



The Importance of Declaring Plants and Plant Materials at Border Points

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Kenya Plant Health Inspectorate Service (KEPHIS) is the government parastatal whose responsibility is to play a regulatory role in the agriculture sector by assuring the quality of agriculture inputs and produce to promote sustainable agriculture and economic growth. This is achieved through three main mandates, namely seed certification and plant variety protection, phytosanitary services and analysis of agro-inputs and produce through our globally accredited laboratories. These activities are guided by national laws, provisions and guidelines of international treaties and conventions to which Kenya is a signatory.

The Phytosanitary Division of KEPHIS regulates on plant health matters in Kenya and implements measures that ensure healthy plants and safe trade. Plant inspectors enforce inspection of plants, plant products and

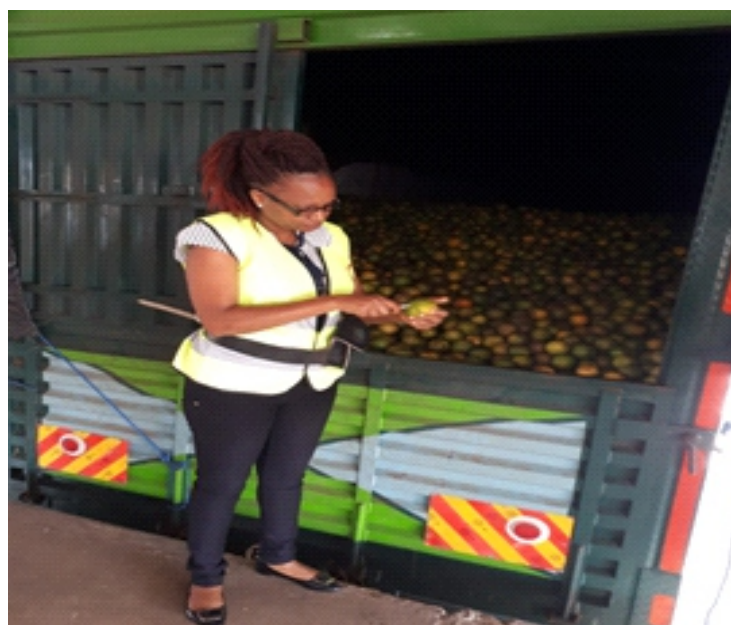
regulated articles (soil, packaging material, propagation media and bio-control agents) at the exit and entry points, through issuance of phytosanitary certificates and Plant Import Permits (PIP). This is to ensure that all plants and plant material meet standards that is, whole, intact, undamaged, clean, free from foreign matter, pesticide residues, pests and diseases.

The inspectors also ensure that Kenyan plants and plant produce remains competitive in the international market through inspections to ensure that producers and exporters adhere to: strict hygiene practices and principles on food safety; proper documentation of all actions from land preparation to client; documentation of all pesticides used, their rates and application levels, safety provisions in application to analytical checks of the produce and proper field and pack house

checks to ensure they are free from pests and diseases before presentation of the produce for inspection. During importation, all plants and plant material should be declared to ensure verification of information in the PIP which stipulates all the conditions that a consignment should meet before it is imported into Kenya. This also facilitates regular monitoring and testing against pests and diseases hence, preventing the introduction of harmful foreign pests, diseases and weeds to the country. The organization also

regulates on means of conveyance such as sea containers, motor vehicles or objects capable of harboring and spreading plant pests and diseases.

Movement of plant and plant products between countries is regulated due to the risk of introduction of pests and diseases. All passengers entering or leaving the country are required to declare them to a KEPHIS inspector on arrival or departure at all entry or exit points. **KN**



Consignments of imported onions and citrus fruits under inspection by KEPHIS inspectors at Namanga Border Post

Farmers Urged to Gain Adequate Information for Effective Agriculture and Bumper Harvests

