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Dried fruit and meal insects

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DRIED and preserved foodstuffs such as raisins, currants, oatmeal, nuts, and flour are often found to be "weevily" after long storage. Strictly speaking, the term "weevily" should be applied only to material attacked by certain types of beetles, but the expression is now popularly used in connection with practically any insect infestation of stored products.

**RICE WEEVILS**  
*(Calandra oryzae L.)*

The rice weevil is the common grain weevil of this State, and may sometimes be found attacking stored foods such as macaroni, spaghetti, etc., as well as grain. Being a true weevil the head is produced into a long snout at the end of which the mouth parts are borne. The female weevil chews a small hole into the grain or other solid food material and deposits therein an egg; the hole is then plugged with a gelatinous-like material which seals the entrance. The young grubs hatch and feed in this position until full-grown, when they pupate and finally the adult weevil forces its way to freedom.

**FLOUR BEETLES OR "MILL FLOSS"**  
*(Tribolium spp.)*

The flour beetles like the weevils are tiny brown insects which infest various foods, but chiefly flour, oatmeal, bran, etc. There are several species, all rather flattened in shape and lacking the typical weevil snout. The eggs are laid loosely amongst the flour or bran and under favourable conditions vast numbers may soon develop.
THE INDIAN MEAL MOTH
*(Plodia interpunctella* Hbn.)

The Indian meal moth is one of the commonest moth pests found in home groceries, and is the parent of the pinkish-white "grubs" or caterpillars so often found in raisins, dates, figs, etc. There are several other moths such as the flour moth (*Ephestia kuhniella* Zell.) and the dried fruit moth (*E. cautella* Walk.) which may also be implicated, but all are superficially very similar and have comparable habits. The eggs are laid on or near the foodstuffs by the parent moth, which has a wing span of about \( \frac{3}{4} \) of an inch. When at rest the meal moth shows a broad creamy band across the general coppery brown colour of the wings.

CONTROL

Prevention.

Housewives can do much to avoid losses by purchasing only small quantities of dried fruits, oatmeal, flour, etc., so that they may be consumed fairly quickly.

Care should be taken to examine food before storing away to ensure that it is quite clean at the time of delivery.

In many cases insect infestations can be traced to an old packet of fruit, oatmeal,
or flour, which has been pushed to the back of a cupboard and forgotten. All such centres of breeding should be destroyed. Wherever possible goods should be stored in insect-proof tins or jars.

Astonishment is often expressed at the development of “weevils” in apparently sealed containers. The explanation is that insect eggs have already been laid on the food before it was packed away or in some cases that eggs have been laid around the lid and the tiny grubs have been able to squeeze through where no mature insect could gain access.

Treatment,

Where small quantities of material only are to be dealt with and where the damage done does not warrant the destruction of the food, good control may be obtained by putting the infested foodstuffs in the oven for about an hour and allowing the material to be warmed through to a temperature of from 130° to 140° F. Care must be taken to see that the oven is not too hot. A gradual heating at a low temperature will raise the entire mass to the desired figure whereas a short intense heating may entirely spoil the commodity being treated. During hot summer weather if the material is spread thinly and placed in the sun on an iron tray good control may be achieved.

Where larger quantities of material require treatment these should be placed in a gas-proof box or bin and fumigated with carbon bisulphide. The dosage should be worked out at the rate of 4 lb. of fumigant to every thousand cubic feet of space but the quantity used may be greatly increased if leakages occur. A bin measuring 3 ft. x 2 ft. x 3 ft. would require about four tablespoonfuls.

The fumigant should be placed in a shallow saucer on the top of the infested material and the lid and all cracks should be thoroughly sealed. The box should be left closed for 48 hours.

Infested pantries, cupboards or shelves should be thoroughly cleaned and sprayed with one of the proprietary fly sprays containing pyrethrum. Smoke bombs containing DDT or BHC may also be used and DDT, BHC or Lindane dusts or sprays may be used to treat cracks and crevices.

WARNING

Carbon bisulphide is explosive and inflammable, but will not injure the foodstuffs for future consumption, although the gas is toxic to humans. DDT and BHC should not be allowed to contaminate foodstuffs.
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