

CONFERENCE NEWS BULLETIN

CIMMYT releases hybrid tolerant to lethal maize disease

By Joseph Ojwang'

PHOTO CREDIT | Aghan Daniel

Maize and Wheat Improvement Centre (CIMMYT) has embarked on an ambitious program to develop high maize resistant seeds that are tolerant to the Maize Lethal Necrosis Disease (MLND).

CIMMYT senior breeder bases at the Africa office, Dr Steve Mugo announced that a number of new varieties have been rolled out to the farmers in an attempt to wipe out the disease in the farms.

Dr Mugo said that CIMMYT Global Maize Program, based in Nairobi, Kenya, has been collaborating with Kenya Agricultural and Livestock Organisation and so far they have intensively screened over 150,000 maize germplasm entries over the last five years.

The CIMMYT team also discovered and validated genomic regions in maize conferring MLN resistance, and then transferred MLN resistance into 30 elite, Africa-adapted inbred lines that were MLN-susceptible. This whole process was completed in just three years, using molecular marker-assisted breeding.

Mugo says the maize disease is still high in Kenya, Ethiopia, Uganda, Tanzania and Rwanda with an average prevalence of 27.5 percent.

"This disease is lethal and we have joined ranks with the national governments and other government agencies to develop resistant seeds to help in eliminating this disease,"



CIMMYT scientists during a recent field day in Naivasha, Kenya

he told the third African Conference of Science Journalists in Nairobi, Kenya.

In Kenya, Mugo says that CIMMYT is working closely with Kenya Agricultural and Livestock Research Organization in collaboration with other seed companies to develop more resistant seed varieties.

"We have a rigorous system of keeping a check list on the seeds we are giving out to farmers. This helps us to pull out seeds that are not tolerant to the disease," he said.

He says winning the war against the new maize disease is an uphill task that needs a concerted effort from different stakeholders.

Mugo pointed out that the countries with high prevalence are bound to lose out in achieving zero hunger and reducing poverty as outlined in the sustainable development goals if the war on the maize disease is lost.

He says farmers will continue to have poor harvest as a result of the disease thus affect the seed value chain.

"The disease is bad and can whip out a whole maize farm resulting into famine and poverty in family households," he said.

He further announced that a number of mechanisms are being employed to keep away the disease from the farms.

"We have a strong surveillance team even along the borders of this country. Besides that we are encouraging farmers to practice crop rotation, early planting and diversify farming," he said.

The disease was first reported in 2011 in a village in Bomet County, Kenya before it spread to other parts of the country attacking maize fields.

Mugo says the most common symptoms of the disease include loss of green colouration on leaves and premature drying of husks.

MESHA elects new leaders

By Thomas Bwire

The Media for Environment, Science, Health and Agriculture (MESHA), now has a new board.

The new officials were picked after a 2 hour Annual General Meeting which saw the 12 year old giant African science journalists association hold its fourth elections which were declared free and fair by the returning officer, Mr John Ombugu.

The board consists of a mix of old hands and new faces. The chairperson of the association, Ms Violet Otindo was elected unopposed to serve her last term as the Chair of the fledgling association. Her vice chairperson will be Mr Allan Obiero who joins the board for the first time after serving for nearly six years as the leader of Kisumu Chapter. Mr Aghan Daniel, who had earlier requested the members to replace him, was elected the Secretary to also serve his last term in that position. He will be deputized by Ms Agatha Ngotho of

PHOTO CREDIT | MESHA



Violet Otindo: Chairperson MESHA

The Star Newspaper, who was elected in absentia. Nation Media Group's Francis Mureithi, who is based in the Rift Valley retained his seat of treasurer. His assistant, also a new entrant in the board, will be Mr Bozo Jenje, a freelance journalist based at the coastal town of Mombasa.

For the board members slots, the positions went to seasonal television journalists, Ms. Zeynab Wandati of NTV and Mr. Philip Keitany of KTN.