Sultan Hamud, Makueni County - Lack of information on effective agricultural production is hindering farmers from farming well thus affecting food production in the country. Addressing over 1,000 farmers in Sultan Hamud during a farmers field day, the Principal Secretary for Agricultural Research Prof. Hamadi Boga reiterated that farmers in Kenya had to practice agriculture differently, educate themselves on good agricultural practices and get adequate information that would enable them practice agriculture and agribusiness thus uplift their standards of living. "Farming has money but you have to know the basics of good agricultural production. This includes planting the right certified seed for your agro-ecological zone, testing the soil on your farm, testing manure, irrigation water, fertilizers and other agricultural inputs," he said. He urged farmers to diversify. "Do not over rely on maize only, there are other crops" he stated. He added: "Harvest water; do not let water go to waste and if you can practice conservation agriculture the better." He urged farmers to familiarize themselves with basic agricultural economics to know the break-even point at which they start making profits. Mr. Nzioka Waita, the Chief of Staff and Head of the Presidential Delivery Unit at the Executive Office of the President urged the farmers in the area to build small dams to conserve water, noting that this year's the long rains had delayed and may not be as adequate as expected. "Let us hold hands to conserve water so that no one goes to sleep hungry," he said. Mr Nzioka reiterated that one can make money from agriculture, but correct agricultural practices needed to be practiced. He noted that the average age of a Kenyan farmer is 60 years old thus the onus was on the youth to practice good agriculture to feed the nation. "Let the youth form groups and hold each other accountable to produce food," he said

.The field day showcased cabbages, spinach, potatoes, maize, onions, cowpeas, sorghum, tomatoes, pastures, pumpkins and capsicums (for salad and for cooking) to the farmers. Sultan Hamud is in a semi-arid area hence KEPHIS and seed stakeholders showed farmers varieties that can grow in that agro-ecological zone. Also in attendance were the Makueni County Commissioner Mr. Maalim Mohammed, KEPHIS Board Chair Mr. Wycliffe Murwayi and KEPHIS MD Dr. Esther Kimani. The event was sponsored by the United States Agency for International Development through its Feed the Future Project which targets to improve food security through strengthening KEPHIS regulatory capacity to certify crops and facilitate safe foods. **KN**



Learning new technologies in potato production during the Sultan Hamud Field Day



PS Agricultural Research Prof. Hamadi Boga being shown different crops that can grow in the Sultan Hamud area during a farmers field day organized by KEPHIS and supported by the United States Agency for International Development (USAID) Feed the Future Project



Makueni CEC for Agriculture Lawrence Nzonga holding a mature cabbage during the Sultan Hamud Farmers Field Day. Looking on are the Head of the President's Delivery Unit Nzioka Waita(4th right), KEPHIS Board Chairman Mr. Wycliffe Murwayi(3rd left) and KEPHIS MD Dr. Esther Kimani(2nd left)

KEPHIS WORKING WITH THE NATIONAL YOUTH SERVICE IN SEED POTATO PRODUCTION FOR FOOD SECURITY AND NUTRITION



KEPHIS MD Dr Esther Kimani explains KEPHIS role in seed potato production to Interior and Coordination of National Government Cabinet Secretary Dr Fred Matiangi

Tumaini, Nyandarua County - KEPHIS joined the National Youth Service (NYS) and the Kenya Prisons Service in officially inaugurating seed potato production at Tumaini in Nyandarua County. Potato is one of the most consumed agricultural produce in Kenya and is second to maize in terms of production. Potato farming is also one of the focus crops under the Big 4 Agenda of the National government for the country to be food secure. Potato is also a short cycle crop with high productivity per unit of land and is a major source of income and food security. NYS has invested in aeroponics technology for potato production at their Tumaini Field Station. 6,276 plantlets in 3 greenhouses have been planted using this technology. 30-45 days after planting, the plantlets will begin to produce mini tubers that will be harvested over a 6-month period. The harvested mini tubers will be planted in the field for a season (3-4 months) with supervisory visits by KEPHIS to produce normal sized tubers classified as breeders seed. Breeders seed will be planted in the field and certified by KEPHIS as pre-basic seed. Pre-basic seed will be planted in the field and certified by KEPHIS as basic seed. Basic seed can be sold to farmer seed multipliers in the area who will then multiply it for an additional season or two under certification from KEPHIS to produce certified seed. The certified seed will then be sold to farmers who will produce ware potatoes for consumption. CS Dr Fred Matiangi who officially launched the potato seed production urged all government agencies to work together to ensure that the country is food secure. Other CSs who attended the event were Prof. Margaret Kobia from the Public Service, Youth Affairs and Gender docket and Sicily Kariuki from the Ministry of Health. The event was held in Nyandarua County which produces the highest amount of potatoes in Kenya. **KN**

