

Storage and Preservation of Cowpeas

It is necessary to ensure proper storage and preservation of cowpeas after harvesting well and drying it properly. This factsheet describes best practices for cowpea storage and preservation.



Fig. 1: Vessels and airtight containers



Fig. 2: Tins



Fig. 3: Cask and silo



Fig. 4: PICS bags or triple bagging



Ensure that the cowpeas are dry, and if not, dry them properly using the solar drying technique to bring the moisture content to between 9% and 11%. A properly dried seed should be crunchy between the teeth.

Quality of cowpeas for storage

Grains should be stored after threshing, drying and sorting:

- Do not store if the seed is visibly not in good condition e.g seeds with too many holes, insect infested or mouldy ones.
- Ensure that it does not have impurities, or else clean and sort the seeds to remove spoilt, perforated, insect infested ones and foreign bodies (leaves, stones, pieces of wood, etc.).
- Ensure that the cowpeas are dry, and if not, dry them properly using the solar drying technique to bring the moisture content to between 9% and 11%. A properly dried seed should be crunchy between the teeth.
- In case of long term storage, disinfect the seeds to prevent insects from attacking the rest of the stock.

Choice of cowpea storage facility

The storage facilities most used by peasants are:

- Tins and casks: this is indigenous knowledge and they are found to be efficient (Fig 2 & 3).
- Metallic silos (Fig.3).
- PICS bags or triple bags (Fig.4).

Good cowpea storage and preservation conditions: general principles

- Clean the store before storing fresh harvest. Residues from the previous harvest must be removed and burnt.
- Only store cleaned and properly dried seeds.
- Maintain cleanliness in the storage area and check for any change in storage conditions every two weeks.
- Keep rodents away.
- Place sacks or casks on pallets away from the wall to avoid transfer of moisture from the soil or wall.

Storage in containers and airtight containers

- These include, metallic casks, sealable oil tins, high density plastic bags, etc.
- Check that the container does not have a hole.
- Dry it properly.
- Fill the container with seeds.
- Finally, add recommended insecticide e.g. Actalm, Actellic Super PP or Sofagrain , 50 g for every 100 kg.
- Close it tightly.
- Keep the container in the shade and do not open before a minimum of 15 days.

Storage in PICS bags and description of PICS bags

The cowpea weevil *C. maculatus* cannot live without air, therefore storing cowpeas in anaerobic conditions is an effective method of fighting this insect. The Purdue Improved Crop Storage (PICS) method (triple bagging) ensures that once the bags containing the cowpeas are tightly closed and inserted one into another, no air can enter and all the insects within die, thus stopping their reproductive cycle. PICS bags are made up of 3 bags. 1 woven polypropylene exterior bag - 1 transparent plastic polyethylene bag (in the middle); and 1 other transparent plastic polyethylene bag (the inner bag).

Necessary steps for proper storage and preservation in PICS bags

- Only store cleaned and properly dried seeds (use the solar drying method).
- Packaging in PICS bags.
 1. Check the sealing of the plastic bags.
 2. Remove as much air as possible from the bag.
 3. Fill the bag with cleaned and dried seeds.
 4. Remove the air and tie the packages separately.
- Clean the area around the store.
- Clean the interior of the store.
- Pile the PICS bags containing seeds on a raised area.
- Keep rodents away from the bags.

- Close the store.
- Close the bags immediately after each removal.
- Check the stock regularly to detect any change in the conditions of the stored product.