The new office bearers pledged to bring in more efficiency to association to ensure MESHA continued to scale the heights of African science journalism. They asked members to support the association by engaging actively in all the activities the office organizes given that visibility is key for the work being done by the association.

MESHA is a network of science journalists in Africa that promotes responsible science reporting through organized workshops, conferences and science cafes in partnerships with relevant partners. The association also runs the only Science Magazine by an association of science journalists known as Sayansi that is published every three months.

Additional reporting by Christine Ochogo

Expert decries weak policy on insect feeds

PHOTO CREDIT | Suzgo Chitete



Dr Jemimah Njuki from IDRC

By Anita Tesot

Existing government policies are a challenge in the use of insect feeds in the poultry and fisheries subsectors in two East African states. Kenya and Uganda through an agreement between state agencies have relaxed policies that prohibit the use of insect feeds for the benefit of the farmers.

Senior Programme Specialist at International Development Research Centre (IDRC), Dr Jemimah Njuki said the problem with the policy was that any insect in feeds, whether dead or alive, was considered contamination.

Dr Njuki said that through an agreement between International Centre of Insect Physiology and Ecology (ICIPE), Kenya Bureau of Standards (KBS) and Ministries of Agriculture and Livestock, farmers from both countries are able to reduce the high cost of production.

"From research the insect feeds have proven to be cheap, nutritious and offer an alternative to farmers," she said.

According to ICIPE Research Scientist, Dr Mbi Tanga, the cost of poultry production depends on 60 per cent of feeds.

Dr Tanga said the institution is encouraging farmers to domesticate crickets and black soldier fly larvae to reduce their costs of production by half.

"We are now changing the attitudes of people towards these insects since we have evidence that the feeds can transform the poultry sector and improve food security," said Dr Tanga.

"Compared to chicken, soybeans and fish-based protein feeds, the insect feeds have higher protein content," said the researcher.



Mr. Emmanuel Oyier fielding questions from journalists

Uptake of anti bleeding device on the increase

By Carol Otieno Miyawa

A new device which can prevent uterine bleeding during delivery in Kenyan hospitals has been introduced into the market.

The Uterine Balloon Tamponade (ESM - UBT) stops bleeding among women after delivery within five to 10 minutes.

The cost-effective locally manufactured device is manufactured by a Non-governmental organisation KMET which is based in Kisumu county.

A study carried out by the University of Nairobi in 2016 showed that nationally, 17 women aged between 18 to 49 years die every day due to this condition. This translates to at least one woman dying every hour.

The First Confidential Enquiry into Maternal Deaths (CEMD) which occurred in 2014 in Kenya carried out by the Health Ministry says

between 6,000 to 8,000 women are estimated to die every year with post-partum haemorrhage (PPH) being the leading culprit.

The report identified the most common causes of maternal deaths as obstetric haemorrhage 192 (39.7 per cent); non-obstetric complications/indirect maternal deaths 96 (19.8 per cent) and hypertensive disorders associated with pregnancy 74 (15.3 per cent).

According to experts, maternal mortality account for 17.4 per cent of the total number of deaths of women of reproductive age.

The maternal deaths impact on the survival of new-borns, well-being of families and the economic productivity of the affected communities.

The United Nation Population Fund (UNFPA) says maternal mortality has reduced by 44 per cent worldwide over the past two decades but in Kenya the maternal mortality ratio remains high.

In 2015, Kenya recorded a total of 32, 021 maternal deaths of women aged between 18 to 49 years who died due to PPH.

Out of 47 counties in Kenya, 15 counties accounted for 98.7 per cent of the total maternal deaths.

In order to prevent such deaths, from 2013, both national and county governments committed themselves in setting aside more resources and personnel to reduce the high number of women dying from PPH.

Some of the steps that were proposed include constructing more health care facilities, constructing accessible roads, proving good equipment and skilled personnel in the existing health care facilities.

