

Quality Protein Maize – the crop of hope



These new varieties of maize can significantly contribute to better nutrition, improved health, incomes and livelihoods, especially in rural communities

“Look at those miserable crops,” a beaming Bonney Okello remarked pointing at maize fields that were fast turning from green to brown due to prolonged lack of rain. “Nearly all the farmers here planted ordinary maize and they have lost everything,” he noted.

The month was November, the time of the year when usually smiles are expected on farmer’s faces in northern Uganda, because it is harvest time. But the situation in Lira district was sad. “We have undergone two rough seasons of unreliable rains,” said Mrs. Rose Oweta, a renowned farmer. “That means the food situation next year will be grave.”

But Okello’s one-acre maize garden, a few metres away, retained the normal green colour; and the crop had grown to full height, bearing fair cobs.

Unlike most of his village folk, Okello planted *Longe 5*, an open pollinated variety of Quality Protein Maize (QPM) that was released by researchers in Uganda. This is an improved variety of maize that is enriched with protein. Okello believes that *Longe 5* also matures faster and is more tolerant to drought.

This young man received the seeds of this variety from a local women farmer’s group called Ogur United Mothers (OGUM) in Lira district. OGUM, with a membership of 920 people, is one of the farmer groups in Uganda with which the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) is carrying out a project that promotes Quality Protein Maize.

High nutritional value

The application of science and technology in agriculture is a key element in delivering the millennium development goal



A flourishing Quality Protein Maize garden.

(MDG 1) of halving poverty and hunger by 2015.

In Eastern and Central Africa, like other regions of Africa, staple foods constitute a major portion of the diet of the people. The majority of people consume insufficient amounts of protein because foods that are rich in protein such as milk, meat, fish, eggs, beans are relatively expensive compared to staple foods like maize.

The consequence is that most households reduce or cut out proteins from their diets. This has led to increased incidences of malnutrition among the most vulnerable—the urban and



Children enjoy Quality Protein Maize porridge. Youngsters need proteins to grow up healthy.

rural poor. Children, mothers and elderly people are most affected.

It is for this reason that the Dissemination of New Agricultural Technologies in Africa (DONATA), an Africa-wide project funded by the African Development Bank, was started to promote innovative technologies in various parts of Africa.

Quality Protein Maize is one of the technologies that are being promoted under this project in the Eastern and central Africa region. The implementation of this project is being managed by the Knowledge Management and Upscaling programme of ASARECA.

ASARECA started promoting Quality Protein Maize technologies in 2008 because they have the potential to improve the food and nutrition of households, especially those that cannot afford conventional sources of protein. In Uganda, ASARECA is implementing this in partnership with the National Agricultural Research Organisation (NARO).

Other institutions in the region with which ASARECA is promoting Quality Protein Maize are; Institut National Pour l’Etude et la Recherche Agronomiques (INERA) in the Democratic Republic of Congo, Kenya Agricultural Research Institute (KARI); and the Division of Research and Development in the Ministry of Agriculture and Food Security, Tanzania.

Quality Protein Maize technology is a result of previous research carried out by scientists in the region. The variety can serve protein requirements in a person’s diet, especially children, young women, pregnant women and lactating mothers. It offers 90% the nutritional value of skim milk, which according to UNICEF, is the standard for adequate nutritional value.

There are two Quality Protein Maize varieties that are being promoted in Uganda, namely *Longe 5* and *Salongo*. *Longe 5* is an open pollinated variety—meaning its seeds or grain can be planted by individual farmers or farmer groups over and over before its quality declines. *Salongo* is a hybrid and cannot be re-planted. Other countries where the project is being implemented also have varieties that are appropriate to them.

In addition to the varieties, ASARECA is promoting accompanying crop management practices and these include appropriate spacing during planting, when to weed, the frequency of weeding and post-harvest handling, especially good storage and processing. The practices ensure quality grain to produce value added products for human consumption and for livestock feed, as well as retain the quality of seed.



Looking out for Quality Protein Maize. Quality Protein Maize can be packaged and sold in supermarkets.

Promising Signs

In the words of Mrs Oweta: “We were excited to learn that Quality Protein Maize, unlike other varieties, has proteins. We have been faced with poor nutrition, especially our children after living in internally displaced peoples’ camps for several years.”

Although the Quality Protein Maize project is only in the second year of implementation, ample benefits are beginning to be felt in Uganda and the other countries where it is being implemented.



Breast feeding mothers experience increased flow of milk.

While about 30% of children in Sub-Saharan Africa suffer from protein-energy malnutrition, Quality Protein Maize is providing hope to alleviate the situation. In Uganda, Kenya, Tanzania and DR Congo, Quality Protein Maize is becoming an important ingredient in diets in homes, especially where there is malnutrition. In feeding centres and households where children suffering from kwashiorkor are being fed on Quality Protein Maize foods, marked recovery has been reported within a short period of time. Similarly, breastfeeding mothers who cannot produce enough milk for their babies reported that when they fed on Quality Protein Maize, their milk production increased. Quality Protein Maize is also good for everyone in a home because it provides energy and protein. People who eat Quality Protein Maize have also said that it is tastier than ordinary maize.

Besides the usual meal of posho and porridge, the farmers in Uganda, especially in Lira and Gulu districts, have developed a range of Quality Protein Maize recipes like cakes, samosas, biscuits and salads. These have provided alternative avenues upon which maize can be utilized alongside other food commodities. The farmers also sell the items in local markets for income generation.

During the World Food Day celebrations due on October

16, Ugandan farmers will exhibit a variety of the recipes with a view to popularise Quality Protein Maize consumption.

Enormous potential

The potential for Quality Protein Maize to improve nutrition and household incomes in the region is big. However, this will require more sensitisation of a wide range of stakeholders on the nutritional benefits of Quality Protein Maize. It will also require the involvement of government, NGOs, scientists, extension workers to devise means to encourage farmers to plant more Quality Protein Maize.

The private sector also has a role to play. They can provide the market for the grain. However, there is need for farmers to get organised to produce large quantities and good quality grain to attract the private sector. This is already happening in some countries, for example Tanzania where private grain millers are buying Quality Protein Maize from farmers and processing it into flour which is now being sold in supermarkets.

While farmers tend to recycle their Quality Protein Maize seed and grain, this practice leads to deterioration of the protein value. Farmers stand to gain more if they buy seeds from recommended seed agents and practice isolation by planting Quality Protein Maize according to the recommended spacing and avoid contaminating it with ordinary maize.

In order to enhance the scaling out of Quality Protein Maize technologies to reach more farmers across the region, according to Dr. Lydia Kimenye, ASARECA is preparing sets of training manuals on Quality Protein Maize production and a recipe book. The training manuals contain information on different Quality Protein Maize varieties, the recommended production practices that are appropriate, different agro-ecologies and post harvest handling practices. The recipe book provides information on how to prepare a variety of Quality Protein Maize based products. All these books will be made available to the public soon.



Quality Protein Maize products.