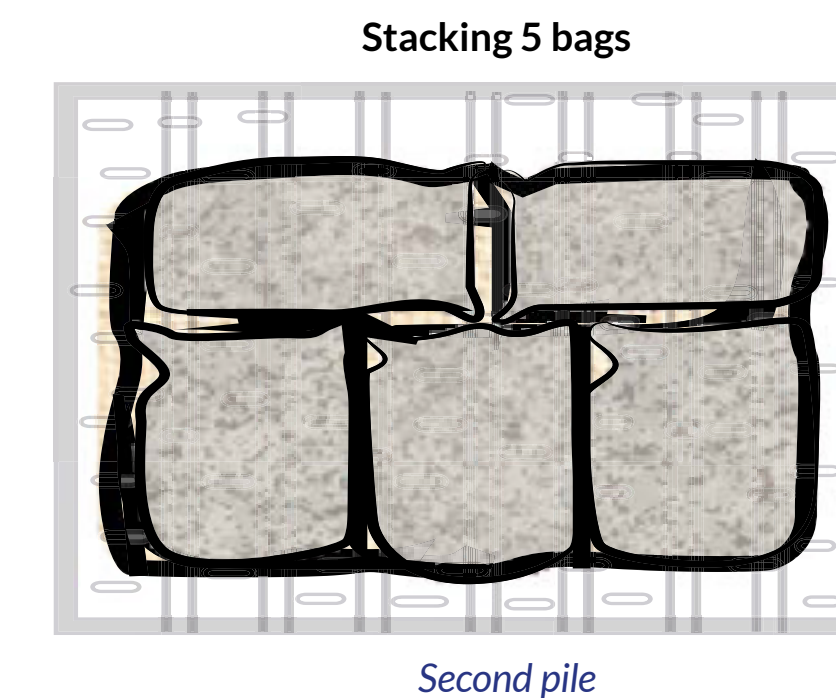
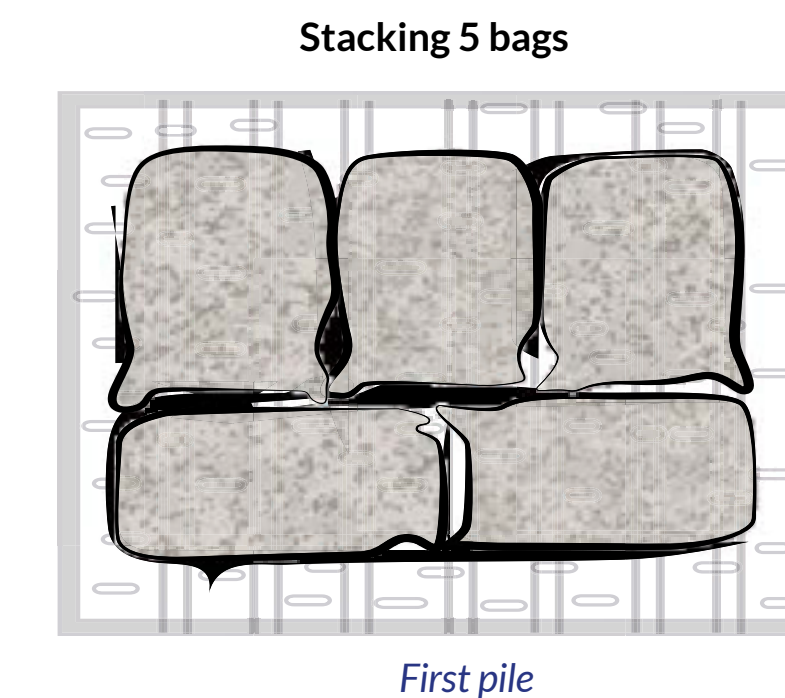
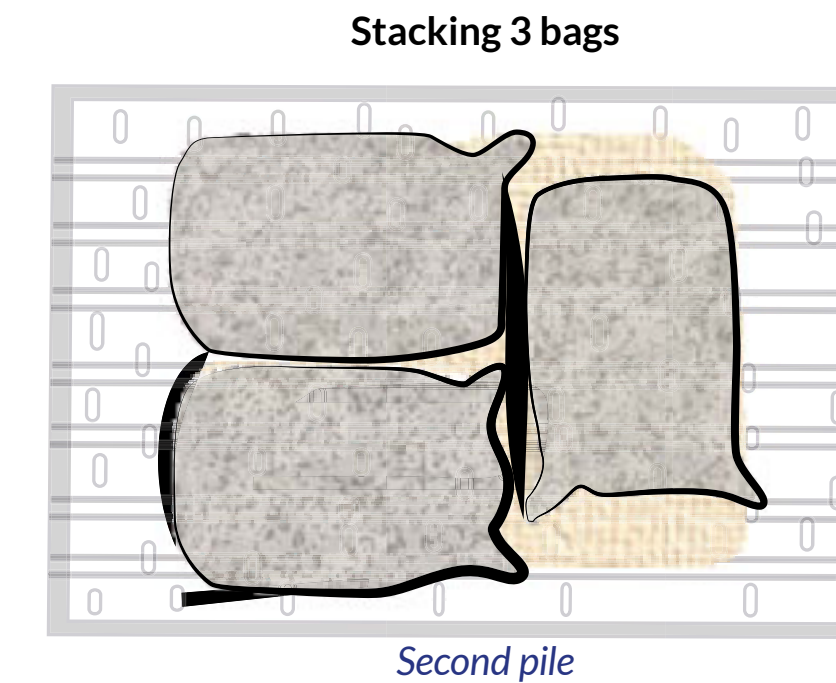
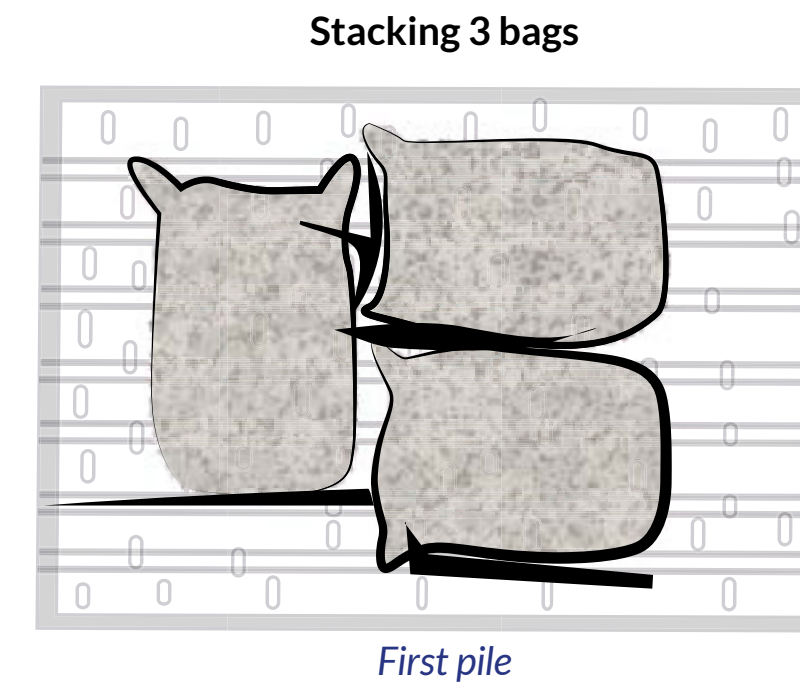
Follow up measures for cowpeas in storage

Follow-up during storage period is important to guarantee good quality stock. It is necessary to:

- Check the quality of the seeds from time to time after 15 days of storage in casks or tins.
- Inspect the seeds and clean the store once a week.
- Avoid putting freshly harvested seeds on top of old stock within the granary or store.
- In the store, apply the classic rule 'First in, First out'.



Fig. 5 : Stacking PICS bags



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