Experts say the newly introduced device (ESM - UBT) is an evidence-based, low- cost, effective, easy to use and safe solution for uncontrolled PPH.

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Coming soon: A life changing berry for farmers in Kenya

Speaking during the third African Conference of Science Journalists in Nairobi, KMET Communications officer Emmanuel Oyier said that deaths from PPH are preventable but only if they are properly managed.

"If hemorrhage after delivery is not managed, a healthy woman can die within two hours after developing PPH,".

The package of this device includes the ESM – UBT Kit, pocket check-list and PPH wall chart, a three – hour PPH training curriculum that includes best evidence PPH management (WHO/FIGO) with the UBT integrated.

Mr Oyier explains that the UBT is locally assembled and its components include a syringe, pair of condom, Foley Catheter, strings, information card, data and referral card.

ESM – UBT "arrests" hemorrhage due to uterine atony almost immediately when all has failed.

Mr Oyier asserts that 97 per cent survival from uncontrolled PPH among critically ill women has been recorded in Kenya which translates to at least 500 recorded lives saved.

He adds that this method is safe and can be done by any medic as compared to surgical processes which can cause death or loss of a womb.

ESM – UBT has now been introduced in 17 counties covering 1 000 health facilities, 450 health providers trained as master trainers and 5,000 health providers trained on UBT through centralised trainings and on – job trainings.

"Uterine Ballon Tamponade / UBT technique consists of water filled ballon that is inserted into the uterine cavity to apply pressure to the walls of the mother's uterus to stop excessive bleeding after delivery hence providing a simple, rapid, affordable effective point of care method of managing Postpartum Haemorrhage.



The Farmer Kiriro Kamau shows the portion of land where he recently harvested the Mulberry leaves

By Musembi Nzengu

For the past six years, Kiriro Kamau, a farmer in Saba Saba area of Murang'a County, Central Kenya, has been a happy man since abandoning maize farming and turning to Mulberry tree growing.

"I feel that I made the right decision because the yearly economic returns from the one acre of land where I plant the Mulberry trees far outstrip what I used get from the maize I had grown on the same piece of land for years," said Kamau last week.

He was speaking to a group of journalists who had visited his farm in company of officers from Thika Sericulture Centre in Central Kenya, nearly 60km from the city of Nairobi. The delegation was led by the Sericulture Centre Director, Dr. Muo Kasina.

Kamau said that as opposed to the about Ksh. 100, 000 (USD1000) he would realize from the sale of 36 bags of maize harvested from the one acre plot, the Mulberry trees on the same plot fetch him between Ksh. 300, 000 (USD3000) to Ksh 400,000 (USD4000) in two years.

The best maize yield I have harvested from this plot is about 18 bags which is sold at Ksh 3000 (USD30) which comes to Ksh 54,000 (USD540). Now compare it with Ksh 400,000 (USD4000) for two harvests of mulberry," said Kamau, adding that he harvests the leaves from the Mulberry trees and sell them as fodder for animals. He added that the leaves are also used to make tea due to their medicinal values. "Consumption of tea from the leaves reduce aging, they lower both blood sugar and pressure and it is a potent anti-oxidant. The tea is popular with many residents who know its value," he said.

The farmer's observations were echoed by Dr. Kasina who had earlier. For the past six years, Kiriro Kamau, a farmer in Saba Saba area of Murang'a County, Central Kenya, has been a happy man since abandoning maize farming and turning to Mulberry tree growing.

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Dr Nelly Mugo of KEMRI addresses science café participants on PrEP organized within the precinct of the African Conference of Science Journalists III

Renowned scientist calls for increased use of PrEP

By Mike Mwaniki

People most at risk of HIV infection have been urged to enrol on Pre-exposure prophylaxis (PrEP) to protect themselves from the disease.

