

What is machine transplanting of rice

Machine transplanting involves planting young rice seedlings into puddled soil by machine.

Why machine transplant rice

Machine transplanting requires considerably less time and labor than manual transplanting (1-2 ha/person/day versus 0.07 ha/person/day).

Advantages: Machine transplanting

- Fast and efficient (1-2 ha/d), uses less labor and ensures timely planting.
- Reduces stress, drudgery and health risks.
- Ensures uniform spacing and plant density.
- Seedlings recover fast, tiller vigorously, and mature uniformly.

How to transplant rice by machine

1. Raise seedlings in special mat nurseries or in seedling trays. Use 18-25 kg of good seed per 100 m² of nursery for each ha.
2. Seedlings will be ready for transplanting in 12-15 days after seeding (DAS).
3. Ensure that fields are well puddled and leveled.
4. Drain fields and allow mud to settle for 1-2 days after the final puddling.
5. The subsurface soil layers need to be hard enough to support the transplanting machine.
6. The soil is ready when a small "V" mark made in the puddled soil with a stick holds its shape. At this moisture level, the soil can hold the seedlings upright.
7. Soil should not be so dry that it sticks to and interferes with planting parts or wheels of the transplanter.
8. Load the seedling mats on the machine and transplant the seedlings at the selected machine setting.

Limitations

- Seedlings must be planted while still young, and so mechanical transplanting is best suited for irrigated areas only.
- Special nursery management is needed (mat nursery or seedling trays).
- Good land preparation, leveling and water management are required.
- Fields need good access for machine transport and field entry.
- Transplanting machines are expensive; so poor farmers cannot afford them (contract hiring of transplanters is available in some countries).
- Problems in poorly prepared and leveled land, or with poorly designed machines.
- Good training is needed to operate the machine properly.



Seedlings in a mat nursery



Puddle and level soil



Allow the mud to settle to support the transplanter



Load seedling mats to the transplanter