

# STORAGE OF BLACK PEPPER

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Prevention of mould formation and insect infestation in black pepper during storage and transit abroad is a problem of the greatest importance to pepper trade in India. In order to promote export and sale of our black pepper in foreign countries, quality standards have to be set up and maintained scrupulously.

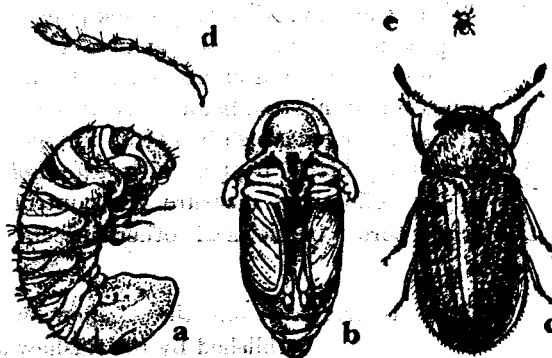
Recent investigations on storage and shipment of whole black pepper carried out by the Pepper Detentions Committee of American Spice Trade Association (recently published in these columns) have revealed that psocids, mites and some species of stored-product insects such as the drug-store beetle propagated readily in black pepper with 13 or more percent of moisture content. Such pepper was also shown to be subject to excessive growth of mould.

These investigations also showed that garbling removed most surface mould, insects and foreign material and that whole pepper could be dried easily in the sun to 10 percent or less in moisture content.

Black pepper garbled and dried to less than 11 percent moisture content and immediately packed in double burlap bags with a polythene or alcatheene liner (of 3 mils. [003"] or greater in thickness) could be held through a monsoon season and shipped to New York from producing areas with very little change in moisture content and consequently almost wholly free of insect or mould development. Further more if the pepper is dried, stored and bagged as prescribed, there should be virtually no loss in weight on arrival at destination.

Recent investigations conducted in India on the causes resulting in the insect infestations of pepper exported to U. S. A. have revealed that the drug-store beetle, *sitoderpa panicea* or *stegobium paniceum* L. is a serious storage pest of black pepper all over the West Coast of India. The

incidence is observed to be generally in pepper stored for more than an year.



## The Drug-Store Beetle

a. Larva; b. Pupa; c. Adult; d. Antenna;  
e. Natural Size of the Beetle

(Copied from Chittenden's Illustration)

Methods of storage of black pepper practised by some of the producers on the West Coast are by no means satisfactory. It is usually heaped up in the corner of rooms whose floors and walls may not be dry, or in gunny bags piled up in such rooms. It is usually also stored in open baskets or wooden cellars. Investigations have revealed that producers generally store pepper for long periods in the same room or receptacle year after year without any cleaning and usually along with other spices like ginger, turmeric, etc. which harbours insects. Black pepper thus stored is often found mouldy and infested with insects, especially the drug-store beetle.

The drug-store beetle is one of the insects which does considerable damage to stored black pepper by boring and eating into the dried berries.

Producers who may have to store their black pepper for a long time would do well to take the following precautions against mould formation and insect infestation while the stuff remains with them.

- (1) Dry the pepper very well for four or five days in the hot sun. There should not be more than 10 percent moisture in the black pepper.
- (2) Do not store black pepper heaped up on the floor of rooms exposed to humid air and insects.
- (3) Storing black pepper in gunny bags piled up in rooms is also not at all a satisfactory method of storing.
- (4) The best method of storing black pepper by producers seems to be to keep it in wooden cellars thoroughly cleaned and if possible fumigated before each storage. Investigations have shown that fumigation of dry black pepper with chlorosol is an effective measure to control drug store beetle and other insects.

Fumigation of cellars with this substance before storage may thoroughly clean the cellars too.

Stone cellars lined with smooth cement may also be suitable for storing black pepper.

- (5) Do not store black pepper along with other spices and condiments in the same room.

By observing these precautions producers themselves can control to a great extent mould formation and insect infestation even in their initial stages.

Traders and shippers on the other hand have to carefully examine the black pepper they buy from the producers and unscrupulously observe the procedure on storage and shipment of black pepper prescribed by the Pepper Detentions Committee of the American Spice Trade Association.

If the Export Promotion Council sees to it that all these conditions are observed by the exporters, the quality standards of our black pepper can be maintained at the highest level possible. ●●

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