

# GRAIN SORGHUM MAIZE AND PEANUTS: DRYING AND STORAGE

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## INTRODUCTION

Crop storage is needed when a crop which is eaten all year is produced only at certain seasons. This is the case for maize, peanuts and grain sorghum in the Markham and Ramu Valleys.

Storage insect pests must be controlled or they may reduce the quality or amount of the crop in the store. Proper treatment of the crop and of the store is needed to control these pests.

Most problems are caused by small amounts of grain left in stores, harvesting and handling machinery, old bags and other containers from the year before. These should all be thoroughly cleaned at least one month before harvesting a new crop.

Correct store design is important for successful storage. Special care should be taken in choosing the building material so that grain can't get stuck in it.

All roofs should be properly waterproofed and should be insulated to reduce the temperature inside. Insulation in which dust or insects could gather should not be used. Walls should also be waterproofed and insulated.

Concrete is best for floors and they should be finished so that there are no cracks or crevices. Most wooden floors have cracks which allow grain and insects to gather in them. If the floor continues outside the building it must be made so that it does not allow water to flow into the building during heavy rain.

If storage bags have insects in them or are bought secondhand, they should be treated with dry heat at 176°F (80°C) for half an hour before filling. Another method is to put them in boiling water for several minutes.

Crop treatment before and during storage is discussed below.

## SORGHUM

To store sorghum, it is important that it has a moisture content of less than 13.5% (wet basis). In PNG it is often harvested at above this moisture content and has to be dried to prevent mould growth and insect development. The use of a moisture meter to measure moisture content for safe storage is advised.

It is recommended that the grain is treated with insecticide to control stored products pests. As the uninfested, dry grain is

taken into storage, it should be sprayed with a mixture of 12 ppm fenitrothion and 10 ppm carbaryl. This recommendation is only to be used when the sorghum will be used for stock feed.

## MAIZE

To store maize it is important that it is dried to a moisture content of less than 13.5% (wet basis). It can be left to dry on the plant in the field when the weather is good or be harvested by hand, dehusked, and allowed to dry in a crib before threshing. Where mechanical harvesters are used large quantities of maize may have to be dried artificially. The use of a moisture meter to determine moisture content for safe storage is advised.



*Bagging maize for storage*

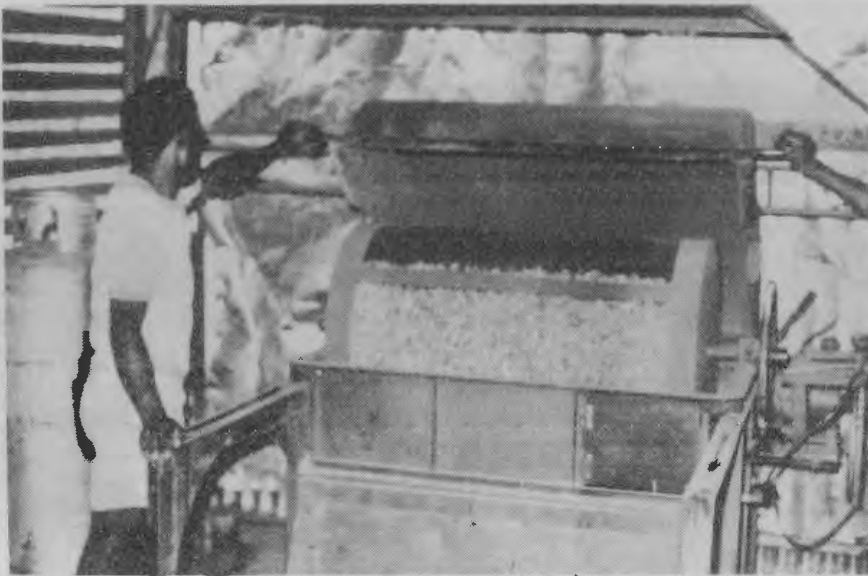
It is recommended that the grain is treated with insecticide to control stored products pests. As the uninfested, dry grain is taken into storage, it should be sprayed with a mixture of 1 ppm bioresmethrin + piperonyl butoxide (Coopers BRM 5/50) and 12 ppm fenitrothion. This recommendation is for grain which will be used for human consumption. If the grain is for stock feed then the mixture recommended above for sorghum should be used.





*Drying peanuts at the  
Alzera Peanut Co-operative in the Markham  
Valley.  
Photos: Office of  
Information*

*In the sun*



*By machine*

## PEANUTS

0-45 Peanuts are usually harvested at a kernel moisture content of 18-25% (wet basis). Peanuts which are dried too slowly or stored at too high a moisture content are subject to mould growth. These moulds can produce a chemical called aflatoxin which is very poisonous. It is therefore very important to dry the harvested crop to a moisture content below 10% as quickly as possible to prevent this. *The max. moisture content for safe storage of in-shell peanuts is 9% & for shelled peanuts 7%.*



*Bagging peanuts for storage at the Atzera Peanut Co-operative  
Photo: Office of Information*

Peanuts should be free of soil and other dirt when they are taken into storage. They are best stored in the shell which provides protection from insects.

Insecticide application to prevent stored product insect infestation is advised using the mixture of bioresmethrin + piperonyl butoxide and fenitrothion recommended above for use on maize.

Peanuts should not be eaten within 14 days of such treatment.

CONTACT THE STORED PRODUCT ENTOMOLOGIST, D.P.I. KONEDOBU FOR FURTHER INFORMATION ON CROP STORAGE.