



Fall Armyworm Invasion: Nature's tiny yet mighty destroyers. Photo Credit: aak-GROW

How climate change is driving a surge in pests and diseases

Among the ravaging pests include false codling moth, leaf miner and fruit fly.

By Zablon Oyugi

PESTS and diseases are ravaging food crops and other vegetation, having become bolder and more prevalent as a result of climate change.

Now, experts are warning of food insecurity and reduced income from the sector which contributes about 20 percent to Kenya's GDP should farmers ignore proper use of chemical pesticides and insecticides.

According to the Agrochemicals Association of Kenya (aak-GROW), some of the pests of concern are leaf miners, fruit flies, maize stalk borer, *Tuta absoluta* (tomato leaf miner) and anthracnose in beans and avocado among others.

"Kenya being in the tropical region has favourable conditions for the growth and the spread of most pest species as the conditions provide

warm and humid environment and providing necessary moisture for their growth," said Benson Ngigi, Stewardship Manager at aak-Grow.

Due to increased rainfall and rising temperatures, he said, pests are spreading to their non-traditional areas, posing a big threat to economically important crops such as coffee.

Coffee production, for instance, has been threatened by an outbreak of thrips, small insects that feed on many commercial crops.

While most of these pests are spread as a result of interactions by the outside world during activities such as trade and travels, the other key factor that has promoted their increasing in volumes in the recent past is weather.

"It is very difficult to eradicate pests once they have established themselves in a new territory since managing them is time-consuming and an expensive exercise," said Ngigi.

He also noted cases of pest resurgence in areas where insecticide application initially reduces an infestation, but soon afterwards it rebounds to higher levels than before treatment.

"Such scenarios occur as a result of various resistance mechanisms that different pests have or develop towards an insecticide, something that requires a proper follow-up over the time and introduction of new approaches and insecticides targeting the resistance bit of the pest," he said.

Integrated Pest Management (IPM)

The aak-Grow official advises that the best way to mitigate the problem of pests and diseases is Integrated Pest Management (IPM), which involves the use of various methods such as cultural, biological, mechanical and the recommended chemical pesticides to control them.

"Adopting a mixed approach in the management of these pests and diseases is the most effective option for pest, disease and nutrition challenges



Kenya's desert locust invasion—the worst in 70 years—mainly affected the northern region of the country. Photo Credit: aak-GROW

in crops,” said Ngingi, adding that the aim IPM approach is to grow crops sustainably while protecting the health of the consumers, workers and the environment.

Cultural Control. This involves growing practices such as cleaning of equipment, weed management, no-till or zero tillage, media sterilization, and nutrient and soil management which prevent establishment, survival, and reproduction of pests.

Mechanical or Physical Control. This encompasses exclusion or trapping of pests using physical barriers and mechanisms such as the use of roller traps, hanging traps, pheromone lures and sticky cards. There is also the use of greenhouses, tunnels, indoor growing houses, constructed growing areas and plant-free buffer zones.

Biological Control entails the use of natural pest predators, antagonists and beneficial organisms to manage pest populations.

Chemical Control involves the intelligent use of insecticidal soaps, insect growth regulators, botanicals and recommended pesticides. In this case, chemical pesticides play more of a supportive role, assisting in more effective, long-term management of pest populations.

Dealing with pest resurgence

In this, aak- Grow has come up with several management steps that include:

- o Supporting of the IPM technologies dissemination
- o Conducting surveys on pesticide resistance in high value crops
- o Advocating Mode of Action labelling through Pesticide Control Products (PCP) regulations
- o Supporting development and adoption/scaling up of solutions mitigating pesticide resistance
- o Formation of a local fungicide resistance action committee (FRAC)
- o Upholding safety standards

In stressing that it is impossible for farming, especially commercial one, to be sustainable in the country without the use of synthetic pesticides and insecticides, aak-Grow is alive to the need for safety standards to protect farmers, consumers, traders and the environment from the harmful effects that may arise from irresponsible use.

“At every stage of handling these chemicals right from research, production or repackaging to the end user we have developed product stewardship whose aim is to maximise the benefits and minimise the risks arising from PCPs at all stages of their existence,” said Ngingi.

Product stewardship entails responsible use of pesticides, involvement of spray service providers, communication and advocacy, pesticide resistance management, poison information service, empty pesticide container management, and obsolete agro inputs stock management.

In 2020 alone, over 26 tonnes of obsolete pesticides were disposed of thanks to an effective system for prevention of buildup of the products.

“Today members of the public can easily report cases of pesticide poisoning through two toll-free lines 0800720021/0800730030 placed on all pesticide labels in Kenya,” said Ngingi.

Counterfeit agrochemical products

The aak-Grow acknowledges that illegal or counterfeit pesticides and insecticides not licensed by the Pest Control Products Board (PCPB) are still a problem in the sector.

“These products, of which some are smuggled, have no or wrong labels or imitating products of known companies still penetrate to various parts of the country and they are part of the reasons there are raising cases of ill health, low production and loss of revenue,” said Ngingi.

Between 2017 and 2019 Ksh11.3 billion worth of counterfeit and illegal products have been reported in the country with Ksh4.82 million worth of the products intercepted.

In preventing the infiltration of the counterfeits in the country, the association has made several interventions such as cleaning up the supply chain through accreditation and training, enhancing border control, inspection and surveillance by competent custom officers and farmer sensitization.

“For a complete eradication of the illegal pesticides in Kenya, there is need for a concerted effort from all stakeholders,” said the stewardship officer adding that cases can be reported to NCPB, nearby police station or government extension officers.

Maximum residue levels (MRL)

This is another big test on the use of pesticides and insecticides in some crops as far as food safety for trade is concerned.

“Today sampling of export products imposed by the EU market for testing products’ MRLs is at 20 per cent having come from 5 per cent and 10 per cent it was sometimes back. This means that should this percentage increase, our products are at risk being banned in the international market,” said Ngingi.

The rise in sampling percentage whose high cost is soldered by farmers has been blamed on the use of dimethoate, an insecticide which was banned 20 years ago in the country but whose traces are still found in Kenyan products.

“As a result, mechanisms are being put in place by the Kenya Plant Health Inspectorate Service (KEPHIS) to help trace affected products to the production area and once this is done even our local food markets will be safe,” said Ngingi.

Already a sample MRL test on some products such as kales, tomatoes and onions has given 98.8, 95 and 100 per cent safety levels respectively an indication that most farmers are improving.

aak branding focus on high-quality food production

Early this year Agrochemicals Association of Kenya (aak) unveiled a new brand identity in a transformation strategy

towards delivering “Better Farming, Better Food, Better Health” to its stakeholders.

This, according to Ngingi, is a focus on ensuring human well-being through food, nutrition and health, and the sustainable use of the ecosystems in the wake of changing global food and health needs.

“Food and health needs have changed the world over and to keep with the pace, we are to reinforce our positioning in line with these changes and market expectations,” he said.

At the heart of the rebranding is a new logo and identity that communicates and reaffirms aak Grow’s/CropLife Kenya’s positioning and philosophy of sustainable high-quality food production and associated health benefits.

In order to further accomplish their shared goals, the new brand outlook will also strengthen and take advantage of the agency’s worldwide ties with CropLife International, CropLife Africa Middle East, and other development partners.



*An Ethiopian farmer shows the fall armyworm and its damage on his maize plants.
Photo Credit: Stephanie Parker.*