



## KEPHIS and Kericho County Train Farmers on Mitigating against the Maize Lethal Necrosis Disease

**Cheborgei, Kericho County** – Maize farmers in Kericho County have been urged to plant alternative crops to counter the Maize Lethal Necrosis Disease. Speaking during a farmers field day in Cheborgei, Agriculture Principal Secretary Dr. Richard Lesiyampe advised the farmers that tolerant varieties are available and farmers should plant these so the disease is minimized. Another way of controlling the disease was planting certified seed. Kericho Governor Prof. Paul Chepkwony informed the over 700 farmers present that pineapples from the county now have a market in Israel and farmers should explore exporting the fruit. He also urged the youth to take up agribusiness.



KEPHIS MD Dr Esther Kimani explaining a maize variety tolerant to the Maize Lethal Necrosis Disease to CS Charles Keter(right), Kericho Governor Prof Paul Chepkwony(in glasses) and Agriculture PS Dr. Richard Lesiyampe(left) during the Cheborgei Field Day



Agriculture PS Dr Richard Lesiyampe addressing farmers at Cheborgei Field Day in Kericho County. He urged farmers to plant certified seed, to plant alternative crops such as potatoes and plant tolerant maize varieties to counter the Maize Lethal Necrosis Disease

“I want to urge the young people here to take up agribusiness and not leave it to the older generation,” he stated.

On the Fall Army Worm, the Chief Guest Cabinet Secretary Hon. Charles Keter advised the farmers that there were now pesticides available to mitigate against the pest. “The pesticides have now been approved for use by farmers and they will bring the pest population down,” he said.

KEPHIS MD Dr. Esther Kimani urged the farmers to seek assistance and advice on any agricultural issues from the nearest KEPHIS office, nearest ministry of agriculture office or nearest country agricultural office.



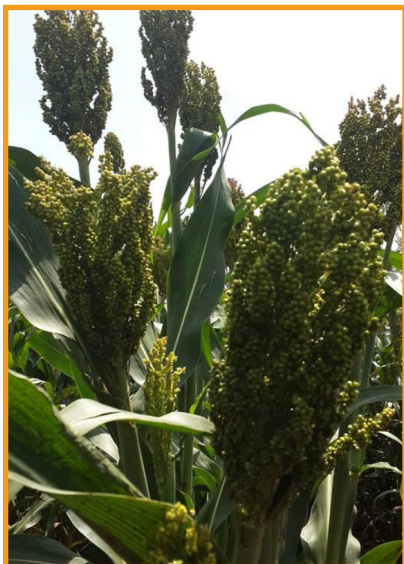
The field day was organized by KEPHIS Nakuru regional office in conjunction with the county government of Kericho. Some of the crops in the demonstration plots were maize, sorghum, Rhodes grass, beans, cabbage and potatoes.

The Maize Lethal Necrosis Disease was first reported in Bomet a few years ago and has since being controlled but there are still some areas with pockets of the disease. [KN](#)



Kericho Governor Prof. Paul Chepkwony addressing farmers during the Cheborgei Field day in Kericho county. He advised that there is market in Israel for Kericho's pineapples. He also urged the youth to take up agriculture as a business

CS Charles Keter during the Cheborgei field day in Kericho county. He represented Hon. Willy Bett during the event. He advised the over 700 farmers present that recommended pesticides were now available for use in controlling the Fall Army Worm



A healthy sorghum crop which was on display at the Cheborgei Field Day, Kericho county



Potatoes on display at the Cheborgei Field Day, Kericho county. Farmers in the area were urged to plant alternative crops such as the tuber to mitigate against the Maize Lethal Necrosis Disease.



Cabbages: farmers were urged to plant alternative crops such as vegetables to mitigate against the Maize Lethal Necrosis Disease.



# Kisii Farmers Urged to Produce Avocados for the Local Market and for Export



Cabinet Secretary Ministry of Agriculture, Livestock and Fisheries, Mr. Willy Bett (centre) with a prominent Kisii avocado farmer (2nd left) addressing the media on the importance of diversifying to avocado production in Kisii.