MALAWI MINISTRY OF AGRICULTURE STUDY TOUR TO KEPHIS

Officials from the Malawi agriculture sector were in KEPHIS for a two day study tour to benchmark their operations with KEPHIS services. Dr. Wilkson Makumba, Director of Agricultural Research Services, Saphiel Chitedze, Country Manager at Alliance for a Green Revolution in Africa Malawi, Dr. Grace Kaudzu, Head, Seed Service Unit, Mr. John Lungu, Chairperson, Seed Trade Association of Malawi, Mr. Hermes Mauwa, Deputy Director Department of Agriculture Planning Services, Dr. Kennedy Lweya, Director of Policy and Research – Farmers Union of Malawi, Noel Sangole, Assistant Program Officer AGRA Malawi and Mr. Martin Kausi, Deputy Director Department of Crop Development- Ministry of Agriculture attended the event.

The training was aimed at learning the KEPHIS mandate, Seed Acts and Regulations, how KEPHIS manages global problems such as fake seed, labeling procedures and its advantages and how to run a corrupt free seed industry in order to improve their seed industry.

Dr. Esther Kimani, MD KEPHIS, officially opened the forum by highlighting the KEPHIS mandate. She advised the officials to support breeders to come up with new varieties of seeds and multiply them so as to curb the gap of insufficient certified seeds. "Ensure people have access to high quality seeds which are free from pests and diseases to reduce economic losses." she stated. It was also important, she added, to offer advisory services for disease management. Gentrax Juma, KEPHIS Seed inspector took the officials through the overview of the Seeds and Plant Varieties Act Cap 326. She highlighted the basis of the regulatory framework which includes regional laws, international conventions/treaties, scientific guidelines and norms and standard practice. She added that seed regulations are made for control of the production, processing, testing, certification and marketing of seeds. The regulations are made to ensure reliable and adequate information is afforded to the nature, condition and quality of seed intended for sale; for preventing the sale of harmful seeds or which have not been produced in specified conditions, tested for purity or germination, or of a plant variety that has not undergone national performance trials. She added that there are two types of labels which KEPHIS uses which are OECD labels and KEPHIS sticker labels. Packets/tins weighing two kilograms and below are labeled using the sticker labels.



Malawi Agriculture Officials at the Analytical Chemistry Laboratory being shown the analysis process during their study tour at KEPHIS Headquarters recently

Asenath Koech, a KEPHIS inspector, enlightened the officials on phytosanitary services in relation to seed production, export and importation. She said that the Plant Import Permit (PIP) is aimed at ensuring compliance to import regulations as provided for in the Plant Protection Act CAP 324 and various international treaties that Kenya is party to. She added that phytosanitary activities include import certification, Pest Risk Analysis, importation under quarantine status, export certification, pest surveillance and nursery certification. Import certification regulates the importation of plants, plant products and regulated articles such as soil packaging material, propagation media and bio-control agents. Export certification complies with the import standards of the country exported to and the inspection is done from the farm level up to the point of exit. She further expounded that nursery certification aims at regulating the spread of diseases from nurseries to the fields. Pest Risk Analyses(PRA) helps in determining the level of risk associated with the import and export of plants or products to provide mitigation measures. Pest surveillance determines the absence or presence and distribution of pests and diseases. Types of documentation needed for international trade are Plant Import Permits and phytosanitary certificates.

Timothy Maina from mPedigree took the officials through sticker labels. He started off by highlighting that fake agro inputs and especially agrochemicals contain dangerous compounds that contaminate the soil. The end result affects farmers productivity which eventually affects the economy of a country.

Joseph Kigamwa, the KEPHIS Projects Coordinator, took the officials through KEPHIS resource mobilization. He informed them that KEPHIS mobilizes resources from various sources such as the United States Agency for International Development(USAID), the European Union, The Netherlands, FAO/IPPC, CABI, USDA and that capacity building is focused in three areas ie human skills that is staff and stakeholders, building of laboratories complexes and acquiring equipment and vehicles. In addition, the Centre of Phytosanitary Excellence (COPE) has trained 2,418 participants from across Africa.