Speaking during a science café, Kenya Medical Research Institute (KEMRI) chief research officer, Dr Nelly Mugo revealed that studies showed PrEP conferred over 90 per cent protection against HIV infection when taken regularly.

PrEP is a combination of two drugs that people most at risk can take before sex to prevent HIV infection.

Existing evidence, Dr Mugo noted, shows that people who take tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) as PrEP have a 90 per cent lower chance of being infected with HIV than people not taking it.

The Health Ministry is offering PrEP free-of-charge in selected public health facilities as part of a combination HIV prevention programme for people most at risk of HIV infection.

Dr Mugo identified these high-risk groups as young people, serodiscordant couples, people who inject drugs and sex workers.

"Journalists have a crucial role to play in mitigating against barriers—which include myths and misconceptions—on the use of PrEP..."

"As scientists, we are particularly concerned over the high rate of new HIV infections occurring among our youth aged between 15 to 24 years who are contributing 50 per cent of the infections," Dr Mugo noted.

The KEMRI chief research scientist added: "At the same time, I would

like to urge journalists to be protective especially on our young girls while covering sexuality issues..."

"As a country, it is also high time that we should also rethink on the introduction of sexual education for our youth in our schools to enhance awareness,".

At the same time, Dr Mugo also warned of an upsurge of sexually transmitted infections (STIs) in Kenya such as syphilis, gonorrhoea, chlamydia and mycoplasma genitalia which cause infertility and were especially difficult to detect in women.

According to a newly released World Health Organisation (WHO) report titled "Coming of age: Adolescent health" the world now has more young people than ever before—of the 7.2 billion people worldwide, over three billion are younger than 25 years making up 42 per cent of the world population.

Around 1.2 billion of these young people are adolescents aged 10 and 19 years.

Young people can also face sexual health issues such as sexually transmitted diseases or teenage pregnancies.

At the same time, the Kenya Aids Indicator Survey (2012) warns that young people take higher risks in general including having unprotected sex.

Dr Mugo asserted: "We have a responsibility to protect our youth—whose population is huge—by making it our business to know what they are doing in protecting themselves..."

"Although the number of new HIV infections among new borns has declined drastically, we are extremely worried at the increased cases among our youth,".

Earlier, while speaking to this writer, the National Aids and STI Control Programme (NASCO) Deputy Head, Dr Irene Mukui revealed that Kenya has recorded the highest number of people in Africa taking PrEP.

Currently, more than 20,000 people are taking the drugs, which were rolled out by the Ministry of Health in May 2017.

Why it matters to take the right drug dosage

By Thomas Bwire

Majority of us in our day to day lives end up misusing drugs either knowingly or unknowingly.

This is a practice that has been there since time immemorial and most of the drugs said to be on the radar of abuse include painkillers that are easily bought from over the counters.

The challenge with this kind of approach as experts point out is that we never get to ask if the drugs are of good standards, whether the person standing behind the chemist windows are qualified personnel who are well versed with drugs they give to customers or all they need is to record the day's sales.

While speaking at the 3rd African Conference of Science Journalists in Nairobi Kenya, Dr. Evelyn Wesangula, says that majority of us, are caught in the web of misuse of drugs without any prescription in many times. "You feel that you have some headache and quickly run to the shop near you and purchase painkillers." she says

In her presentation she shared a good case scenario from Sir Alexander Flemming in 1945 while receiving his Nobel prize made a very powerful statement that reflects on how majority of us are living right now. In his quote he said. "It's not difficult to make this microbes resistant to penicillin in the lab, by exposing them to concentrations that are not sufficient to kill them."

Flemming also added in his early years statement that there is a danger for an ignorant man ending up over-doing himself/herself.

With this statement, Dr. Wesangula posed to ask the audience the following question, "how many of us struggle to finish an antibiotic? When you purchase a septrin, how many struggle?"



