CEREALS

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October - December 2024

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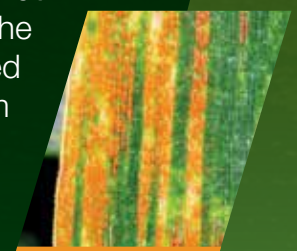

Yellow stripe rust

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- Leafshield formulation system helps Xpro fungicides perform well with a range of standard practice water volumes, nozzle types and forward speeds

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Skyway® Xpro provides excellent broad-spectrum activity, It is highly effective against Leaf Rust, Stem Rust, Yellow stripe rust and other diseases in wheat.

For more information please contact a Bayer Representative
Annah Bahati - 0715407305

leafshield formulation system

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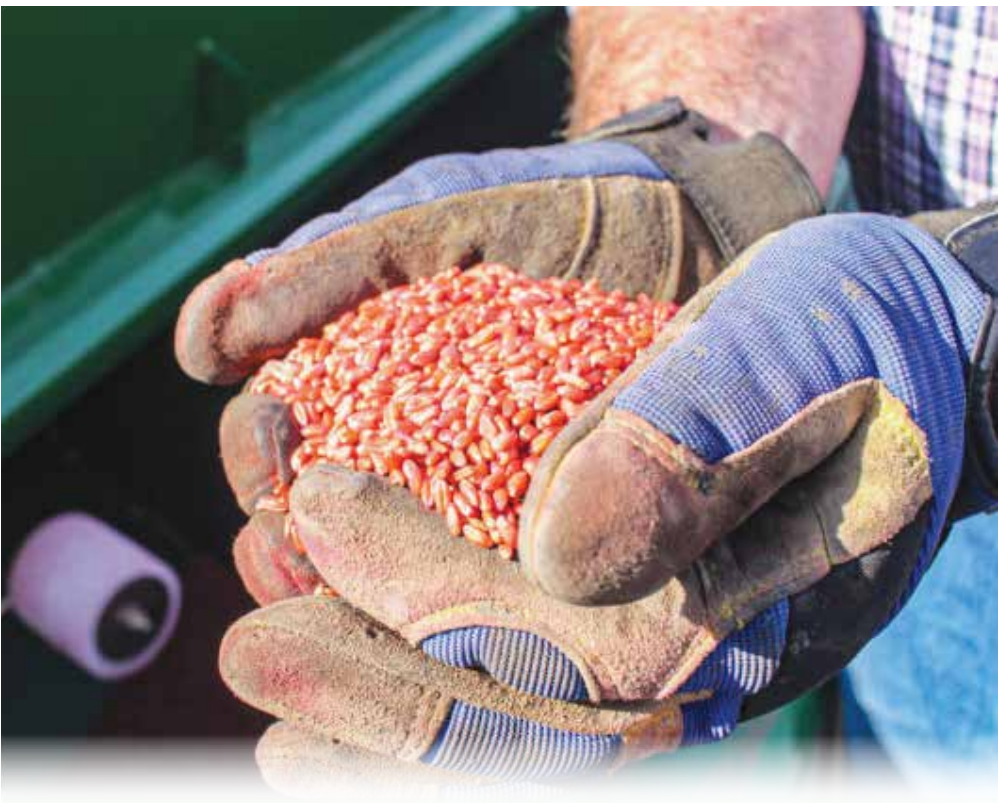

Seed Treatment Enhances Crop Yield

Weak planting material is highly vulnerable to pests and weather extremities; this is why seed treatment increases growers' chances of getting high yields. The advantage explains the popularity of seed treatment products among farmers on the one hand and a significant demand for pre-processed planting material on the other. Because the process requires extra time, special equipment, and extreme caution with seed treatment chemicals, it makes sense for farmers to buy and for agricultural input suppliers to provide already treated seeds

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Editorial

My Christmas

As the year draws to a close, all roads lead home for the holidays. Not for farmers. Yes, holidays will be most likely be spent at home and on the farm, but so will most other days of the year as they care for their crops, steward the land, and raise their families alongside it all.

May all your days be happy and bright. Not all are bright. Some days are filled with trying to get fieldwork done while the sun sets, fixing a frozen pipe in an irrigation system, or dealing with the stress of trying to manage it all. But the rewards are so great.

Since none of the Christmas card clichés felt quite right, we asked farm families to share some of their own messages and moments that make life on the farm so rewarding. Moments of gratitude, moments of humility, moments of humour, and moments of struggle, these are **REAL** messages from real families with real stories who are making a difference this December and all year long. Thanks for all you do!

