

The System of Rice Intensification

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THE KADIRAMANGALAM SYSTEM OF RICE INTENSIFICATION

(developed and practiced in the village by Mr S. Gopal, a B.Sc graduate of the Cauvery Delta zone of Tamil Nadu State)

This system has been developed in Tamil Nadu State of India, using SRI ideas and practices to come up with a methodology particularly suited to local conditions in the Cauvery Delta region. The concern of farmers there is that very young seedlings will be desiccated by the intense sun and continuous wind. Transplanting very young seedlings in clumps of five for their first two weeks out of the nursery gives them some protection against sun and wind. Retransplanting them singly after two weeks means that they are then stronger and able to grow vigorously with no mortality. Farmers find that the plants' performance is enough better to justify the additional labor. The yield results, average 7.5 t/ha, are very rewarding.

OBJECTIVES

1. Reduce input costs, with higher returns.
2. Give young rice plants the best opportunity for growth by transplanting seedlings a second time at 30 days, one seedling/hill, after they are first transplanted at 12 days in clumps. This gives them more protection from the sun and air currents that can desiccate them in local climatic conditions.
3. Transplant seedlings in a square pattern to give them ample growth space above and below ground.
4. Use a cono-weeder ('rotovator') to improve soil conditions as well to accomplish weeding to support better plant growth.
5. Carry out irrigation so that water is applied only once the soil becomes dry, to keep it moist but never saturated. This reduces irrigation water requirements by about 500mm.

NURSERY PREPARATION

1. A place with suitable irrigation and drainage facilities is needed to get good seedlings within 12 days.
2. A nursery area of 100 sq. m. is prepared. This is all that is required for planting one hectare of crop (just 2.5 cents).
3. A 300 gauge polythene sheet, 200ft in length and 1m in breadth, is required for raising enough seedlings for one hectare.
4. A frame with dimensions of 1m length, 0.5m breath and 4cm height, is required for sowing the seeds.
5. The frame is filled with press-mud or other compost.
6. 5kg of sprouted seeds, treated with azospirillum and phosphobacterium, are required for sowing one hectare. These are planted at the rate of 45g per compartment, and the seeds are covered lightly with sieved press mud.
7. Watering is done with a sprinkling can twice daily until the fifth day.
8. A 0.5% urea spray is applied on the 8th day, dissolving 150g in 30 liters of water.
9. Twelve-day-old seedlings, with their roots and seed sacs still kept

in the cake, are taken to the main field.

10. A small area of 8 cents in one corner of the field is prepared for transplanting these young seedlings. It is enough for later transplanting one hectare.

11. In this small portion, 4 to 5 seedling are planted per hill at a square spacing of 15cm between hills.

12. On the 15th day, 0.5% urea spray is given.

By 28 days, the paddy seedlings will be well-grown, 25cm height, with good root growth.

SECOND TRANSPLANTATION: At 30 days, the seedlings are carefully removed from these first hills and are separated and spread over the entire main field, with a spacing of 20x20cm between single plants. This work can be done for a hectare by 15 laborers in one day.

ADVANTAGES OF DOUBLE TRANSPLANTATION

1. Seedlings are well grown, and there is zero mortality.
2. As the seedlings are well grown, there is little or no weed problem.
3. As the seedling are tall, they are able to tolerate standing water from day one, which permits weed control by flooding.
4. Separation of single seedlings is much easier.
5. Establishment of the crop is much faster, and it is possible to work with the cono-weeder from the 10th day.
6. No special training or effort is needed for this technology as all preparations can be done the same way that farmers usually practice rice cultivation.

WEED MANAGEMENT: On the 10th day after this second transplanting, a cono-weeder is drawn along and across the rows of plants, being pushed 3 to 4 times in both directions. There is a saving of 10 labor-days/ha as this single weeding is sufficient.

FERTILIZATION

1. First, phosphorous and potash fertilizer is applied as a basal dose.
2. On the 15th day after cono weeding, 30kg of urea is applied.
3. Again on the 30th day, 30kg/ha is applied.
4. On the 45th day, 30kg/ha along with 30kg potash is applied.

YIELD: 7.5 tons/ha

REMARKS: This information was provided from Kadiramangalam village, by Rajesh Kumar and Sourav Nayak who are the assigned agricultural extension personnel. They testified that this modified system of rice intensification developed and practiced in the village by Mr S. Gopal, a B.Sc graduate, is well suited for the Cauvery Delta zone of Tamil Nadu State.

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