Finally, Mr. Simeon Kibet, KEPHIS GM for Quality Assurance informed the officials that Africa needs to formulate a system that enhances trade. "The biggest market for Africa is Africa," he emphasized. **KN**



rooting zone just under the leafy canopy. After collecting the topsoil, on the same hole proceed to sample from a depth of 20-50 cm (8-20 inches) and put the sample in a separate bucket. Repeat the procedure 10-12 times at different points of your field block, and then ensure that all clumps are broken, remove any foreign materials such as roots then proceed to mix the soil thoroughly for homogeneity before filling your sample container with at least 500 grams of your composited soil sample (subsoil)

DO NOT SAMPLE

- When soil is too wet (right after rains or irrigation)
- When soil is too dry
- Near ant or termite hills
- Where lime, manure or fertilizer has been piled or spilled
- Where trash has been burned or any 'unusual' area
- From salty spots

Turn Around Time

Soil testing and reporting of results at KEPHIS Analytical Chemistry Laboratory takes ten (10) working days. This ensures that all the parameters are analysed, data is interpreted and recommendations on the best soil amendments is done with key focus to specific crops to be grown.

COST OF ANALYSIS

- Fertility evaluation and recommendations: **KES 2500** per sample.
- Physical evaluation -: **pH-KES 600, Moisture- KES 500, Texture-KES 500, Electrical Conductivity-KES 600**
- Microbial analyses - **KES 3,000** per sample. **Note:** additional charges may apply if more pathological species are detected in a soil sample after screening.

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SOIL TESTING FOR NUTRITION AND FOOD SECURITY

SOIL TESTING FOR NUTRITION AND FOOD SECURITY

Soil testing refers to the analysis of a soil sample to determine nutrient content, soil composition and other characteristics such as the acidity or alkalinity level. A soil test is essential to determine soil fertility levels, or the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non-essential trace minerals. This is key in helping to make good nutrient management decisions.

THE ROLE KEPHIS PLAYS IN SOIL TESTING

The KEPHIS Analytical Chemistry and Food Safety Laboratory (ACL &



Soil analysis in the Analytical Chemistry and Food Safety Laboratory at KEPHIS Headquarters, Nairobi

FS) determines the nutrient and contamination levels in soils, composition and other characteristics such as the acidity or alkalinity and texture. Soils contain nutrients, water, air and living organisms that help create healthy and sustainable farms.

The Importance of Soil Testing

- ◆ Ensures proper soil management hence increased yields (food security) supporting the pillar of nutrition and food security under the Big 4 Agenda of the Kenya government.
- ◆ Test results helps the farmer to know whether the piece of land available can be used for commercial farming of a specific crop with a view of income generation.
- ◆ Ensures food safety as it shows the potential toxicities that can affect the environment and crops grown for human consumption.
- ◆ Budgeting and planning of agro-economic practices meant to project yield. The farmer can be guided on how to apply the right amount of fertilizer, manure or other amendments while meeting the nutritional requirements of the crop and still making use of the

available nutrients in the soil. Above all, it can help reduce production costs due to efficient use of agro inputs.

- ◆ Ensuring environmental health through use of integrated soil fertility management or use of environmentally safe agro inputs.
- ◆ Pest and disease control through early detection as a result of microbial analyses.
- ◆ Prevention of over use of fertilizers that might result to surface and ground water pollution.

SOIL SAMPLING PROCEDURE

- Take to the field a soil sampling information sheet, clean soil containers such as a clean plastic bucket, a clean sampling tool such as a spade, trowel, soil auger or tube.
- Use a notebook to make a sketch of field divisions or blocks to be sampled, according to the differences in soils i.e. soil color, soil texture, crop performance, slope, drainage, and designate each field with a unique code and estimate the area of each block.
- For any one soil sample, the area sampled must not exceed two hectares even when all the soil or field parameters are deemed similar.
- For each field block on the sketch show the sampling pattern and sampling points.
- With the aid of a clean sampling tool, obtain a soil core or cut out a sample by digging a vertical hole from the soil surface (zero) to a depth of 20 centimeters i.e. from (0-8) inches and transfer into a plastic bucket. Repeat the procedure 10 to 12 times at different points of your field block, and then ensure that all clumps are broken, remove any foreign materials, litter and roots then proceed to mix the soil thoroughly for homogeneity before filling your sample container with at least 500grams of this composited soil sample (Topsoil).
- When sampling for deep-rooted crops (e.g tree crops) take samples from the most active



