

Rice Postharvest Handling

1. Postharvest System

- The postharvest system consists of a set of operations from harvest to consumption.
- An efficient postharvest system aims to minimise losses and maintain quality of the harvested crop until it reaches the final consumer.
- Rice postharvest system consist of the following operations: (a) Harvesting, (b) Threshing, (c) Cleaning threshed grain (d) Drying, (f) Aggregation and storage, (g) Milling (h) value addition (i) Marketing.
- Postharvest losses in rice are estimated at 30-40% due to inefficient postharvest handling operations.

2. Harvesting

- Harvesting is the process of collecting mature rice crop from the field.

3. Threshing

- Threshing separates the grain from the chaff, and produces paddy rice (threshed grain with hulls).
- Threshing should be started immediately after harvesting (within 24 hours after harvesting).
- In Kenya, threshing is done manually and also by use of paddy threshers.

- Grain damage should be minimised during threshing as damaged grain is much more prone to attack by insects and moulds.

4. Cleaning grain after threshing

- Cleaning paddy rice after threshing improves its storability, milling output, and quality, and hence its market value.
- Cleaning removes impurities such as straws, chaff, weed seeds, leaves, pods, sticks, broken grain, stones and other foreign matter.
- Cleaning is often done manually by winnowing.
- Insect damaged and mouldy grain are removed by hand picking.

5. Drying of threshed paddy

- Rice paddy should be dried to a moisture content of 13-14% for safe storage and milling.
- Sun drying is commonly used by spreading the paddy on tarpaulins over a given period to dry.
- Small-scale driers can also be used.



Fig1. Threshing of paddy
Source: Rice MAPP



Fig 2. Winnowing of paddy rice
Source: Daily Nation



Fig 3. Drying of paddy rice on concrete floor
Source: Lusike Wasilwa

Dryness is checked using moisture meters. Dry grain (13-14% moisture) also breaks easily when bitten between the teeth.

6. Paddy aggregation and storage

- This involves bulking of paddy rice by cooperative societies, farmer groups and millers.

7. Milling

- This is the process of removing husks and bran from paddy rice to produce white rice grains.
- Milling of paddy rice in Kenya is done by commercial rice millers; and smallholder millers in village mills.

8. Marketing

- In Kenya, rice is marketed through (a) Government agencies (National Irrigation Development Authority, National Cereals and Produce Board, Lake Basin Development Authority); (b) Marketing cooperatives; (c) Private companies; and (d) small-scale traders.
- All the rice produced in Kenya is consumed locally, with a major production gap. Kenya imports 90% of its rice from Vietnam, India and Pakistan.