Protection of stored cereal grains and pulses

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Agrodok 18

Protection of stored cereal grains and pulses

Inge de Groot
Foreword

This manual deals with problems concerning losses of stored products by storage pests: moulds (fungi), insects and rodents. It is targeted at those who are involved with providing information on storage to farmers and co-operatives.

The Agrodok describes the main storage pests and gives explanations of preventive and protective practices. Special attention is given to the use of natural materials in protecting storage products.

You will also find some information on chemical treatment of stored products against pests.

Another title in the Agrodok series (No. 31): “The storage of tropical agricultural products”, is another useful book about storage. The two Agrodoks are complementary.

We would greatly appreciate it if you would write us your experiences on successful local methods to protect storage products. Where possible, they will be included in a future revised edition.

Thanks are due to all those who have contributed and have provided useful information or comments for revision of this booklet.


Foreword to the revised edition

A slight revision of this Agrodok has been carried out, including an update on the chemicals mentioned. Agromisa prefers to advise not to use chemicals for storage protection, because chemicals are poisonous for human beings too. But we admit that sometimes using chemicals is necessary in order to reach a better food security. We follow the international regulations on allowance of chemicals. We realise however, that many chemicals which are prohibited are still being sold, especially in developing countries. We advise the reader not to use these.

The Agrodok co-ordinator, Wageningen, 2000
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1 Introduction

Everywhere in the world stored products are attacked by a number of storage enemies. Three major groups of storage enemies are:

- fungi
- insects
- rats and mice

These organisms can damage a considerable part of the stored product. In many cases small improvements in storage methods may already lead to much better protection of your storage product and thus to less losses.

A good storage building is one thing, good safety measures another. Therefore this Agrodok concentrates on the prevention of losses in stored products, particularly with regard to drying, temperature regulation and hygiene.

However, good storage practices combined with good hygiene, adequate drying and all other safety measures will not always be effective in preventing storage losses. Storage pests may still manage to reach the product and leave a trail of devastation work. If this occurs you will have to take other measures to protect your storage product.

There are many ways of protecting local storage products. Time honoured methods such as the use of natural materials like plants, minerals and oil are still very effective. Due to the introduction of chemicals many traditional storage treatments are often forgotten. In this Agrodok some examples of traditional storage methods are given to bring them back into memory. Not every method will be effective in your situation; try some of them out and experiment for yourself.

In case of emergency some information about chemicals is provided. This information is very limited. It is not possible to provide many details here. Ask your agricultural extension worker for more informa-
tion. In the case of small farm storage the use of chemicals will not always be very profitable i.e. the costs will be much higher than the benefits. Keep this in mind!

1.1 Why only grains and pulses

This booklet deals only with grains and pulses because these are considered the most important storage products for small-scale farmers in the tropics.

It is also recommended that you use Agrodok 31; “The storage of tropical agricultural products” in combination with this Agrodok. The two manuals are complementary.