**Kisii** - Farmers in Kisii County have been urged to diversify to avocado farming to improve their standards of living.

Addressing over 500 farmers in Kenyena Stadium in Kisii County, CS Agriculture, Livestock and Fisheries Hon. Willy Bett advised the farmers that Hass, and Pinkerton varieties were in high demand in overseas markets and they should take this advantage to grow the varieties. "You have a conducive climate and fertile soils to produce avocado and also process into oil as value addition," he added.



KEPHIS MD Dr. Esther Kimani teaching farmers on the benefits of diversifying to avocado production. She highlighted how the fruit is used in the preparation of salads, for production of beauty products and for medicinal purposes hence its high demand locally and internationally.



KEPHIS MD Dr. Esther Kimani reiterated that avocado has health, medicinal and beauty benefits, hence its high demand. “Avocado is used to prepare salads and juice, to produce lotions and creams and for medicinal purposes,” she said. She also asked the farmers to liaise with local hotels and see if they can supply the fruit, thereby enhance their businesses. She also advised the farmers to be vigilant in addressing pests and diseases which compromise quality standards.

“Also purchase seedlings from nurseries that have been certified by KEPHIS. We can also teach you how to be exporters of avocado,” she said.

KEPHIS has been working with county governments to

train farmers on avocado production. The Corporation has trained farmers in Kaptel in Nandi and Soin/Sigowett in Kericho County. Plans are underway to cover other counties.

Kenya exports avocado to the United Arab Emirates, the United Kingdom, Egypt, The Netherlands, France, Saudi Arabia, Belgium, Spain, Qatar, Bahrain, Kuwait, Germany and Hong Kong. There are emerging markets in Malaysia, Singapore and South Korea.

The farmers forum was preceded by training of over 100 farmers at the Agricultural Training Centre in Kisii town where farmers were sensitized on quality standards for export, management of pests and diseases and quality standards/requirements for fruit tree nurseries. [KN](#)



Farmers who attended the training on avocado production pose with the KEPHIS MD Dr. Esther Kimani. They were taught on the quality standards for export, how to manage pests and diseases and quality standards/requirements for avocado fruit tree nurseries.



# **SPEECH BY DR. ESTHER KIMANI, MANAGING DIRECTOR, KENYA PLANT HEALTH INSPECTORATE SERVICE (KEPHIS) DURING THE OFFICIAL OPENING OF THE 2017 INTERNATIONAL FLOWER TRADE EXPO(IFTEX), 7TH JUNE 2017, VISA OSHWAL CENTRE, WESTLANDS, NAIROBI**

**Mr. Dick van Raamsdonk,  
President of HPP Exhibitions**

**Mr. Richard Fox, Chairperson,  
Kenya Flower Council**

**Mrs. Jane Ngige, Chief Executive  
Officer, Kenya Flower Council**

**Ms. Grace Kyalo, Technical Manager,  
Horticultural Crops Directorate**

**Ladies and gentlemen**

**All protocols observed**

**I**t gives me great pleasure to be at this event today, the official opening of the International Flower Trade Expo 2017. I want to congratulate the organizers, HPP Exhibitions, for putting together such an important and key event that has brought together players in the floriculture industry; from growers, traders, merchants, exhibitors and government regulators from Kenya and around the world. Indeed, HPP Exhibitions are a one stop shop for all players in the floriculture value chain to meet together and discuss pertinent issues affecting the flower sector.

Kenya Plant Health Inspectorate Service (KEPHIS) is the government agency that assures the quality of agricultural inputs and produce to promote food security and sustainable development. Our regulatory and phytosanitary role includes the export of flowers which I am happy to note forms the bulk of plant exports, particularly to our key markets. The export of flowers, together with fruits and vegetables, earns the country billions of shillings in foreign exchange every year. As inspectors, we ensure that only produce that meets the stringent quality requirements of the export market are exported. We ensure the produce is free of pests and diseases, is



of the correct shape and size, is packed properly, amongst other requirements. I am happy to say that our globally acclaimed produce is admired and is in demand in our key markets.