Farmer One: *I will set up joint market stalls with fellow farmers to create a vibrant agricultural hub on market days.*

Farmer Two: *I will collaborate with local chefs to showcase the freshness of my produce through special menus or events.*

Farmer Three: *I will invite locals to tour my farm while creating a festive atmosphere with activities such as live music, farm-to-table picnics, crop picking, and so on.*

Farmer Four: *I will hold a seed exhibition and invite seasoned farmers to share stories of their successful experiments, encouraging newcomers to embrace experimentation and diversity in their crops. The spirit of knowledge-sharing would be inspired, in order to foster a sense of unity and collective growth among the farming community.*

Merry Christmas and Happy 2025.

Masila Kanyingi

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Dr. Vimal Shah: Charting the Path to Sustainable Agriculture

Delegates Following Discussions at the Summit

Dr. Vimal Shah

By Victor Okeyo

At the 2024 National Agriculture Summit (ASNET), Dr. Vimal Shah, Chairman of BIDCO Africa, laid out a blueprint for the future of sustainable agriculture in Kenya. Speaking to an audience that included farmers, policymakers, and international stakeholders, Dr. Shah emphasized the critical need for a unified, coherent approach to agriculture if Kenya is to unlock its full potential in this vital sector.

He advocated for the use of technology and precision farming to increase yields, citing examples from the horticulture and flower industries, where scientific farming methods ensure high-quality outputs. Shah also urged the adoption of biofertilizers and bio-pesticides, which are not only more affordable but also environmentally sustainable, thus positioning Kenya to compete in global agricultural markets.

The Significance of Agriculture in Kenya

Agriculture plays a fundamental role in Kenya's economy, contributing around 34% of GDP and providing livelihoods for over 40% of the population, with 70% of rural residents depending on it. This reliance on agriculture underscores the sector's importance not only as an economic engine but also as a pillar of social stability and environmental sustainability.

Five Pillars of Sustainable Agriculture

Dr. Shah highlighted five essential pillars for sustainable agriculture. These pillars, which address the most pressing challenges faced by farmers and stakeholders, offer a roadmap to secure a prosperous agricultural future for Kenya.

1. Policy Coherence

Dr. Shah highlighted the fragmented and sometimes contradictory policy environment that hampers agricultural competitiveness. With various ministries and legislative bodies issuing different regulations that often overlap or contradict one another, farmers are left confused and burdened by excessive licensing requirements.

Shah called for a streamlined and unified policy approach, warning against resurrecting the colonial "license raj" system. He advocated for digitalized data collection processes at zero cost to farmers, illustrating how modern technology can simplify regulations while promoting compliance.

2. Public-Private Dialogue

The second pillar focused on the importance of public-private dialogue. Shah acknowledged that forums like the National Agriculture Forum and Council

of Governors Forum once provided spaces for meaningful dialogue between different agricultural stakeholders. However, these forums have become dormant since the devolution of agriculture responsibilities to county governments.

He emphasized the need to reinvigorate these platforms to foster collaboration between national and county governments and private sector actors. According to Shah, this dialogue should be led by senior officials, ensuring that the most pressing agricultural issues are addressed at the highest levels of government. Drawing on the wisdom of Henry Ford, Shah urged all stakeholders to recognize that "working together is a success."

3. Competitiveness via Science and Productivity

The third pillar centered on enhancing competitiveness through science and productivity. As Kenya opens itself up to tariff-free trade within regional blocs like the East African Community (EAC), COMESA, and eventually the African Continental Free Trade Area (AfCFTA), Shah warned that without improved productivity, Kenya risks becoming a net consumer rather than a producer.

He advocated for the use of technology and precision farming to increase yields, citing examples from the horticulture and flower industries, where scientific farming methods ensure high-quality outputs. Shah also urged the adoption of biofertilizers and bio-pesticides, which are not only more affordable but also environmentally sustainable, thus positioning Kenya to compete in global agricultural markets.

Kenyatta University Exhibition Stand at the Summit

4. Transition from Rain-Fed Agriculture to Irrigation

The fourth pillar involved transitioning from the traditional reliance on rain-fed agriculture to irrigation. With erratic rainfall patterns becoming the norm due to climate change, Shah underscored the need for better water management and irrigation systems.

He pointed to the success stories in counties like Makueni, where rainwater harvesting and small irrigation projects have helped farmers increase their yields. Shah also proposed a model inspired by India, where the government covers 90% of the costs for drip irrigation systems, paid only after the systems are certified by farmers. This, he argued, would not only make irrigation accessible to Kenyan farmers but also ensure the efficient use of water resources.

