



Nursery Management for Manually Transplanted Rice to Develop Nursery Enterprise

With uncertain rains there is often delay in the rice transplanting and in some cases the newly transplanted fields are damaged by standing due to heavy rains. Therefore, the demand for rice nurseries is set to rise if quality rice nursery is made available to farmers.

Depending on the transplanting method, irrigation facility, availability of labour and agricultural implements, the rice nursery can be raised by following 10 management tips:

1. The best performing and most popular variety or the hybrid of the area should be selected for nursery market.
2. Select an area near a reliable source of irrigation, with good drainage facility and free from shade.
3. **Seed bed preparation for wet nursery to transplant an acre area:** A nursery area of 300 to 400 m² will be enough to produce healthy and robust seedlings with high seedling vigour for transplanting 1 acre. It can be prepared as follows:
 - ♦ Plough the field twice with harrow after harvest of rabi crops.
 - ♦ Add 2 q/300 to 400 m² of FYM or compost in the nursery area at least 25-30 days before sowing and mix it well in the soil by ploughing twice.
 - ♦ Add water to the nursery field and puddle it 1-2 times by paddy puddler or rotavator followed by planking.
4. **Seed quality:** Certified seeds of HYV or Hybrids should be purchased from a reliable source preferably by authorised dealers. Seeds should be clean (Containing no seed, soil or stones), pure (only one variety) and healthy (same color, fully filled grains, no cracks) if using own seeds of HYVs.
5. **Seed soaking treatments:** Before sowing, soak the seeds into water in a bucket and stir gently. Thereafter, discard all grains which float on the surface of water and use only healthy seeds for nursery. Use saline water treatment if own seed is being used. 1 kg salt (Sodium chloride) in 10 litre water is enough for 1.5-2 kg seed screening at a time. Remove the floating seeds and use the heavier seed which settle down at the bottom. Rinse them in fresh water 2-3 times before sowing.



- ♦ Use sprouted for sowing. To achieve this, the seeds are soaked into treated water (Bavistin 2g/kg or raxil 1g/kg seeds in 1 lt water) over night. Then, drain the water and incubate (cover and keep moist) the soaked seeds in gunny bag in a well ventilated place under shade at room temperature for 24-36 hours till it sprouts. To prevent sprouts intermingling with each other, sprout length should not be more than 7-8 mm.
6. **Seed rate and sowing:** Seed rate of 25-40 gm⁻² for HYV (10-16 kg/300 to 400 m²) and 15 gm⁻² for Hybrids (5-6 kg/300 to 400 m²) is optimum. Use lower seed rate (25-30 gm⁻²) (10-12 kg/300 to 400 m²) for HYV, if aged seedlings are to be transplanted.
- ♦ Broadcast the sprouted seeds uniformly with a mild force onto the raised bed to fix them in the puddle soil. This would help seeds to anchor quickly and not to be carried away by the irrigation/flood water.
 - ♦ Protect seeds' damage from birds, squirrels, other animals and pets.
7. **Sowing tome and seedling age:**
- ♦ Long duration varieties: 1-25 May & use 30-35 days old seedlings
 - ♦ Medium duration varieties: 15 May to 15 June & use 25-30 days old seedlings.
 - ♦ Short duration varieties: 10-25 June & use 20-25 days old seedlings.
- ♦ Use younger seedlings of 15-25 days when conditions are favorable and hydrology is well controlled.
 - ♦ To cope with submergence and salt-stress during early establishment, use older seedlings (30-40 days) as being taller, sturdier and healthier perform better than younger ones.
 - ♦ For short duration drought tolerant varieties, younger seedlings of 25 days will be a better choice.
8. **Nutrient management:** Apply 4.0 kg DAP, 2.4 kg MOP and 1.0 kg zinc sulphate as basal in the said nursery area (300-400 m²). Then apply 2.8 kg area after 13-15 days of sowing. Another dose of urea (2.2 kg) may be applied one week before uprooting if aged seedlings of more than 30 days are to be transplanted late. Spray the nursery with 0.5% ferrous sulphate, if iron deficiency symptoms appear.
9. **Weed Control:** Apply soft (Pretilachlor 30 EC+safener) 60 g in the nursery area by mixing it with 5-6 kg sand at 1-3 days after sowing in standing water.
10. **Irrigation:** Apply light irrigations to the nursery area particularly in the evening so that the field remains wet and there is no standing water during intense heat hours of the day to save the young tender seedlings from heat exposure. Apply water before uprooting to make it easy. Pull out the seedlings by holding them at the base and make small bundles for easy transportation.



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Note: The cost-benefit analysis is required by taking 25% extra cost into account for unsold seedlings before the start of rice nursery enterprise.