

# EAGC RATIO

postharvest Losses



# EAGC equips maize farmers with skills to cut post-harvest losses, boost yields

BY RATIN NEWS WRITER

The Eastern Africa Grain Council (EAGC) has licensed 10 grain warehouses, putting Kenya on the frontline of a regional campaign to cut post-harvest losses which claim up to 30 per cent of crop produced in sub-Saharan Africa.

The certified stores, all run by professional grain handlers, accept harvests at a monthly fee of Sh50 (\$0.50) per bag and give farmers receipts that they can use to acquire a loan of up to 75 per cent of the crop value.

And to lay the ground for mass rollout, the EAGC has been training farmers on the warehouse receipting system (WRS). The system transfers the postharvest handling risks to professionals in exchange of receipts that farmers can present to participating banks to access money on produce yet to be sold.

In essence, farmers not only benefit from storage at a lower fee, but they also have their produce stored in a safer way as a result of proper handling.

The fee that the growers pay caters for the storage and fumigation (treatment) charges, meaning the grain can stay for as long as six months without going bad.

With the risk of spoilage taken care of, and access to bank loan assured, a farmer no longer has to sell at low price during harvest season glut. And neither do consumers have to buy at high price during shortage as stable supply of grain is assured throughout the crop year.

Just like the EAGC, governments and



A Kenyan farmer weeds maize crop.

other private sector entities have been promoting the system in bid to cut the amount of crop that goes to waste in this food-insecure region. The World Bank sets the tone in a 2011 report: "Despite the low total agricultural productivity, post-harvest losses of the food being

produced are significant."

In Kenya, many organisations have been angling to give farmers access to better storage facilities since the inception of the concept by EAGC in 2008.

Dryland Seed Limited (DSL) has, for instance, launched a project to construct three warehouses in Machakos County with the capacity of 1,500 metric tonnes of seed storage.

The facility, according to DSL management, will support farmers in Machakos and the surrounding arid and semi-arid areas.

The officials say the warehouse will benefit smallholder farmers, agro-dealers and other enterprises by maintaining seed quality through good storage.

In Uganda, Trade minister Amelia Kyambadde said the government plans to construct storage facilities for commodities across the country to improve farmers' fortunes.

The storage facilities will help farmers improve on the quality of their produce, giving them a chance to compete on the world commodity market.

Among the facilities that will be constructed in Uganda, the minister said, include a lab for testing maize grain, a weighbridge for trucks, a fine-grading facility and silos to store produce.

## Helping farmers

In Tanzania, the Alliance for a Green Revolution in Africa (Agra) has been working with agriculture stakeholders in testing the suitability of a number of storage technologies, from Pics (Purdue Improved Cowpeas) bags to metal silos and hematic cocoons, in helping farmers tackle post-harvest losses.

The Rwandan government is equally

committed to ensuring that post-harvest losses are reduced to five per cent so that farmers can reap more from their efforts.

Back to EAGC's Kenya campaigns, close to 1,300 farmers from 43 co-operative societies have since been trained on post-harvest handling of maize and beans.

The training is being provided under the Post-Harvest and Agribusiness Support Project aimed at improving product quality and reducing losses along the cereal value chain.

Transnational Bank in Kenya has partnered with BrazAgro, a farm machinery dealer, to issue grain farmers with funds to purchase storage facilities at an interest rate of nine per cent.

The financing would be pegged against warehouse receipts with farmers accessing credit of up to 60 per cent of the value of their grains stored at warehouses.

The loans help farmers acquire metallic silos for storing grains to reduce post-harvest losses caused by grain borer and aflatoxin.

Smallholder farmers generally lack proper storage facilities. About 75 per cent of the Kenyan farmers are smallholders.

Farmers, especially those without immediate financial needs, are known to store their grains for long periods as they wait for the prices to go up before selling it. However, grain stored with high moisture content is risks aflatoxin contamination.

A recent conference on post-harvest losses hosted by Agra in partnership with the Bill & Melinda Gates Foundation in Nairobi, heard that Africa loses \$4 billion (Sh400 billion) worth of food through wastage annually, mainly as a result of inefficient storage and processing systems.

## Wet conditions

"A lack of proper storage facilities is a big challenge. There is no safer place to keep our grain especially in wet conditions," says Mr Zack Matere, a farmer in the Rift Valley.

Mr Matere represents thousands of other small scale farmers who face challenges in storing their crop especially when harvesting coincides with rains.

The growers do not have the facilities to test moisture content in grain and so they end up storing their crop with high moisture content, beyond the required 13 per cent level.

Post-harvest losses are lower in the developed countries than in their developing counterparts because of more efficient farming systems, better transport infrastructure, farm management, and effective storage and processing facilities that ensure a larger proportion of the harvested foods is delivered to the market at desired quality and safety.

According to World Bank, in the low income countries, pre-harvesting management, processing, storage infrastructure and market facilities are either unavailable or inadequate, increasing the chances of post-harvest losses.

Aflatoxin contamination in food



A family harvests maize in Trans Nzoia County.

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▶ East African Grain Council's Kenya campaigns has trained close to 1,300 farmers from 43 co-operative societies in post-harvest handling of maize and beans.

grain and animal feeds in Kenya has become a major cause for concern given its negative impact on health, trade, and food security.

