillering might be due to zero depth of planting and better establishment of seedlings from easy

rooting. This points out to the possibility of broadcasting rice seedlings in the wet season in Onattukara areas where the water level can be regulated. The soil fertility in this region is low, the nutrient use efficiency of applied fertilizers is also low. Hence, inter-hill competition will be more under high density planting, resulting in poor growth and yield of rice varieties especially high yielding variety.

Seedling broadcasting was economic, compared to ordinary transplanting (Table 1). Ptb 20 sown early or late was profitable by Rs 868-969/ha. High yielding variety Jaya showed a net savings of Rs 1866/ha. The main advantages of the technology are the savings in labour and the easiness in the transplanting operations.

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## REFERENCES

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