Ladies and gentlemen, we are delighted at the prospect of doing business with the USA market, which is as a result of opening of the airspace for direct flights between Kenya and the USA. As KEPHIS, we see a future where the volumes of exports of plants and plant products will increase, thus earning Kenya more foreign exchange. I would like to reiterate that it is of paramount importance for traders to familiarize themselves with the requirements of plant exports to the USA. This will avoid interceptions or the rejection of produce at border points in the USA. Particularly, we wish to state that plant produce needs to be free of pests and diseases and needs to meet all the requirements of the USA market. Hence, I urge all here present to familiarize themselves with the requirements of the USA Plant Import Permit and phytosanitary certificates. This will make the export process easier and faster.

As a regulator in the agriculture sector, KEPHIS exists to facilitate business and to create a conducive environment for businesses to grow in the plant sector. We therefore urge all flower exporters to work with us in the export of flowers not only to the US market, but also to all other markets around the world.

Lastly, I urge you all to visit the KEPHIS exhibition booth during the three days of this event to engage our staff and to see how we can further be of assistance to you.

Once again, I congratulate the organizers for a good event and wish all you fruitful deliberations during the expo. **KN**

*Thank you*

# Potato Meeting Sees Opportunities for Immense Growth and Expansion despite Disease Challenges

## KEPHIS Headquarters, Nairobi

– Potato growers, merchants, multipliers, regulators, farmers and other stakeholders have been urged to exploit the available opportunities in the potato value chain and leverage on the challenges facing maize production to increase potato production. Addressing participants at the 4th Seed Potato Production and Certification Course at KEPHIS Headquarters,

KEPHIS MD Dr. Esther Kimani said potato has market opportunities in Kenya and also for export. “However, use new technologies and the available knowledge in potato to further expand production,” she said.

The opportunities are in processing to chips and crisps, multiplication, sale of seed potato and cold storage facilities. She further urged the participants to use certified seed as a first step for enhanced potato yields.

KEPHIS GM in charge of quality assurance Mr. Simeon Kibet reminded the participants that potato is the 2nd most important food crop in Kenya after maize, hence the importance of the tuber in food security. However, he cautioned them to be aware of potato diseases. “We have released (made available for production) 53 potato varieties of which 10 varieties are for processing into chips and crisps,” he emphasized. Dr. Felista Makini from the Kenya Agricultural and



MD KEPHIS Dr. Esther Kimani (standing) addressing some participants attending the 4th Seed Potato Production and Certification Course at KEPHIS Headquarters, Nairobi

Livestock Organization (KALRO) also highlighted the importance of potatoes, especially with the current challenges affecting maize, Kenya’s staple crop. Maize has recently faced the challenges of the Maize Lethal Necrosis Disease (MLND), drought at the beginning of the year and currently, the effects of the Fall Army Worm.

Diversification is important in light of the challenges facing maize and contributing to food security,” she said. “We also have to re-think our systems in light of potato diseases and leverage where there are no diseases,” she added. Currently farmers produce 10 tonnes of potatoes per hectare against a capacity of 60 tonnes per hectare.

Mr. Wachira Kaguongo of the National Potato Council of Kenya urged the participants to utilize technologies and innovations in the potato value chain.



KEPHIS MD Dr. Esther Kimani (4th right), Ian Barker of Syngenta Foundation (centre), Dr. Felista Makini of KALRO (3rd right) and George Osure of Syngenta Foundation (2nd right) after the official opening of the 4th Seed Potato Production and Certification Course at KEPHIS Headquarters, Nairobi

The weeklong conference has brought together participants from Nandi County, Taita Taveta County, Marsabit County, Turkana County, Tana River County, Nyandarua County, Garissa County, KALRO, Sungus Farm, Molo, Syngenta Foundation, Agricultural Development Corporation and New Holland Chips.