Dr. Evelyn Wesangula addresses delegates at the 3rd African Conference of Science Journalists recently

In surprise response only a handful of hands went up as Dr. Wesangula, took the roll call. "Well you see medication would be taken only for a few days and after day three, majority of us will drop the medication halfway right? That is what Flemming said during his early years that we are ignorant." added Dr. Wesangula.

It was noted that Sir. Fleming was so worried about us, at that time, that one day we shall get to that place where we shall end up under-dosing ourselves simply because the symptoms have subsided, and that the microbes have not all died. This is the notion that we all walk in, day in day out.

Experts say that, many a times we under-dose ourselves and end up exposing ourselves to non-lethal quantities, thus making the microbes become even more resistant. Thus next time when you go back to use the same drugs, you have a strong bacterial resistance and that the drug you are trying to administer yourself cannot work effectively any more.

Other ways that we easily expose ourselves to infections as highlighted by Dr. Wesangula included our way of day to day life such as eating food in open spaces that are next to sewer. Such spots can easily be termed as high risk areas for an infection to the human body. A good example that can be highlighted is an area such as a refugee camp, where majority of people end up sharing the little resources that the camps can hold. This is indeed a complex matter and needs everyone's attention.

Another big challenge highlighted among some of the African countries is about the number of drugs available where some vendors are said to end up carrying antibiotics in buckets as they hawk them along the streets, such practices must be top agendas on our respective health ministries to ensure quality standards of how medicines are handled should be with good hygienic standards.

Anti microbial resistance to claim 10 million annually by 2050

Dominick Derricks

Ten million people will be dying annually by 2050 if the world does nothing about anti-microbial resistance (AMR), a scientist has warned..

Speaking during the third African Conference of Science journalists, Dr Evelyn Wesangula, stated that half of the deaths will occur in the sub-Saharan Africa.

The phenomenon which occurs as a result of bacteria developing resistance to antibiotics is becoming a major concern globally.

"No one is safe, when it comes to anti-microbial resistance; we cannot achieve the sustainable development goals if we do not move with speed to address it, This is because it has a direct impact on our population and food security" Said Dr Wesangula.

According to the expert it will cost the economy USD120 trillion by 2050 if nothing is done to avert the situation.

She further stated that strides made in the health sector will be hard to manage if anti-microbial continue to be ineffective.

"We have made advancements in medicine, for example we can have complicated deliveries happening or have pneumonia being treated but because of the loss of effectiveness of anti-biotics all these things are actually going to be difficult to manage," said Dr Wesangula.

According to Dr Wesangula misuse and overuse of anti-microbial by human beings is the major cause of anti-microbial resistance.

"Misuse is like what you do and what I do, I do not complete my dose and overuse is when you go to the doctor with a cold and you insist that he gives you the antibiotics that can hit it hard and hit it fast, we do not necessarily need it but we will still take it as medication," said Dr Wesangula.

Dr Wesangula also pointed out that environmental contamination was another key area that needs to be looked into if we plan to overcome anti-microbial resistance.

"Who monitors what the pharmaceutical industries release into our rivers? Do we have a special sewerage system for farmers, hospitals, industrial and domestic effluent? Everything ends up in the same place and the same water is used for irrigation of plants. If these plants have not been properly processed we stand a chance of getting resistant bugs," said Dr Wesangula.

Dr Wesangula further noted that pharmaceutical companies have become tired of producing new anti-microbial, a situation that is putting the world at risk.

"It is now 30 years since a new class of anti-biotics were introduced to the market, nobody is interested in investing in developing a new drug because as soon as it is released to the market the microbe develops resistance," said Dr Wesangula.

Causes of maternal mortality explained

By Elizabeth Ochogo

Safe delivery and having your expected baby in your arms after the nine months of pregnancy is the most heart-charming feeling a mother would ever have in life while to the born baby, the mother's warmth is the first greatest feeling experience. Nevertheless, some babies do not get the chance to experience the feeling after abruptly being robbed off their mothers by the cruel death.

