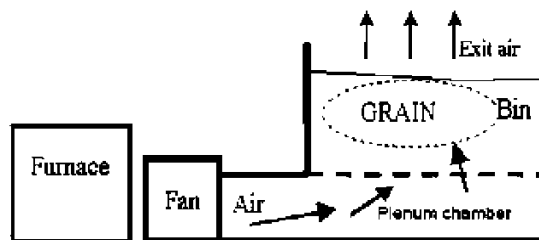


What is a flat bed dryer?

A dryer is a machine that removes the water from wet grains by forcing heated air through the grain bulk. In a flat bed dryer, the same quantity of grain is kept stationary in a holding bin until drying is completed. A flat bed dryer consists of a drying bin, an air distribution system with a plenum chamber, a fan, and a furnace or burner for heating the drying air.



Some problems in drying operation: causes and remedies

Symptoms	Causes	Remedies
Grain breakage upon milling	<ul style="list-style-type: none"> Too high drying temperature Immediate milling after drying 	<ul style="list-style-type: none"> Adjust drying temperature to below 45°C. Wait 1day before milling.
Loss of germination due to drying	<ul style="list-style-type: none"> Too high drying temperature 	<ul style="list-style-type: none"> Adjust drying temperature to below 42°C.
Non-uniformity of final MC (more than 2.5 %)	<ul style="list-style-type: none"> Packed bed due to excessive stepping over Non-uniform material (mixed wet and dry, clean and dirty grain) Non-uniform grain depth Perforated floor is partially stuck (holes are filled with dust) 	<ul style="list-style-type: none"> Avoid stepping on the grain mass (use a wood board if necessary). Pre-clean the grain to remove gross impurities. Adjust depth at local spot after 2/3 of the drying time is spent. Clean the floor after three batches.
Too much ash in the plenum (under the bin)	<ul style="list-style-type: none"> Ash precipitation chamber full of ash Exit spout of the furnace too close to the fan inlet 	<ul style="list-style-type: none"> Clean ash from the precipitation chamber Move the spout farther from the fan inlet
Smoky combustion	<ul style="list-style-type: none"> Excessive husk feeding rate Lack of secondary air for combustion Wet rice husk 	<ul style="list-style-type: none"> Reduce feeding rate. Check the air inlet supply. Use dry rice husk.
Prolonged drying time	<ul style="list-style-type: none"> Not enough airflow Leakage of drying air Very wet intake paddy Close shed, not suited for ventilation 	<ul style="list-style-type: none"> Increase engine speed (diesel engine) or change pulley size (electric motor). Close leak points. Reduce grain layer depth. Clear obstruction around the shed.

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