

Thailand taps IITA's expertise as cassava mealybug invades Asia

The Thai Department of Agriculture in Bangkok, has contacted IITA for help in the biological control of the cassava mealy bug, *Phenacoccus manihoti*, which had recently invaded Thailand and probably also Laos and Cambodia.

The mealy bug has already spread over 160,000 ha around the East and Northeastern provinces of Thailand, where cassava is an important export crop mainly for starch production and cattle feed.

To halt the spread of the mealy bug, a stock rearing colony of *Anagyrus lopezi* has been imported into Thailand from the IITA laboratories in Benin by Georg Goergen, IITA Entomologist. Goergen sent the materials in September 2009.

The wasps were placed into rearing under quarantine conditions in Bangkok and released in November 2009 after release permits were issued. A further release was made in January 2010.

It will be recalled that this same mealy bug had reached Africa in the late 1970s and caused



Collecting cassava mealybug for research

widespread devastation and even famine when it destroyed cassava, which in Africa is an important food and locally traded subsistence crop.

Respite, however, came when an IITA-led group of institutions initiated a campaign to find, import, rear, and distribute adapted natural enemies from South America, the

purported home of the foreign invader. By 1981, the encyrtid parasitoid, *A. lopezi* (then *Apoanagyrus* or *Epidinocarsis*), was located in Paraguay, later in Brazil, shipped through quarantine, mass-reared at IITA, and distributed. What followed was one of the greatest recent successes in classical biological control.

In Thailand, the cassava mealy bug was not immediately recognized because another closely related mealy bug species common on cassava, presumably *Phenacoccus madeirensis*, confused the situation, according to Peter Neuenschwander, IITA professor emeritus based in IITA-Benin.

He says the identification of the mealy bug by a taxonomic authority cleared the path for classical biological control.

It is hoped that IITA's involvement in the mealy bug control project in Asia will produce results within a much shorter time span and at much reduced costs as experts intend to leverage on past experience and techniques that made the African success story.

IITA-MARKETS project trains cassava farmers on mechanized harvester use



Some of the cassava farmer-participants during the hands-on session of the IITA-MARKETS training workshop.

IITA-MARKETS Project, which is part of the Global Food Security Response (GFSR) Program on increasing the productivity of cassava in selected Nigerian states has

trained 1,249 farmers (899 males and 350 females) on the use of the mechanical harvester in the commercial production of cassava.

Farmers were trained on the use of the cassava harvester to complement a number of technologies already introduced and adopted earlier. These are aimed at increasing productivity and improving income generation of the project's beneficiaries. Earlier, the use of planters, herbicides, sprayers, the brush-cutter, appropriate fertilizer management practices, ideal spacing, and high-yielding cassava stems had been introduced to the beneficiaries for cost-effective and competitive cassava production.

In the southwest, Paul Ilona, the resource person, explained to the participants that "the harvester is usually mounted on a tractor, and that the efficient use of a harvester starts with right land preparation techniques that would allow the tractor to pass easily between ridges. It may be difficult to use the harvester on ill-prepared land". Farmers were also trained on other requirements for efficient use and were shown how to use a mechanical harvester, capable of harvesting 10 ha of cassava farm per day.

A similar program was organized in the southeast by Udensi Udensi.

Nigeria can increase agric production without area expansion, study finds

Agricultural production in Nigeria can increase significantly through intensification of farmlands and not necessarily area expansion, according to a study by the Regional Strategic Analysis and Knowledge Support System (ReSAKSS).

The study, which was done to shed light on the possibility of further increasing agricultural production for planning purposes, reviewed available literature on the potential yields of selected food crops in Nigeria.

Consequently, it discovered high yield gaps between yields recorded by farmers who used improved varieties and techniques and the national average yield obtained in the country as a whole, suggesting that even with less area expansion, agricultural productivity can be increased.

Crops studied include rice, cassava, millet, melon, yam, maize, soybean, cowpea, okra, Irish potato, sorghum, and beniseed with yield gaps in some cases reaching as high as 317%.



Manson during his presentation on yield potential in Nigeria

Nwafor Manson, Policy Analyst, RESAKSS-WA Unit, says the study adopted descriptive analysis and critically reviewed the literature from over 300 publications.

