

Storage and preservation of maize grains in improved earthen granaries

After shelling, winnowing and sorting, and drying, maize cobs can be stored in bags or a metal silo for long-term storage or stored in improved earthen granaries. This type of granary is found much more in the north of Benin, where it serves not only to preserve maize grain but also sorghum. The base is used as a chicken coop for domestic poultry. This leaflet describes best practices for storage and storing maize grain in this type of granary.

Quality of the maize to be stored

Before storing maize, you must:

- Ensure that maize is free from impurities; otherwise, proceed with cleaning and sorting to remove mouldy, damaged, perforated kernels and also foreign bodies (leaves, pebbles, insects, etc.).
- Ensure that the grains are dry. If not dry, reduce the moisture content to between 12% and 13% (well-dried grain makes a cracking noise when broken by teeth).
- Proceed, in case of long-term storage, to disinfect the grains by preservatives in order to avoid infestation of the stock by insects.

Earthen granaries

This type of granary is an improvement of the traditional earthen granary which is often on the ground or on reeds (Fig. 1). The closed improved earthen granary (Fig. 2) comprises three parts: the body of the granary whose interior is generally partitioned into 2 to accommodate different commodities (Fig. 3) and equipped with two safety valves, which enable sampling; the lower part of the barn serves as a chicken coop and the roof consists of a lid in the form of a slab and a straw roof.

The Improvements

1. *the chicken coop under the granary - Fig.5*
2. *stone basement (wooden front) - Fig.5*
3. *partitioning (storage for two cereals) - Fig.3*
4. *valves (one in each compartment)*
5. *slab cover - Fig.2*

Conditions of good storage and preservation of maize in the earthen granary

- Whatever the type of granary, first clean and disinfect it from the inside.
- The granary must not be cracked and should be protected with straws against severe weather.
- The outside, i.e. all around the structure must be clean and dry. It must be cleaned regularly.
- The granary and covers must be in good condition.
- For a long shelf-life, preservatives that are



Fig. 1: Improved reed granary



Fig. 2: Improved Traditional attic Granary

authorised and recommended by the Ministry of Agriculture (Fig. 4) may be used.

- Each compartment in the granary must contain clean maize grains free from any infection or infestation.
- After removing an amount of maize from a compartment, you must not fill it up with another amount of maize.
- After removing a portion of stock from a compartment, close the door tightly.

Monitoring stored maize

Monitoring of stored maize during the storage period is very important in order to ensure a good stock quality.

Therefore, it is necessary to:

- Avoid putting newly harvested maize onto the old stock in the granary.
- Check the granary from time to time to see if there are any cracks or other defects to be repaired.
- Open the granary by the cover slightly and also take some samples by the door once a week to ensure the quality of stored grain.
- If there is a defect (moisture intake or presence of insects), remove it, dry it and treat it properly before storing it again. This should be done after cleaning and treating the granary.



Fig. 3: Partitioning

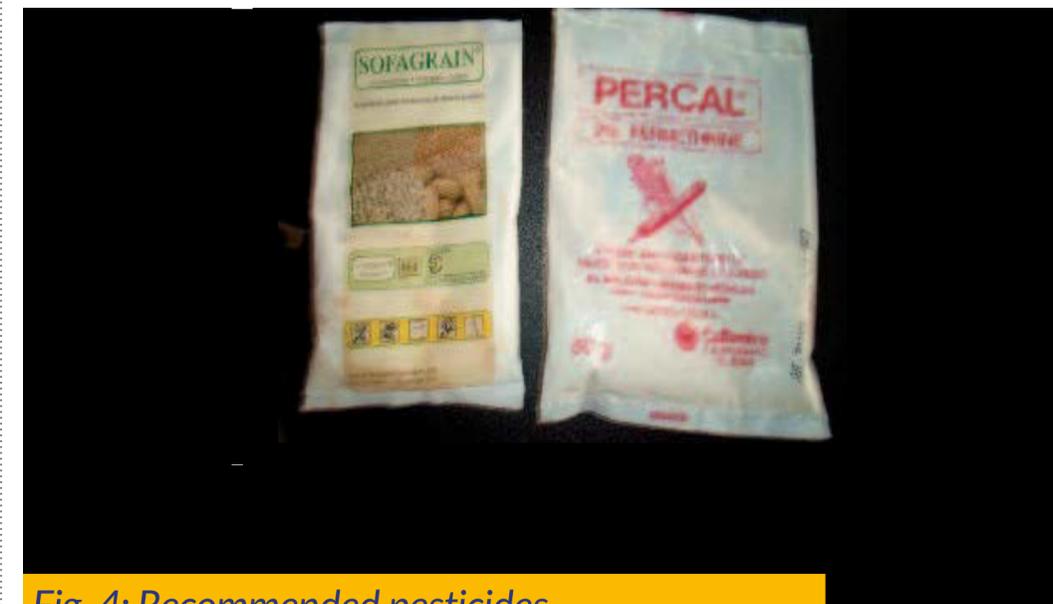


Fig. 4: Recommended pesticides



Fig. 5: Comparison of the old and new granary



Fig. 6: Disinfection of the grains



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