Inside the state-of-the-art laboratory at the Pest Control Products Board (PCPB) headquarters in Loresho, Nairobi. Photo Credit: Zablon Oyugi

Public lab seeks to fill pesticide residue monitoring gap in Kenya

By Zablon Oyugi

AS the global food trade grows, the food industry and regulators are increasingly finding themselves under pressure to enhance the monitoring of pesticide residues in produce destined for both local and global markets.

To protect consumers and boost trade, the Kenyan government has established a modern laboratory at the Pest Control Products Board (PCPB) headquarters in Loresho, Nairobi to help growers and traders meet the food safety requirements in the markets, including undertaking pesticide residue analysis.

Pesticide residue analysis helps in identifying and controlling residues, ensuring farm produce complies with regulatory maximum residue levels (MRLs).

Currently in its equipping phase, the laboratory is expected to cost Kshs320 million when fully furnished. It will generate critical data to inform policy decisions and expedite enforcement actions by PCPB, focusing on safeguarding human, animal, and environmental health.

Grace Muchemi, the Head of Laboratory at PCPB, said the facility will also complement the existing monitoring and surveillance of pesticide residue levels, particularly in produce consumed locally, which constitutes about 95 percent of Kenya's fresh produce.

"Regular sampling and analysis of pesticide residues in food, whether for local consumption or export, are crucial for us, and this lab will be instrumental in that effort," said Muchemi.

The establishment of the lab comes amidst concerns over high MRLs in some Kenyan food products.

In 2018, the Kenya Plant Health Inspectorate Service (KEPHIS) tested 1,139 samples of fresh produce for the USAID FOODSCAP Project. Pesticides were detected in 46 percent of the samples, with 11 percent exceeding European Union MRLs. The highest residues were found in kales, peas, and capsicum, prompting increased surveillance by regulators.

The new lab will employ internationally recognised methods from the Collaborative International Pesticides Analytical Council (CIPAC) and the Association of Official Analytical Chemists (AOAC), supported by highly trained technologists and analysts. This will aid in generating data to support the development of MRLs both regionally and globally.

"The laboratory's modern design compares favorably with other laboratories globally. It includes sections for residue analysis, formulation, bio-pesticide research, a library, offices, and conference facilities," Muchemi said. Additionally, the lab aims to support the Ministry of Agriculture's extension services by educating farmers on Good Agricultural Practices (GAP) to reduce pesticide residues in food, water, and soil.

MRLs testing labs in Kenya

At the moment SGS Kenya Limited is the only internal pesticide residue tester with its Mombasa-domiciled lab handling hundreds of samples from farmers daily. These are mainly fresh produce (French beans, snow peas, sugar snaps, avocados, mangoes, and herbs) usually destined for the European market.

There have been cases of Kenya's agriculture exports being intercepted and destroyed over MRLs concerns leading to big losses by farmers and traders.

Before this, sample testing process was tedious and took a long time, because some tests were taken abroad to be scrutinised and examined. This has been cited as one of the major bottlenecks by many fresh produce exporters as frustrating their businesses.

Traditionally, Kenya has relied on data from temperate countries to register most pest control products (PCPs), which often lack relevance to the tropical context of Kenya. The process registration process also takes long, affecting manufacturers and farmers.

Pesticides manufacturers attending a horticultural fair in Naivasha last year raised concerns over the longer period it takes to register a product in the country.

"The time is fairly long considering a number of issues and trials the chemicals have to be taken through to ensure they are not only effective for their intended purpose but also safe for humans and the environment," said Ms Sarah Wambugu, a senior pesticide registration officer at the PCPB.

The laboratory's modern design compares favourably with other laboratories globally. It includes sections for residue analysis, formulation, biopesticide research, a library, offices, and conference facilities. Photo Credit: Zablon Oyugi

A section of media and stakeholders are briefed about the new lab. Photo Credit: Zablon Oyugi

According to the Pest Control Products (registration) Regulations of 2022, it can take up to five years for a pesticide to gain clearance for use in Kenya, a challenge that both farmers and manufacturers highlighted.

The new lab will address this gap by enabling PCPB to conduct local pesticide residue trials and research in collaboration with other stakeholders, providing data crucial for registration and regulatory decisions.

It will also enhance post-registration surveillance of pesticides in the Kenyan market, ensuring effective control and management of pests and diseases in crops, as well as vector control in public health.

"As a leader in pesticide regulation in the region, we aim to actively participate in the Codex Committee on Pesticide Residues with robust data generated locally in our lab," stated Muchemi.

Counterfeit PCPs are a significant issue world. It is estimated to be as high as 25 percent of the global pesticide market.

According to some latest studies, the profitability of the illegal trade in counterfeit pesticides makes it one of the top 10 most lucrative organised crime businesses posing a threat to farmers' lives.

These non-standard, adulterated and falsely marked products have become a great concern in Kenya.

Early this year PCPB raised concerns over the influx and usage of unregistered and illegal pesticides finding their way into the country through various entry points and into the mainstream markets.

Muchemi sees the new lab playing a key role in detecting and speeding up the prosecution of such cases.

Over the past three years, the lab has analysed 97 samples suspected to be counterfeit, providing certificates of analysis as evidence in various law courts.

"During this period, the lab has presented certificates of analysis as evidence in law courts across the country, including Makindu, Baricho, Narok, Karatina, and Kisumu," said Muchemi.

Additionally, in November 2023, PCPB received crucial support from the Agrochemicals Association of Kenya) AAK-GROW/CropLife Kenya) aiding in the training of 19 PCPB staff at the National Criminal Investigations Academy, empowering them to conduct thorough investigations on counterfeit products.

In Kenya, suspected counterfeits are typically reported to the Compliance and Enforcement Department of the Police, Anti-Counterfeit Authority, and through post-registration surveillance.

Despite these advancements, the lab faces challenges, primarily underfunding, which hampers its equipping process. There is also a need for more personnel and training to keep pace with technological advancements, such as the analysis of bio-pesticides.

"We are facing inadequate personnel and need to train laboratory staff in line with technological advancements," noted Muchemi.