"The results have shown that there is considerable room for yield improvement, and consequently, policies which aim at increased imports as a way of dealing with supply gaps are counterproductive.

He, however, says the study did not aim at documenting adoption rates or factors determining adoption rates. It also did not aim at documenting the factors that determine actual yields.

Another study recommendation to the Nigerian government is the necessity for policy makers to consider realistic yield targets when setting production targets for the sector and different crops.

Yade Mbaye, Regional Coordinator, SAKSS, says the study reveals that with proper extension services and farm inputs, resource-poor farmers can boost production and close the gap.

In the developing world, farmers face several constraints including lack of access to improved varieties, farm inputs such as fertilizers and herbicides, capital and infrastructural bottlenecks.

Scientist maps genes that confer drought tolerance on cowpea



Abicodo making his presentation

Genetic analysis of drought tolerance in cowpea (*Vigna unguiculata* L.) has revealed genes responsible for drought tolerance in cowpea.

An IITA Lukas Brader Fellow, Eugene Abicodo, who led the analysis, was able to map portions on the cowpea genome where genes responsible for drought tolerance could be found.

His findings have been hailed by breeders in the cowpea community as it would help in the improvement of drought tolerance in cowpea.

With about 70% of world cowpea grown in the savannah region of Africa, the crop provides not only incomes but also improves the health of resource-poor farmers.

Cowpea, however, faces several production constraints among which are pests and diseases, *Striga*, and drought.

Abicodo phenotyped and genotyped cowpea's recombinant inbred lines collected from IITA-Kano and IITA-Ibadan, and also constructed the genetic map of cowpea.

Consequently, he identified some QTLs or genes that confer drought tolerance on cowpea.

In his phenotypic analysis for drought, Abicodo measured parameters such as stomatal conductance, days to flowering, delay leaf senescence and yield.

Stress: What it is and how you could cope with it

We all find different things stressful and experience different symptoms of stress. While we all crave a stress-free life, a degree of stress is necessary to keep us motivated and enthusiastic. Getting the balance right helps us lead a healthy, active lifestyle and cope with stress in a positive way.

How does stress affect the heart?

Stress is not a direct risk factor for cardiovascular disease, but it's possible that stress may contribute to it depending on your coping mechanism for stress. Some people cope with stress with destructive behavior – such as smoking, drinking too much alcohol, and overeating. These increase your risk of cardiovascular disease.

There is no evidence to suggest that stress causes coronary heart disease or heart attacks, but if you have coronary heart disease and experience feelings of anxiety or are under lots of stress, it may bring on symptoms like angina.

What you can do to cope with stress?

Changing your lifestyle in a positive way can help you feel physically fitter and better able to cope with some of the demands put on you. A balanced diet and regular physical activity will help you cope with stress.

If you often feel stressed or anxious, it is important to learn how to relax. Some people find that physical activity, yoga, or other relaxation techniques can help. You could make a list of things that help you to relax and schedule one every day.

There is plenty that you can do to manage stress or anxiety. You may need to identify situations that make you feel stressed at home or at work and try to avoid them if you can.

You may find it helpful to learn about techniques for managing stress. If you think you are stressed or very anxious, talk to your doctor who will be able to help you decide on the best way to deal with it.

-from the British Heart Foundation Web site (www.bhf.org.uk)

Announcements

World Cowpea Conference 2010



IITA, in cooperation with partners – Pulse-CRSP, Purdue University, and the ISRA, Senegal – is organizing the 5th World Cowpea Research Conference to be held on 27

September - 1 October 2010 in Dakar, Senegal. Global cowpea experts will tackle research issues related to enhancing the profile of cowpea as a viable income-generating and food security crop. For more details and to submit papers, please visit the conference Web site at <http://cowpea2010.iita.org>.

Submission of abstracts: 15 April 2010

Abstracts approval and contact with presenters: 16 May 2010

Full paper submission: 30 September 2010

Early registration: 16 July 2010

ISTRC-AB to hold 11th symposium

The International Society for Tropical Root Crops- Africa Branch (ISTRC-AB) will hold its 11th symposium with the theme "Root Crops and the Challenges of Globalization and Climate" in Kinshasa, DR Congo, 4-8 October 2010.

Submission of abstracts: 30 April 2010

Submission of full papers: 30 July 2010

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