Agribiz

SMART WAY TO GROW MONEY

THE NEW MENU

Cricket cakes
Cricket muffins
Cricket cookies
Cricket pancakes
Cricket biscuits
Cricket granola bars
Cricket deep fries
Cricket animal feeds
Coming soon, maybe: Cricket Juice
Cricket porridge
Cricket beer ....

FROM TOP: A plate of cooked crickets in Asia; a live cricket (Inset); and a serving of cricket muffins on display at the recent Nairobi International Trade Fair. PHOTOS: WAHINYA HENRY

Scientists at Jomo Kenyatta University of Agriculture and Technology are spearheading the introduction of insect menus on our dinner tables

Starving? Why not eat crickets all around you?

by Wahinya Henry
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Have you ever tasted a cookie or *samosa* made from insects of the cricket variety? Well if not, you ought to have visited this year's Nairobi International Trade Fair held last month at Jamhuri Park.

Drawn by the sweet aroma cookies, we had found ourselves at the Jomo Kenyatta University of Agriculture and Technology (JKUAT) stand at the show grounds. Here we met Caroline Kipkoech from the institution.

On display were cookies, muffins, granola bars and other sweet delicacies made from crickets, whose protein levels, we were told, are very high. And the cricket delicacies, we soon realised, were a big attraction at the stand.

Apparently, Caroline had spent hours at the stand imparting knowledge and skills to convince visitors to start eating crickets as a food and as an income earner for farmers. "Add crickets to you rhome menus as a food security measure. You can also add value to your incomes by growing them," she advised.

She said the insects are dominant in the wild and can be turned into dinner in the form of muffins and cookies instead of just letting the insects chirp at night as families go hungry in arid and semi-arid lands (ASALS). About 50 per cent of Kenyans live in poverty and one in three children suffer from chronic under-nutrition.

Malnutrition

This results in stunting, meaning their development is permanently impaired, according to Gain. Gain are consultants and part of a consortium contracted by United States Agency for International Development (USAid) to implement the Resilience and Economic Growth in the Arid Lands. They are pushing for acceptance of new foods, including crickets, in arid and semi-arid areas in Kenya. Gain say children who are stunted will grow up to earn 20 per cent less on average than those who are not. Iron, iodine, and zinc deficiencies can also translate into a loss of two to three per cent of Gross Domestic Product (GDP). These deficiencies need to be tackled if Kenya is to achieve its Vision 2030 goal.

"We still have protein malnutrition in Kenya and with the 75 per cent protein in crickets, we can solve malnutrition. We actually have enough food with us, but we need to change our attitude before we can exploit the resources available to meet our food security needs," Caroline added.

Crickets can also be deep-fried as a source of animal feed, according to the researcher at the university. "They utilise very small space. In Kenya the population is increasing but our land is not increasing, so we need to look for solutions that can utilise the small land that we have," she said.

Moreover, crickets multiply in a short span of three months and you have your proteins. "You can also rear them using the organic waste. You can actually use what you would have wasted to produce proteins," she said.

Farm project

Caroline says that university farms crickets in a standardised way to avoid microbial contamination. "We harvest the insects then solar-dry them. After that we grind with a mill to get flour which we can use in whichever way that we want," she says. The new research project at JKUAT aims to upscale cricket farming in Kenya to foster food and nutrition security. The mass production of the insects is also primed to produce animal feeds.

A cricket farm at the university will serve as a resource and training centre for farmers and investors as well as enlightening Kenyans who are not aware about the value of edible insects.

Dr John Kinyuru, a lecturer in Food Science Department, Faculty of Agriculture, who is spearheading the initiative, says the university is upscaling crickets farming in Kenya to foster food security and improve nutrition.

Says Dr Kinyuru: "The Edible Insects' Research Centre seeks to optimise conditions for medium and large-scale cricket farming. We aim to develop animal feed using mature crickets, build capacity and develop dissemination manual on cricket farming and utilisation."

Dr Kinyuru says the increased demand for animal protein coupled with high costs of fish meal and soybean, and climatic changes, resulting in low yield of food crops, among other environmental factors, have also informed the search for alternative sources of protein for animal feed. "The nutrition profile of insects, specifically proteins, exceed that of conventional sources such as *omena* and other plant proteins," he says. The researcher contends that farming of the insects will lead to less pollution and less space and time utilisation compared to animal sources. Insects too, are easy to farm since they occupy a small space compared to other protein rich feedstocks.

Joyce Muniu, a food science graduate student undertaking an acceptability study on cricket as a delicacy at the centre, has come up with a number of recipes and cricket-based human food products in an effort to demystify the insects as suitable for human consumption. Some of the products are: stir fry, mini-pizzas, cookies, muffins, granola bars, and pancakes.

In local languages, crickets are called *chenene* (Kiswahili); *ngiria* (Kikuyu); onjiri (Luo); iswenene or sichinchiribwa (Luhya); and *ebisase* (Kisii). Also known as "true crickets", of the family *Gryllidae*, the insects are elated to bush crickets as well as grasshoppers.

The largest members of the family are the bull crickets, *Brachytrupes*, which are up to 5cm (2in) long. More than 900 species of crickets are described; the Gryllidae are distributed all around the world except at latitudes 55° or higher, with the greatest diversity being in the tropics.

New rice hybrids set to hit the Kenyan market

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More than 250 varieties of hybrid rice are set to be launched in Kenya after a successful trial in Western Kenya for the last two years.

The seeds, which were developed by Baobab Breeding Systems Ltd (BBSL) and Hybrids East Africa Limited (HEAL) will be commercialised by Afritec Seed Company Ltd who are now the beneficiary of product development contracts with BBSL and HEAL.

"Our aim is to take hybrid rice technology from research farms of HEAL and put it into the hands of small farmers around Eastern Africa," said John Mann, Afritec Managing Director.

According to Mann, farmers who are the primary beneficiaries should expect to earn an additional Sh9,500 per acre value of hybrid rice seed planted. While hybrid rice has been used in China, US and Asia for many years, Afritec will market the very first hybrids developed in sub-Saharan Africa, seeds bred specially for needs of African farmers.

"Our investment have been funded by FoodTrade ESA and together we will work with thousands of smallholder farmers in East Africa to not only up skill them with adequate training on improved technologies but also with assistance in purchasing seeds, which farmer can pay back post- harvest," he said.

John Mann, Managing Director Afritec seeds Ltd. PHOTO: MILLIAM MURIGI

He said that the current 300 demo farms, which are in western parts of Kenya — Kisumu, Migori and Kuria — have shown positive returns. The first product development cycle is complete and the technology is ready for deployment to replace the high-yielding varieties, which are already in market.

"We have found that the greatest proof point for potential farmers is seeing the outcomes of hybrid rice growing which can take as little as three months either irrigated or rainfed," Mann added.