The training was sponsored by Syngenta Foundation but some students were self-sponsored. [KN](#)



# Special Feature: The Fall Army Worm (FAW) Mitigation Measures



**Bio:** A moth native to South America and feeds on a wide host of plant species, including maize, rice, sorghum and sugarcane. Its caterpillar has a voracious appetite and has a high reproduction capacity (up to 2,000 eggs per female). Strong fliers, (can fly 35 - 100km per day) and affect all stages of the affected crop.

restricted to the Americas



In Brazil, where FAW is endemic, it has been estimated to cost **US\$600 million a year** to control



## History of Invasion in Africa

**West Africa:** January –June 2016

**Southern Africa:** December 2016 –February 2017

### East Africa

Uganda April 2016

Kenya in December and confirmed in March 2017

### FAW SPREAD IN KENYA

By June 2017, this pest has been reported in the following regions:

- 1) **Western:** Busia, Trans Nzoia, West Pokot, Kakamega, Bungoma, Vihiga

- 2) **Nyanza:** Siaya, Migori, Kisumu, Homa Bay

- 3) **South Rift:** Nandi, Kericho, Narok, Nakuru

- 4) **North Rift:** Elgeyo Marakwet, Uasin Gishu, Baringo

- 5) **Central Kenya:** Kiambu, Kirinyaga

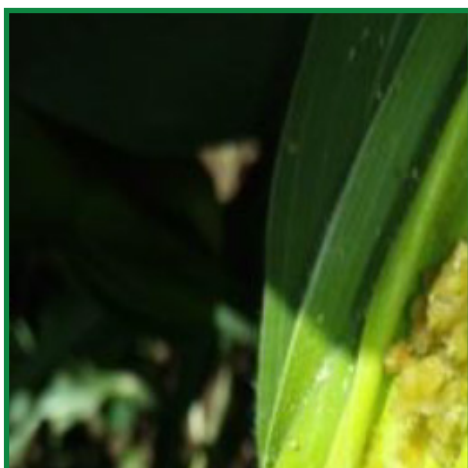
- 6) **Eastern:** Tharaka Nithi, Machakos, Makueni, Meru

- 7) **Coast:** Taita Taveta, Kilifi, Kwale, Tana river

*Note: First detection in Trans Nzoia in March 2017 and over 200,000 hectares of maize already infested.*

**HOST CROPS:** Attacks over 100 species of the Poaceae family.  
This includes Maize, Sorghum, millet, rice, sugarcane, wheat , Napier grass

## DAMAGE SYMPTOMS

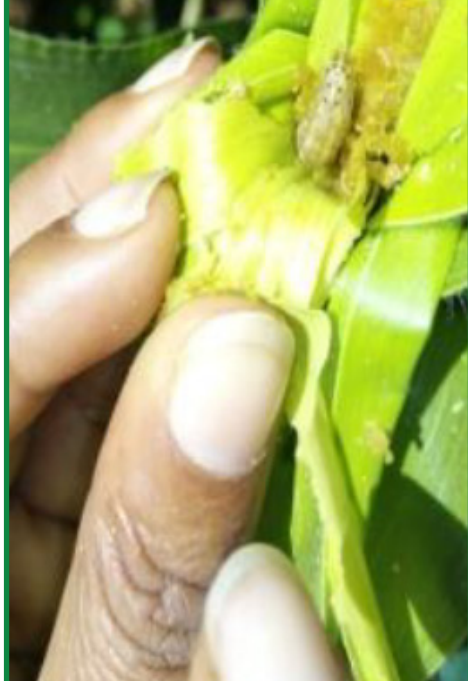


## Factors influencing the spread of the Fall Armyworm

Diverse pathways of spread

either as eggs, larva and pupa

- (i) Commodity: green maize, fruits, vegetables or any other host plant
- (ii) Fodder/pasture: cutting and moving infested plant material
- (iii) Implements: farm implements





# Special Feature: The Fall Army Worm (FAW) Mitigation Measures

## FAW MANAGEMENT TOOLS



Proper Identification, Scouting, Monitoring and forecasting, Cultural Practices, Mechanical and Physical, Host plant resistance, Pheromones, Biological control, Botanical control, Insecticides and area-wide Integrated Pest Management.