A KEPHIS soil analyst carrying out soil tests for different soil samples

MESSAGE FROM DR. ESTHER KIMANI, MANAGING DIRECTOR, KEPHIS, TO KENYAN FARMERS DURING THE SHORT RAINS PLANTING SEASON

The short rains season that will run between October and December 2018 requires that farmers prepare their farming inputs well. KEPHIS is the government institution in Kenya, whose responsibility is to assure the quality of agricultural inputs and produce, certifying seeds of all crop varieties to ensure that only seed of highest quality is sold to farmers. The result is increased and enhanced harvests leading to food security and sufficiency in the country.

FREQUENTLY ASKED QUESTIONS (FAQs) ABOUT CERTIFIED SEED

1. What is certified seed and its benefits to Kenyan farmers?

Certified seed is seed that has met the minimum national set quality standards after undergoing field inspection(s), laboratory tests and post control tests by KEPHIS as per The Seeds and Plant Varieties Act (Cap 326) of the laws of Kenya. The use of certified seed guarantees the following:

- Certified seed does not cost, it pays; it results in high yields, quality crop produce and better returns when all other factors of crop production and agricultural practices are optimal (i.e. good soil fertility, conducive climatic conditions, adequate soil and irrigation and proper water/fertilizer usage). Farmers are advised to confirm the quality of agricultural inputs (fertilizer, manures, pesticides, water and soil) used through laboratory tests conducted by reputable laboratories such as the KEPHIS Analytical Testing Laboratory (ACL) which has offices at KEPHIS headquarters, Nairobi and Kitale regional office.
- In certified seed, a farmer is getting guaranteed quality assurance; offers better deals in crop insurance/financing of the crop; traceability of certified seed is easy; in certified seed a farmer is getting access to premium market(s);
- Less insect and disease problems; quality seed responds better to applied fertilizers; uniformity in plant population and maturity; good seed prolongs life of a variety; yield prediction is easy; handling in post-harvest operation is easy; high produce value and their marketability

2. How can a farmer identify certified seeds?

Certified seeds are packed in containers or packets which are clearly labeled and contain the following information:

- Seed lot numbers to allow for easy traceability of seed lot in the event of crop failure
- Weight of the seeds
- Name of the crop species and variety
- Packaging date
- Seed merchant/company
- Labeling and sealing of the containers or packets is done in such a way that seeds cannot be removed without damaging the seal or label.

New feature: A sticker label in all seed packaging of 5kg and below. The farmer will scratch and send the serial number to 1393 through an SMS, then receive feedback on the validity of the seedlot.

3. Farmers can avoid fake seeds by:

- Purchasing seed(s) from seed stockists who are licensed by KEPHIS and prominently display their seed seller's license. Purchase seeds early enough and avoid last minute rush.
- Buying seeds packed in official company packets containing Variety Name and Lot Number; **DO NOT PURCHASE SEEDS FROM OPEN CONTAINERS.**
- After planting, keep the packet and receipt as these may be required as evidence in case you suspect fake seed.
- Not exposing seed(s) to extreme weather conditions, e.g. heat, moisture, direct contact with fertilizer otherwise the quality of the seed will be compromised.

NOTE: Report all cases of suspect seed(s) at the nearest police station, nearest KEPHIS offices or the Ministry of Agriculture, Livestock, Fisheries and Irrigation

4. Plant recommended seed varieties for your area

Farmers are advised to purchase and plant recommended seed varieties for their particular areas.

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KEPHIS Wins at the Eldoret Show 2019



CS Agriculture, Livestock, Fisheries and Irrigation Hon. Mwangi Kiunjuri(3rd left) presenting the trophy for 1st position in the Best Innovation and Invention Stand to KEPHIS MD Dr Esther Kimani at the recently concluded 2019 Eldoret National Show. Looking on is Uasin Gishu Governor H.E. Jackson Mandago(2nd left)

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