

How to use a Dryer

What is a dryer?

A dryer is a mechanical device or machine that removes the water from wet grains by forcing either ambient air or heated air through the grain bulk.

Why is proper usage of a dryer important?

Any delay in drying of wet paddy leads to rapid deterioration of quality. A dryer that does not perform well or is operated in the wrong way can cause several problems:

- Extended drying time due to inefficient air delivery or low temperature
- Uneven drying of the grains due to uneven airflow or too high temperatures (batch dryers)
- High fuel consumption due to ineffective air distribution or too high airflow rates
- Low germination rate due to too high drying air temperatures
- High number of broken grains due to mixing of dry with wet grains or moisture gradients
- Fire hazard and danger of CO poisoning of operators from using unsafe burners



How to Dry

For optimum drying apply proper pre-drying management and operate the dryer according to the manual.

Before drying

- Prevent any delay in drying after harvest. If you can not dry the paddy to the desired moisture content at least pre-dry to 18%, which is safe for temporary storage for up to two weeks.
- Clean the grains before drying to avoid uneven drying and wet spots.
- Do not mix grain with different moisture content to avoid cracking.
- Read the operators manual of the dryer and familiarize yourself with the operation.

Using the dryer

- Load the dryer with wet paddy, consider minimum load and don't overload.
- With very wet paddy or when paddy lots with different moisture content are mixed aerate or circulate the grains for 15-30 minutes before turning the heater on for reduction of broken grains.
- In a batch dryer with more than 30cm grain depth mix the grains at least once for more even drying.
- Monitor grain temperature and moisture content to prevent excess temperatures and over-drying.
 - Dry paddy after harvest to 18% MC for storage up to two weeks.
 - Dry paddy for milling to 14%. Drying below 14% reduces weight and milling yield.
 - For 8-12 month storage dry to 13% or less, for long term storage exceeding 1 year to 9%.

Safety precautions

- Always operate the dryer as described in the manual
- Service burners or furnaces regularly to prevent fire hazards and excess CO production and have a fire extinguisher at hand
- Make sure that fuel cut-of valves that disconnect the fuel supply in case of power cuts are functioning
- Ensure proper ventilation of the working area to prevent CO poisoning.

For more information contact

Agricultural Engineering Unit
IRRI, DAPO Box 7777, Metro Manila, Philippines
Tel.: (63-2) 580-5600, Fax.: (63-2) 580-5699
Email: M.Gummert@cgiar.org
J.Rickman@cgiar.org