

Reducing post-harvest loss

AS the growing season draws to an end, many farmers are thanking the Lord for the abundant harvest they expect.

Fast maturing grains are already being prepared for storage. Warm places that have received good amounts of rains that are well-distributed are always the first ones to harvest. As the harvest comes to a stop and the grains are safe in the store, farmers still have to solve an even bigger problem of controlling post harvest losses.

Post-harvest losses of grains are through rats, mice, birds, insects and moulds. The losses occur between the completion of harvest and the moment of human consumption. These losses are any change in availability, edibility, wholesomeness or quality of the food that prevents it from being consumed by people.

Reduction of post-harvest grain loss can increase available food supplies. It has been noted that these losses are highest where the need is greatest ie in developing countries.

Field practices to produce crops can only be justified through yields. If the methods of storing the products are not considered in the initial production plan, most of the effort to produce will be put to waste. Beside reducing the losses, proper storage facilities makes it easy to handle the grains.

Container

To reduce grain losses, every storage container should have the following qualities:

- It should keep grain cool and dry. Keeping the grain cool and dry protects it from attacks by moulds and insects which prefer warm and damp places.
- It should protect the grain from insects.
- Should protect the grain from rodents.

The above should be achieved through the following practices.

- Drying grain to 12-13 percent moisture contents before putting it into storage. Most farmers have known through experience how to arrive at a safe moisture level. This level is when the grain has been air dried and it looks and feel completely dry.

- Old grain, dust, straw and all insects should be

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removed before putting clean grain. They have to be removed because they normally harbour insect eggs. Those that have turned mouldy would spread the moulds very fast to the new grain.

- Keeping the grain cool and protected from large changes in outside temperatures. This can be achieved by using building materials which do not easily pass on changes in outside temperatures to the stored grain, keeping or building storage containers away from direct sunlight and painting the containers white can help achieve this.

- Protecting grain from insects by following rules for cleanliness and drying, applying insecticide and/or putting the grain into airtight storage.

- Water proofing the buildings and containers. Storage buildings should be built in well-drained locations. They should not be placed where they will be flooded by ground water or runoff during heavy rains.

- Making sure containers are rodent-proofed in all possible ways.

- Checking the grain regularly while in storage to make sure it is not infested and recleaning to destroy insects found.

Ways of storing grains need not be expensive for the farmer. Each farmer need to assess his situation and choose a way of storing his grains that is most convenient for him. Some of these methods are discussed here.

Using sacks

Several farmers use sacks to store their grains. Their advantages include the fact that they are easy to handle, they can be stored in a farmer's house, and they can be stored in communal building because



A storage facility: The facility should keep the grains cool and dry to protect them from attacks by moulds and insects which prefer warm and damp places (File picture)

the sacks are easy to label. If sacks are arranged with air spaces between them, the grains that are not completely dry can be stored. The free air circulation will continue to dry the grain, as they are stored. Sacks need to be boiled in hot water, dried in the sun and holes mended before the next crop is put.

Using airtight storage

To store grain in airtight storage, they must first be dried to less than 1.2 percent moisture content. The grains are then kept into containers which keep air from getting into the grain. Therefore, no further drying takes place. Insects and moulds require oxygen to survive. Any air that

is still trapped in gets used up and any insects or moulds present die. Airtight storage facilities available for the farmers include metal drums, plastic tanks and covered gourds painted with varnish. The main advantage of using airtight storage is that, it eliminates the need for pesticide use.

Use of underground pits

One unexploited way of storing grains is use of underground pits. Pits have been used in other countries to store sorghum, maize, wheat, peas and beans. The earth keep the grains cool.

Hidden pits have been used as a guard against grain theft. To ensure no losses occur the pits need to be lined

with straw, mat lining, plastic bags or concrete lining.

Improved traditional stores

Stores woven on the sides and roofs thatched are a common site in Kenya. To improve them, the roofs can be made of iron sheets that won't let in rain water. They are kept off the ground using posts that have rats proofs on them.

All storage facilities need to be cleaned and repaired before use. Cracks and holes should be sealed so that insects and rodents don't get in. Minute holes need to be sealed too. If all this is observed, loss of grains will be reduced and food availability for the farmer will be more.