

Pest and disease management

- Wider spacing and use of organic manures results in healthy growth of the plants and incidence of the pest and diseases is naturally low.
- Adopt preventive and / or need based plant protection measures as and when required by using some organic concoctions.

Advantages of SRI Method

- Higher grain and straw yield.
- Reduction in the total duration by 10 days.
- Savings in inputs viz., seed, chemicals etc.
- Less water requirement-saves water by about 50%.
- Better grain filling and less chaffy grain.
- Higher grain weight without change in grain size.
- Higher head rice recovery.
- Improvement in soil health through biological activities.



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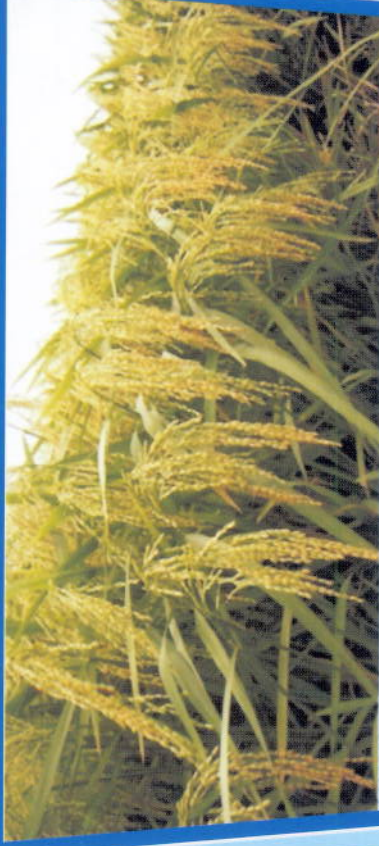
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System of Rice Intensification (SRI)

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System of rice intensification (SRI), an emerging water saving technology, was developed by Fr. Henri De Laulanié, a French priest with a background in agriculture in Madagascar during 1980's. This method of rice cultivation involves the set of certain management practices for plant, soil, water and nutrient, which provide better growing conditions for rice plants especially in the root zone than those for plants grown under traditional practices. SRI appears to be a viable alternative that not only saves the inputs, but also improves soil health/quality and protects the environment sustainability. SRI technology needs less seed, water, chemical fertilizers and pesticides but yields more with large root volume, profuse and strong tillers with longer panicles, more and well-filled spikelets with high grain weight. The potential benefits of SRI are being tested now in predominantly rice growing countries like India, China, Indonesia, Cambodia, Thailand, Cuba, Bangladesh and Sri Lanka. The agro-techniques developed for SRI method of rice cultivation at Central Rice Research Institute are cited below:

Six Important Practices to follow

- Plant very young seedlings (8-12 days).
- Plant single seedlings per hill carefully and gently.
- Maintain wide spacing in a square pattern.
- Use mechanical weeding (rotary hoe).
- Keep the soil at saturation during vegetative growth phase and shallow water (2-3 cm) at flowering and grain filling stage.
- Apply organic manure or other organic amendments to improve soil quality.

Selection of suitable soils

- Land selected for SRI cultivation should be well leveled.
- Fertile soil with high soil organic carbon is most suitable.
- Soils which are affected by salinity/ alkalinity are not suitable for SRI cultivation.

Land preparation

- Prepare the land carefully by proper ploughing, puddling, leveling and raking as in conventional method.
- Keep 25-30 cm wide channels at every three meter intervals across the field.
- Make small plots for easy and efficient water management.

Seed rate

- Five to six kilograms of pre-soaked sprouted seeds would be needed for transplanting in one hectare.

Nursery management

- Keep the seedbed as close as possible to the main field.
- Prepare nursery beds of one-meter width of convenient length.
- Place wooden planks or bamboo silts all around the bed for support
- Use healthy seeds, soak in water for 24 hours and leave it to germination for 24 hours.
- Level the seedbed and spread a thin layer of well-decomposed FYM on the bed.
- Broadcast the sprouted seeds sparsely and evenly.
- Apply another layer of FYM to cover the seeds.
- Mulch with paddy straw to prevent the seed from exposing to sun, rain, birds etc.

Transplanting

- Use young seedlings of 8 to 12 days old or at two- three leaves stage.
- Remove the seedling from the nursery along with seed sac, soil and roots intact.
- Transplant seedling carefully without plunging too deep into the soil.
- Transplant seedling immediately after gently removing seedlings from the nursery bed.
- Seedlings should be placed on the ground at the appropriate point on the planting grid.
- Plant the seedling widely with row to row distance and plant to plant distance should be 10 x 10 inches i.e., 25 cm x 25 cm (16 plants /m²).

Nutrient management

- Apply N, P₂O₅, K₂O @ 60:30:30 kg/ ha and 80:40:40 kg/ha in the wet and dry season, respectively.
- For better soil health apply nitrogen in the form of well decomposed organic manure (FYM, Vermi-compost etc.) or green manure (Azolla), and inorganic sources in 50: 50 proportions.
- In highly fertile soils, instead of chemical fertilizers, application of FYM or compost @ 10 t/ha is quite sufficient as source of nutrients.

Water management

- Do not allow water stagnation under SRI method.
- Adopt alternate wetting and drying system of water management to keep the soil moist and create aerobic / anaerobic soil conditions for better nutrient mobilization by soil biota.
- Irrigate the field on the previous evening before the periodic weeding and drain out water in the morning to facilitate rotary weeder operation.

Weeding and inter-culturing

- Herbicides are not recommended under SRI method.
- Use simple mechanical rotary weeder/cono weeder to churn the soil for weed control.
- Do the first weeding at 12 to 15 days after transplanting.
- Subsequent weeding may be required at intervals of 10 -12 days till 40 days after transplanting.
- Working with rotary weeder helps in greater aeration, which results in more root growth, reduced weed competition, more oxygen and nitrogen to roots.