

Seeds of Gold

IN BRIEF

40,000 farmers in various sectors to benefit from new initiative

Trans Nzoia county government has partnered with Micro Enterprises Support Programme Trust (MESPT) to launch a five-year programme that seeks to accelerate employment in the agriculture sector. Named Green Employment in Agriculture Programme (GEAP), it is funded by Danida. The initiative was launched on Thursday in Kitale as MESPT celebrated its 20th anniversary. Ann Nguni, MESPT corporate communications officer, said in a press release that GEAP targets 40,000 smallholder farmers and will be implemented in 13 counties namely Kilifi, Kwale, Nakuru, Nyandarua, Siaya, Kisii, Kakamega, Bungoma, Trans Nzoia, Uasin Gishu, Makueni, Machakos and Tana River. Farmers in dairy, export of vegetables, mango, avocado, indigenous chicken, coconut, aquaculture, pineapple, cassava and moringa sectors will be the main beneficiaries. The programme is aligned to Kenya's Vision 2030 as well as the Danish Strategy for Development Cooperation and humanitarian action 'The World 2030', she said.

Agra commits to help smallholder farmers adapt to climate change

The Alliance for a Green Revolution in Africa (Agra) has committed to mobilise support to help smallholder farmers adapt to climate change effects. The institution made the pledge as it joined the Agriculture Innovation Mission (AIM) for Climate. The United Arab Emirates (UAE)-US joint initiative was unveiled at the COP26 summit last year and it aims at accelerating investment in climate-smart agriculture and food systems. The AIM for Climate initiative seeks to raise \$8 billion (\$914.4 billion) from public and private sectors ahead of COP27. "If action won't be taken, climate impacts will lead to yield reductions of up to 30 per cent by 2050, while extreme weather events will result in higher losses of post-harvest quality and quantity," said Agra President Agnes Kalihata. Sammy Waweru

Parasites

The key to fighting nematodes

Nematodes are one of the most destructive crop parasites that live in the soil. They damage the plant's root system reducing its ability to absorb water and nutrients. Stanley Kimuge spoke to **Dr Njira Pili** on why the parasites remain a threat to food security and how farmers can curb them. Dr Pili is a nematologist and a lecturer at the School of Sciences, Moi University. He is also the principal investigator/coordinator at Nematology Education in Sub-Saharan Africa (Nemadussa)

Why should farmers pay attention to nematodes?

They are parasitic worms that attack plants causing losses. Normally, most farmers are not aware of the worm problem because they are not visible to the naked eye. Farmers are able to see insects like fall armyworms, and the symptoms of bacterial or fungal diseases but for nematodes, that is different. Therefore, most farmers tend to misdiagnose nematodes. They will associate the wilting of the plant to other pathogens.

Again, most of the symptoms caused by the nematodes are secondary. When they attack roots, plants are not able to absorb nutrients or water. This results in

the yellowing of the plant because of nutrient deficiency. So, you will find a farmer applying fertiliser hoping to change this.

There are thousands of species of nematodes around the world. However, in Kenya, these species are not well-documented. They are categorised in terms of impact on crops or symptoms. Some attack roots, others leaves, stems or flowers. Therefore, when it comes to management, what works in one species may not work in another.

What crops are susceptible to nematodes?

Nematodes attack nearly all crops, from flowers to potatoes, maize, vegetables and sugarcane. In Kenya, they are a very big problem. You find them mostly attacking vegetables such as tomatoes, spinach and



A potato crop infected with cyst nematode on a farm in Nyeri County. JOSEPH KANYI | NATION

Again, before planting any crop, do soil analysis so that if there is presence of nematodes, you can do crop rotation to break the cycle of the pests and diseases in soil.

Dr Njira Pili.



night shade (managu). If you want to see nematodes, then uproot the plant. Those affected will have swollen (galling) symptoms due to infection. Potato is one of the crops adversely affected by nematodes.

A recent study by the Food and Agriculture Organization (FAO)

and International Centre of Insect Physiology and Ecology (ICIPE) found out that 85 per cent of fields in potato growing areas in Kenya are infested with the potato cyst nematodes (PCN).

They lead to yield losses of up to 80 per cent or total failure of the crop. The challenge is that most potato farmers replant tubers from previous harvest leading to spread of the disease.

What can farmers do to mitigate nematodes?

Some farmers apply fertiliser or fungicides to control the problem but this ends up pushing up the cost of production. The best thing is to grow varieties that are resistant to nematodes.

Again, before planting any crop, do soil analysis so that if there is presence of nematodes, you can do crop rotation to break the cycle of the pests and diseases in soil.

There is also biological control where beneficial organisms are used. For instance, trichoderma (fungae)

POTATOES

1 Potato Cyst Nematode (*Globodera rostocientis* or *Globodera pallida*) is classified as a quarantine pest by the Food and Agriculture Organization (FAO), meaning that in countries where it is detected, tough restrictions are imposed.

2 This include ban on potato production and transport to other growing regions and even countries to stop spread. The pest can remain in the soil for up to 30 years. Infested potatoes usually show early maturity, produce tiny tubers and are usually stunted.

3 There is no known chemical or biological agent that can control the pest. Nyandarua leads with a prevalence rate of 91 per cent followed by Elgeyo Marakwet (87 per cent), Nakuru 88 per cent and Narok (88 per cent). Other counties with high infestation levels are Trans-Nzoia (100 per cent), West Pokot (100 per cent) and Taita Taveta (100 per cent).

can be used to control certain nematodes.

Nemadussa brings together experts from around the globe to fight nematodes, tell us what this is all about?

The initiative brings together researchers from various universities (two each) from Ethiopia, Bann, South Africa, Uganda, Kenya, Nigeria, France and Belgium. We have come together to raise awareness about nematodes and bring expertise so that we consolidate research and come up with practical solutions in managing the pest.

Currently in Kenya, there is no university that is offering a curriculum tailored towards training students on nematology, thus we don't have the capacity to address the issue. There are about 25 nematologists in the country and some are not actively practising. Through this project, we want to bridge the expertise shortage in this field. For instance, we are sponsoring five masters and two PhDs students on full scholarship. We intend to increase the number to 30 students by 2027.

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