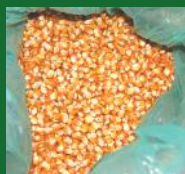
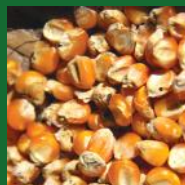


## PRECAUTIONS when using a Super Bag: Make sure that you

- ▶ Do not over fill the super bag.
- ▶ Do not puncture or damage the bag.
- ▶ Never carry the grain by holding on to the Super bag, always use the outer bag for carrying.
- ▶ Seal properly.
- ▶ Do not use Hooks to hang the bags.
- ▶ Clean, dry and fold undamaged Super Bags as it can be REUSED.
- ▶ Check regularly- for leaks and re-seal .



No insect damage on grains stored in super bags



Serious damage in traditional storage system

## CONCLUSION

Super bags help in extending germination of seeds , maintaining stable seed weight and moisture content for extended periods. Most importantly, they control insect pest without any insecticides. Live insects in the bags have been observed to be dead after 1-2 weeks of storage.

Super bags are inexpensive. Hence , this technique, compared to traditional storage systems, would be one of the most effective and economical tool in reducing storage losses at the house hold level.



National Plant Protection Centre  
Department of Agriculture  
Semtokha, Thimphu

## Grain storage using Super Grain Bags

“A solution to manage storage insect pests”

Ento, leaflet 7



### Contact us:

National Plant Protection Centre  
Department of Agriculture  
Ministry of Agriculture and Forests  
Semtokha, Thimphu  
P O Box: 670  
Tel: +975-02-351016/351665  
Fax: +975-351656  
mail: [nppcsemtokha@gmail.com](mailto:nppcsemtokha@gmail.com)  
Website: [www.nppc.gov.bt](http://www.nppc.gov.bt)

Produced by:  
Entomology Unit  
National Plant Protection Centre  
Semtokha, Thimphu

## INTRODUCTION:

Air tight storage using Super Bags

In Bhutan, insect pests cause serious post harvest losses during storage. Field trials, implemented by NPPC in 2014, using super bags have shown excellent results in reducing storage losses due to storage insects and in maintaining the grain quality for extended periods.

Super bags work on the principle of “hermetic storage” where flow of oxygen and water from outer environment is completely checked. This prevents damage and proliferation by storage insect pests and helps reduce grain losses without using any insecticides. Additionally, it greatly helps preserve the quality, germination and vigor of the seeds. It can be used to store a wide

range of commodities (maize, paddy, milled rice, wheat, millet, beans, coffee, soybeans etc.).

## STEPS in using a SUPER BAG:



**01.** For maize: Make sure the grains are properly dried (<12% moisture content). Shell grains.



**03.** Fill the super bag with dried seed or grain



**05.** Tie off the twist with a strong rubber band or an adhesive tape



**02.** Place the super bag inside another bag such as a jute bag or polypropylene bag



**04.** Remove air from the bag completely. To remove air, press from the side of the bags to take out air from the bag. Then twist the free plastic to fold it into two



**06.** Close the outer bag by tying or sewing. Make sure not to puncture the Super Bag