Wet direct seeding

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Rice Fact Sheet

What is Wet Direct Seeding?

In wet direct seeding, seed is normally pre-germinated prior to broadcasting or drum seeding for line sowing onto recently drained, well puddled seed beds. Wet direct seeding is more commonly used in irrigated areas.

Why Use Wet Direct Seeding?

- Easier (less drudgery) and more timely crop establishment
- Reduced labor costs for crop establishment Possible savings in water use

1. Ensure the field is well leveled, well puddled and weed-free

1. Plant the field within 25 days after the final puddling. At this point the soil has settled to be solid enough to hold seed on or near the surface and weeds have not yet established. If seed is planted more than 1 cm deep, it will usually have problems in emerging.
2. In drained fields, small channels can be made across the field a couple of days after puddling to further help drain the field and avoid snail damage and seed emergence problems in areas with standing water.

Surface broadcast wet seeding

Broadcast seeds on soil surface are more susceptible to bird and rat attack

Drum seeding on surface

Partially submerged seeds can have problems of emerging

Subsurface drum-seeded crop

Drum-seeded crop

The process :

1. Soak the seed for 12 hours in water, drain and cover with wet gunny bag for 48-72 hours for sprouting. During this time the seedling root will emerge 23 mm. If the seed is left longer, the sprouted radicles may entangle making it difficult to separate the seed, and thus causing damage to the seed when planted.
2. Use recommended dose of seed @ 40 kg/ha. Leveling of field is necessary for smooth machine operation, uniform germination and better weed management.
3. If water in the fields is muddy following the last working, allow the field to dry for a time period of at least 2-3 days before seed broadcasting or line sowing through drum seeder.
4. Sow the seed uniformly: Mark the field in 5 m wide strips (the typical distance over which seed can be uniformly distributed by hand). Divide the seed into uniform lots to allow the person to sow the field, and back (i.e., a 10 m wide strip) before getting the next seed lot.(e.g., the field is 20 m wide, then there will be 4 passes of 5 m each and the seed should be divided into 2 equal size seed lots).
5. Broadcast the seed into1-2 cm of standing water or on to the drained field. If the field is drained, the soil should hold a "v" shape when a stick is run through the mud. This indicates a soil consistency that prevents seed sinking too deep.
6. Line sowing with drum seeder will help in uniform plant population and proper distance which will also help in efficient weed management through mechanical methods like cono-weeder or power weeder.

Limitations:

- Good land preparation, leveling and water management are needed for uniform crop establishment.
- Weeds are very serious in direct seeding through drum seeder or broadcasting.
- Eating of sprouted seed through birds, snails and rats can severely reduce plant stands in direct seeding method.
- Heavy rainfall at the time of crop establishment can result in crop establishment failure. (especially in heavier clay soils), and if water sits over seed still germinating below the soil.
- Longer care of crop main field by 515 days, compared to transplanted rice.
- Initial phase of crop establishment need frequent irrigation during summer season for better crop establishment
- High water and nutrient use in dry seeding (due to high percolation especially on light soils)
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Assam Agribusiness and Rural Transformation Project (APART)

The World Bank is the funding agency of APART
Department of Agriculture, Assam is the nodal department for implementation of APART
ARIAS Society is the State level coordinating and monitoring agency for APART
Assam Agricultural University is the leading Agricultural University of the State and implementing agency of APART, imparting research and scientific support.
International Rice Research Institute (IRRI) is the rice global leader providing technical and hand-holding support in the implementation of APART