Application of ash or fine sand between maize funnels is reportedly good in reducing infestation

### USE OF PHEROMONES

Synthetic products that mimic the female pheromones

Good for control and monitoring

1 lure per acre sufficient BUT using area wide approach

#### Some sources:

**Evergreen Growers Supply**

(email: [info@evergreengrowers.com](mailto:info@evergreengrowers.com))

**Russell IPM Ltd**

(email: [info@russellipm.com](mailto:info@russellipm.com));

**Novagrica – Biological products and solutions**

(email: [info@novagrica.com](mailto:info@novagrica.com)).

**Koppert Biological Systems (K) Ltd** (+254 731 202191, [info@koppert.co.ke](mailto:info@koppert.co.ke), [www.koppert.co.ke](http://www.koppert.co.ke))

## CULTURAL PRACTICES:

**Synchronize sowing:** Management of sowing dates

**Carrying maize stovers:** Management of feeds

**Sale of green maize:** if it is infested, movement should be discouraged

Carry out ploughing to expose the pupae to predators (birds) and solar heat. This should be done during dry periods

Crop health and nutrition management  
Physico-chemical Control

Use hands to squash the caterpillars: killing one caterpillar prevents more than 1500 new caterpillars after a period of less than 4 weeks.



# Special Feature: The Fall Army Worm (FAW) Mitigation Measures

## INSECTICIDES

✓ Application of an insecticide is usually not economical for control of the fall armyworm

✓ However, it may be necessary if the infestation is extremely severe and/or the plants are under stress.

✓ Synthesized molecules for control of pests

✓ Quite poisonous

✓ WHO classification: 1a, 1b, 2, 3, 4, U

Groups: Organochlorines, Organophosphates, carbamates, Pyrethroids, Neonicotinoids etc

✓ Works: Contact, Nervous system

They are very important when pest population is high.

✓ When low, other methods should be used. As a rule of thumb, only use insecticides when majority of the plants have damage.

✓ It is recommended to avoid those that have long residual effects particularly to avoid residues on food commodities or contaminating meat and milk for those maize materials that are fed to livestock.

✓ Remember pesticide use kills useful insects. Thus avoiding the use of chemical pesticides helps to sustain and increase populations of natural enemies.

✓ We need natural enemies for long-term sustainable management of the pest. It is not possible to totally depend on insecticides because of resistance development and negative environmental effects

✓ High and frequent use of insecticides will result in resistance development by the pest.

✓ It is thus possible to create 'super' caterpillars not responsive to insecticides.

✓ To avoid this, it is recommended to change insecticide molecules and/or class after every three (3) sprays of same molecule.

✓ Further, combining with other methods of control reduces and minimizes chances for resistance development.

## PEST CONTROL PRODUCTS FOR CONTROL OF FAW IN KENYA ; PRODUCTS REGISTERED FOR AFRICAN ARMYWORM IN KENYA

	Active ingredient	Trade Name
1	Acephate	ASATAF SP
2	Cypermethrin + Chlorpyrifos	CYCLONE 505 EC
3	Diflubenzuron	DIMILIN OF-6
4	Trichlorfon	DIPTEREX 95 SP
5	Chlorpyrifos	DURSBAN 4 EC
		PYRINEX 48 EC
6	Cypermethrin	RIPCORDER 5% EC
7	Lambda-Cyhalothrin	TATA UMEME 2.5 EC
8	Alpha-Cypermethrin	BESTOX 100 EC



