



D. Re-circulating Batch Dryer - for rice mills and cooperatives. Drying time: 6-8 h. Capacity: 4-10 t/batch.

- **Pros:** Even drying, automatic operation, affordable
- **Cons:** Wear of mechanical components

E. Continuous Flow Dryer- for large commercial facilities. Drying rate: 1-2% Capacity: 10 t/hour.

- **Pros:**High capacity, automatic operation.
- **Cons:**Capital intensive, requires large volumes.



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

PADDY DRYING SYSTEMS



Importance of drying the paddy properly

Rice is usually harvested at grain moisture content (MC) between 20 and 25% (wet basis). Any delays in drying, incomplete drying, or uneven drying will result in qualitative and quantitative losses .

- Improper drying causes higher percentage of damage in head rice.
- Reduces milling yields and increase broken percentages caused by high temperatures and re-wetting of grains.
- Loss of germination and vigor due to grain respiration, mold and insect activities, or exposure of grains to temperatures above 42°C.
- Increased damage caused by insects, as they are more active at higher MC levels.

Some recommendations for drying the paddy

- Dry the grains/seeds immediately after threshing of paddy. Avoid field drying of paddy in bundles.
- Clean the grains before drying to avoid uneven drying and wet spots.
- Dry the paddy upto 14% moisture content for milling purpose, so the grain weight and milling yield will not decrease.



- While storing for 8-12 months, for grain, dry upto 12-14% MC.
- For seed dry the grains upto 9-12% MC
- Do not mix grains maintained at different MCs to avoid cracking.

Methods of drying the paddy

- A. **Sun drying** - Sun drying continues to be the preferred drying method in Asia because of its low cost. However it is labor intensive and control of grain temperature is difficult.

For optimum quality:

- Spread the grains in thin layers (3-5 cm)
- Spread the grains over a tarpaulin sheet to

avoid moisture gain from surface if minimize losses.

- Cover or collect the grains during rain
 - Mix frequently, at least every 30 minutes intervals
 - Monitor the grain temperature and moisture content
 - Shade or cover when grain temperatures are above 50°C (42°C for seeds)
- B. **Solar bubble dryer**- for farmers, contractors, small rice mills. Drying time: 6-8 h. Capacity: 0.5-1 t/batch. Takes 2 days during rainy reason. Protect grains from rain. Transform solar energy into heat. Lead the drying air over the grains.

Heated air drying

- C. **Flat Bed Batch Dryer** - for farmers, contractors, small rice mills. Drying time: 6-8 h Capacity: 4-10 t/batch.

- Rice husk furnace
- Air velocity 0.2m/s
- Drying air temp. 43°C
- Bulk depth 30 cm
- Drying rate 1-1.5%/h