It causes liver cancer, suppresses immunity and stunts the growth of children.

Nearly 200 people, including schoolchildren, have died in Kenya due to acute aflatoxin poisoning in the recent past.

Post-harvest and marketing system is a chain of interconnected activities from the time of harvest to the delivery of the food to the consumers.

Agricultural commodities produced on the farm have to undergo several procedures like harvesting, drying, threshing, winnowing, processing, bagging, storage, transportation, and exchange before reaching the final consumer.

The primary role of an effective post-harvest system is to ensure that the harvested food reaches the consumer, while fulfilling customer satisfaction in terms of quality, volume and safety.

Losses of grain occur across the chain, starting from harvesting, storage and when transporting the produce to the market.

As a result, they end up losing up to 50 per cent of their harvest resulting from poor storage. Most of it is either discoloured or is contaminated with aflatoxin, making it hard for them to sell it to millers or at the National Cereals and Produce Board (NCPB) because of deteriorated standards.

Common market for Eastern and Southern Africa (Comesa) recently entered into strategic partnerships to harmonise aflatoxin control measures and improve regulatory environment in the region by setting up testing units.

Comesa will establish laboratories to check aflatoxin in Kenya (one), two in Malawi, and one each in Rwanda, Uganda, Zambia, Zimbabwe and the Democratic Republic of Congo.

Scientists interviewed by *The East African* newspaper said more than half of the samples they have tested of maize sold in Uganda and maize bound for export markets, especially in Kenya, have been found to be above the allowable limit of aflatoxin of 10 parts per billion (ppb).

#### Biggest problems

One ppb is the equivalent of one microgramme per kilogramme, and is the maximum contamination standard for Kenya, Uganda and Tanzania.

Archileo Kaaya, professor of food technology and nutrition at Makerere University in Uganda, said one of the biggest problems is the informal market, which dominates maize trade in these countries.

“Maize sold through formal institutions is tested, hence safe, but that sold through informal trade across the border, is not,” said Prof Kaaya, who has conducted extensive studies on aflatoxin told *The EastAfrican*.

The contamination affects crops that

## 98%

Percentage effectiveness of Alfasafe in reduction of the aflatoxin in farmers' fields.

## Sh112

The average retail price of a two-kilogramme packet of maize in Kenyan outlets, according to the Kenya National Bureau of Statistics compared to Sh106 in November last year.

## 200

The approximate number of people, including schoolchildren who have died in Kenya due to acute aflatoxin poisoning in the recent past.

are stressed by severe heat and drought, but can also occur and spread when the grain is stored with moisture levels of 15-20 per cent, which attracts the moulds that produce aflatoxin.

Studies by the Partnership for Aflatoxin Control in Africa (Paca) reveal that aflatoxin contaminate maize, groundnuts, rice, sorghum and cassava due to dry weather when the crop is near maturity, high moisture during harvest, inadequate drying and storage.

The Government of Kenya has approved the use of a new bio chemical in fight against aflatoxin in crops, coming as a relief to grain farmers who have been battling with losses resulting from this disease.

Pest Control Products Board (PCPB) has registered Alfasafe, which is a bio product that suppresses aflatoxin in

grains, paving the way for its unhindered use in the country.

The product has been developed by the Kenya Agricultural and Livestock Research Organisation (KALRO), jointly with the United States Department of Agriculture – Agriculture Research Service (USDA-ARS) and the International Institute of Tropical Agriculture (IITA).

“Now that this bio control product is fully approved for use, we expect that its rapid adoption will help us to deal with the recurrent and vexing aflatoxin problem, and make our maize safe to eat and trade” said director-general of KALRO Eliud Kireger.

Mr Kireger said Alfasafe is 98 per cent effective in reduction of the aflatoxin in farmers' fields and that it will go a long way in curbing deaths that are caused by consuming food that is contaminated by this toxin.

He said that the product was registered after meeting stringent standards of safety as required by the law.

Kenya is one of the world's hotspots for aflatoxin, with possibly the worst incidents of contamination ever documented.

Aflatoxin contamination in food grain and feed in Kenya has become a major concern as a result of its negative impact on health, trade, and food security. Since 2004, the country has suffered severe outbreaks of illness from this threat with at least 100 people dying in 2004 alone.

#### Groundbreaking

Earlier in the year, the Ministry of Agriculture, Livestock and Fisheries dedicated Sh1.5 billion for aflatoxin mitigation in the country.

Development of in-country capacity to produce Aflasafe for Kenya got underway in November 2014 with ground breaking by the Cabinet Secretary for the Modular Manufacturing Facility at KALRO-Katumani.

This facility will be run by KALRO, with technical back-stopping of IITA and USDA-ARS. For providing immediate relief to the farmers, the Agriculture ministry is procuring 230 tonnes of Aflasafe from the Aflasafe Manufacturing facility in IITA, Nigeria.

With the registration of this innovative, cost-effective technology to control aflatoxin, and the ongoing construction of the modular plant at KALRO Katumani, Kenya is now well on its way to securing the food, health, and income of millions of its farmers and traders.



Grain storage facilities.