	Active ingredient	Trade Name
1	Chlorantraniliprole 200g/L	Coragen
2	<b>Flubendiamide</b>	
	Flubendiamide 480g/L	BELT
	Spirotetramat 75g/L + Flubendiamide 100 g/L	TIHAN OD 175 Oil Dispersion
3	<b>Indoxacarb</b>	
	Indoxacarb 150g/L	MERIT 150 SC (Suspension concentrate)
	Indoxacarb 150g/L	AVAUNT 150 EC
4	<b>Emamectin benzoate</b>	
	Emamectin Benzoate 19.2g/L	ESCORT 19 EC (Emulsifiable Concentrate)
	Emamectin benzoate 50g/Kg	HABLE 5 WG (Water dispersible granules)
	Emamectin Benzoate 19.2g/L	PROVE 1.92
	Emamectin Benzoate 19.2g/L	ZORAN 1.9 EC
5	<b>Lufenuron</b>	
	Lufenuron 50g/L	HERITAGE 5% EC
	Lufenuron 50g/L	LEGACY 5% EC
	Lufenuron 50g/L	MATCH 50 EC
	Lufenuron 50g/L	MAY 50 EC
6	<b>Spinetoram</b>	
	Spinetoram 120g/L	RADIANT 120 SC
	Spinetoram 250g/Kg	DELEGATE 250 WG

## ACTIVE INGREDIENTS REGISTERED IN SOUTH AFRICA FOR FAW WITH SIMILAR ACTIVE INGREDIENTS REGISTERED IN KENYA FOR OTHER USES

	Active ingredient	Trade Name
1	Chlorantraniliprole 200g/L	Coragen
2	<b>Flubendiamide</b>	
	Flubendiamide 480g/L	BELT
	Spirotetramat 75g/L + Flubendiamide 100 g/L	TIHAN OD 175 Oil Dispersion
3	<b>Indoxacarb</b>	
	Indoxacarb 150g/L	MERIT 150 SC (Suspension concentrate)
	Indoxacarb 150g/L	AVAUNT 150 EC
4	<b>Emamectin benzoate</b>	
	Emamectin Benzoate 19.2g/L	ESCORT 19 EC (Emulsifiable Concentrate)
	Emamectin benzoate 50g/Kg	HABLE 5 WG (Water dispersible granules)
	Emamectin Benzoate 19.2g/L	PROVE 1.92
	Emamectin Benzoate 19.2g/L	ZORAN 1.9 EC
5	<b>Lufenuron</b>	
	Lufenuron 50g/L	HERITAGE 5% EC
	Lufenuron 50g/L	LEGACY 5% EC
	Lufenuron 50g/L	MATCH 50 EC
	Lufenuron 50g/L	MAY 50 EC
6	<b>Spinetoram</b>	
	Spinetoram 120g/L	RADIANT 120 SC
	Spinetoram 250g/Kg	DELEGATE 250 WG

Products which farmers are trying for control of FAW

- ✓ Diazinon
- ✓ Acephate
- ✓ Deltamethrin
- ✓ Betacyfluthrin
- ✓ Imidacloprid

☞ (d) Biopesticides registered for control of caterpillars and can be considered for efficacy testing against FAW

☞ *Bacillus thuringiensis* e.g. Baciguard, Halt, Dipel, Xentari





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[www.kephis.org](http://www.kephis.org)



## IMPORTANT NOTICE ON CHANGE OF KEPHIS CONTACT

### DETAILS

In order to enhance communication with our stakeholders, customers and the public, we are happy to inform you of our new phone numbers which will make it easier for you to reach and engage with us.

The new numbers are as follows:

Telephone: 020 661 8000

Cell phone: 0709 891 000

Our other contacts remain the same:

[director@kephis.org](mailto:director@kephis.org)

[kephisinfo@kephis.org](mailto:kephisinfo@kephis.org)

[www.kephis.org](http://www.kephis.org)

[Facebook.com/kephis](https://www.facebook.com/kephis)

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