

Mechanical Transplanting of Rice



www.rkbassam.in

Mechanical Transplanting transplants specially raised young seedlings in mat-type nursery by using self-propelled mechanical transplanter at predetermined and desired spacing.

Advantage: It's a cost-effective crop establishment method as compared to traditional manual puddled transplanting of rice. The fundamental drivers of change in favor of this technology are high cost of transplanting due to rising scarcity and increase in wages of labor, and timeliness of crop establishment leading to enhanced overall system productivity. In Assam, where there are scope of double-cropping of rice (i.e. rice-rice system), the working area and profitability of each machine can be doubled in comparison to rice mono-cropping system, and thus it makes a strong business case for mechanical transplanting is the process of case for sustainability and scalability.



Raising mat-type nursery: In this system, the seedlings are raised on thin soil layer placed on perforated polythene sheet which arrests the penetration of nursery roots into the soil below the polythene sheet. Consequently, the dense mats of roots formed above the polythene sheet are easy to uproot, and transplanted by the machine. The nursery may be of both, wet type or dry type.

Machine Transplanting: While transplanting, maintain saturation level or 1-2 cm of standing water in the field. Puddle the field well before transplanting so that soil in the field is settled properly. The soil should be puddled 1-2 days before the day of machine transplanting. Under freshly puddled conditions, soil cannot make a strong grip on the seedlings. Even excess standing water (>2cm) at the time of transplanting, will loosen the soil grip on the seedlings.

- Drain out excess water from the field for better operation and root anchoring. It will be more viable to irrigate field 24 hours before transplanting for smooth operation of machine. This also leads to better anchorage; thus have lesser load of manual gap filling.
- 15 to 20 days old seedlings are transplanted. Optimum depth of planting of the seedlings is very important. Shallow depth results into uprooting of seedlings with mild flow of water or wind. Whereas more depth results in sinking of the planted seedlings, thereby creating the risk of rotting and/or poor tillering. The planting depth can be set at the desired depth simply by sliding the lever handle.
- There should not be standing water in the field for a week after transplanting.
- Before cutting the mat, ensure that the nursery is dry. Use a sharp sickle/knife to cut the mats in desired size, based on the seedling platform of the paddy transplanter used.
- While transporting to long distance, make sure that the mats do not dry out.
- Place the cut mat pieces at the two opposite bunds of the field in the direction of transplanting for the ease of loading.
- Before start of transplanting, make sure that all the fingers of the transplanter are in working condition.
- Transplanting should be started by leaving the space equal to the width of the transplanter at four sides of the field near the bunds.