Mothers get to the labour wards full of life expecting to come out of it with the same life but unfortunately not all of them make it due to one or two reasons.

While addressing delegates at the Third African Conference of Science Journalists held in Nairobi last

Saturday, Mr Emmanuel Oyier stated that maternal mortality is one of the problems that has left many babies motherless here in Kenya. Oyier stated that Kenya is ranked among the top 10 countries in the globally where 5,000 to 6,000 lives are lost every year. In every 300 women in Africa 1 dies out of pregnancy and birth-related complications.

Obstetric hemorrhage (excess bleeding before or after birth) is the main cause of maternal mortality rated at 39.5 percent followed by other illnesses such as high blood pressure, malaria, HIV-related complications etc which stand at 20 percent followed by pregnancy-related infections at 15.2 percent down to direct deaths without an obstetric code at 0.2 percent.

Poor infrastructure, delays in conducting the right medical

attention and quacks involving themselves in the field are also some of the great causes of the deaths.

Post-mortem hemorrhage that is caused by giving birth to many children can also interfere with the contraction of the uterus making it difficult to contract back to its normal size after the subsequent delivery that results into excessive bleeding.

A process termed as Uterine Balloon Tamponade (UBT) where water is pushed to the uterus in a balloon through a catheter using a syringe to take the shape of the uterus itself helps a lot in stopping the bleeding, said Oyier.

Some of the easiest ways to help contract the uterus back to its normal size include gently massaging the stomach using your palm and breastfeeding the baby almost immediately after birth.



Dr. Kasina (right), feeding silkworms in a rearing house

He was speaking to a group of journalists who had visited his farm in company of officers from Thika Sericulture Centre in Central Kenya, nearly 60km from the city of Nairobi. The delegation was led by the Sericulture Centre Director, Dr. Muo Kasina.

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The farmer's observations were echoed by Dr. Kasina who had earlier served the visiting media team with the Mulberry leaf tea soon after they arrived in his office. Dr. Kasina added that the tea reduces the risk of cancer, lowers cholesterol in the body and reduces inflammation.

"I encourage each one of you to take this Mulberry leaf tea as many times as you can in a day. Its medicinal benefits is not only incredible but invaluable to humans," said Dr. Kasina. He added that the Mulberry tree is ideal for the breeding of Mulberry caterpillar worms that produce the raw material for silk. Disclosing that the core business of Thika Sericulture Centre which he heads is to produce silk, Dr. Kasina noted that the Mulberry caterpillar worms are bred at the institution to produce silk.

He explained that at the caterpillar stage, worms produced by moths are fed on Mulberry leaves at the Centre. He said research at the Centre had shown that growing of Mulberry trees in large scale not only increases the production of the coveted silk clothing materials but also boost the economic wellbeing of the farmers.

"In every cycle of worm breeding on an acre of the Mulberry trees, a farmer can feed worms that can produce between 7 to 10 kilogrammes of silk for which a kilogramme would fetch at least Ksh. 1000 (USD100) translating to Sh. 10,000 (USD1000)," he said. The caterpillar worms weave a silky cocoon around themselves as they enter the pupae stage and the cocoons are thus collected for the processing to produce silk.

"We have been doing small scale worm production and silk production for demonstration but in 2019 we intend to reach out to farmers for massive production of silk," said Dr. Kasina. He disclosed that a silk processing factory is being erected at the Thika Sericulture Centre and he envisaged that at least 10,000 acres of land in the neighbourhood would be put in Mulberry trees growing and the associated silk worm breeding.

Dr. Kasina said 4000 seedlings are required for every acre of land. One seedling, if sold from the Sericulture Centre, goes for Ksh. 10 (USD 1 cent) but said that concession is given to farmers who purchase more than 4000 seedlings as the cost would be Ksh. 5 (USD 0.5 cents) apiece.

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