



Ugandan scientists tackle grain, pulse losses in the store

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If you thought that post-harvest handling of grains and pulses stops at storage, you need to think again.

Dr Harriet Muyinja Kayingo who specialises in post-harvest handling at the Food Biosciences and Agribusiness Programme (FBA) at Uganda's National Agricultural Laboratories Research Institute (NaRL) says that such produce is still prone to damage by insects and contamination in farmer stores.

Dr Kayingo and her team have since 2023 been working with maize and legume farmers in Uganda's districts of Rakai, Kamwenge, Kabarole, Iganga, Nakaseke, Gulu and Lira, sensitising them on best storage practices.

The team contends that several insect species can infest maize and beans in storage, including weevils, beetles and moths.

Others are the maize weevil, bean weevil, lesser grain borer and Indian meal moth.

These insects can cause significant damage to stored grains, leading to losses in quality and quantity.

Farmers and producers are advised to utilise several methods, including drying

the grain to a moisture level of 14 percent and using airtight containers like plastic bags for storage and incorporating natural pest repellents such as neem tree leaves.

They can also explore traditional practices such as using clay pots which placed in storage facilities where the produce is exposed to smoke from firewood.

Where possible, use of advanced technology such as storing in metal and plastic silos is encouraged.

Technology adoption

The team of NaRL scientists is partnering with Food and Agriculture Organisation (FAO), which has secured portable storage facilities where farmers can keep their harvest safe from weevil infestation.

For root crop products, farmers are advised to use hermetic storage facilities, which are either airtight containers or bags, to protect items from insects and microorganisms and moisture.

This method creates a modified atmosphere within the container, reducing oxygen levels to inhibit the growth of harmful organisms and extend the shelf life of stored produce.

Processed food post-harvest handling

Dr Kayingo notes that confectionary products such as bread, biscuits, doughnuts and cookies can either develop aflatoxins or get infested with insects like the bread and biscuit beetles and the drugstore beetles.

She says that food processors of confectionary items must therefore prioritise hygiene, ensure there is proper waste disposal and put in place proper pest control measures.

This includes sealing entry points, maintaining cleanliness and use of appropriate storage containers.

Other important measures are inspecting incoming materials and packaging for signs of infestation, ensuring older stock is used first, and reducing the time ingredients are stored and potentially exposed to pests.

In the case of aflatoxin challenges the processors are advised to use the flour immediately and use aflatoxin detector equipment.

It is important to keep the flour in a recommended environment free from moisture and far from the walls of the house but in aerated containers.