5. A Rethink and Reset for Rapid Growth

The final pillar focused on the need for a complete rethink and reset of Kenya's agricultural sector to foster rapid growth. Shah advocated for zero-based budgeting, a thorough evaluation of current policies, and the removal of all impediments to growth, including excessive levies and taxes.

He suggested a shift away from small-scale farming of staple crops like maize and wheat toward higher-value-added products such as vegetables, superfoods, and dehydrated products. This transition, he argued, would allow Kenya to compete with global agricultural giants in staple production while ensuring that smallholder farmers benefit from more profitable ventures. With the right policies and strategies in place, Shah believes Kenya can become a global leader in sustainable agriculture, feeding not only its own people but also driving economic growth and development across the continent.


Delegates Following Discussions at the Summit

Quoting Winston Churchill, Shah reminded the audience that "to improve is to change, and to be perfect is to change often." It is this spirit of continuous improvement that will drive Kenya's agricultural sector forward, ensuring its competitiveness and sustainability in the long run.

Promoting Climate-Smart Agriculture for Sustainale Economic Growth

The Nairobi International Trade Fair (NITF) 2024, held at Jamhuri Park Showground, was a remarkable event, uniting over 500 exhibitors across sectors such as agriculture, manufacturing, housing, and education. This year's theme, "Promoting Climate-Smart Agriculture and Trade Initiatives for Sustainable Economic Growth," resonated throughout the week-long event, highlighting how innovation and sustainability are shaping Kenya's future.

Climate-Smart Agriculture Takes Center Stage

The emphasis on climate-smart agricultural practices stood out this year, with exhibitors showcasing technologies designed to increase productivity while reducing environmental impact. Joseph Mugo, Chairman of the Agricultural Society of Kenya (ASK), underlined the importance of such platforms for sharing knowledge and driving innovation.

Notable innovations included advanced irrigation systems and farm machinery, eco-friendly biopesticides, and sustainable packaging solutions, all aimed at helping

Simlaw Seeds Exhibition Stand

Members of Public at the Trade Fair

The Nairobi International Trade Fair 2024 was a testament to Kenya's commitment to innovation, sustainability, and economic growth. From climate-smart agriculture to global partnerships, the event showcased how Kenya and its neighbors are working together to build a more sustainable and prosperous future.

Kenya's farmers adapt to the challenges of climate change.

Empowering Farmers through Mechanization

The fair also showcased the latest agricultural machinery, with a focus on improving efficiency and productivity. From harvesting machines to eco-friendly fertilizers, exhibitors demonstrated how Kenyan farmers can adopt new technologies to meet the growing demands of a changing climate.

Just to mention but a few, CAMCO Machinery & Equipment Limited, represented by Stephen Marwa, demonstrated their commitment to empowering small and medium-scale farmers. They showcased affordable tractors, and solar-powered irrigation solutions, enabling farmers to embrace mechanization and sustainability.

Their rice, maize and wheat harvesters that provide cost-effective harvesting solutions at a fair price were an innovation that has transformed rice farming across Kenya, particularly in Mwea and Kisumu.

CAMCO's commitment to innovation also extends to food processing equipment and irrigation systems. With solar-powered submersible pumps and other eco-friendly technologies, the company is helping farmers embrace sustainability while increasing efficiency.

Pioneering Agricultural Seeds for a Changing Climate

Starke Ayres, another key exhibitor, demonstrated the potential of hybrid seeds to boost agricultural yields in Kenya. Caleb from Starke Ayres highlighted varieties such as the Forkwood Giant spinach, which is resistant to nematode infections and other diseases. These hybrids are vital for ensuring food security in the face of climate variability.

Starke Ayres also showcased biocontrol, with marigolds acting as natural repellents against pests. These innovations, along with the company's agronomical services, are helping farmers across Kenya adopt more sustainable and productive farming practices.

Malawi: A Hub of Organic Groundnuts and Rice

Exhibitors from across Africa also played a significant role at NITF 2024. Mary Marwanda Nsukwa, representing Tilawe Products from Malawi, showcased organically grown groundnuts, rice, and beans. These products, particularly Malawi's renowned Kirombero rice, are gaining traction in Kenya due to their superior quality and organic nature.

Nsukwa explained that Malawi's groundnuts are free from aflatoxins, making them a preferred choice for import into Kenya. This trade partnership exemplified how organically grown, sustainably managed crops can thrive in a competitive market. Nsukwa's focus on organic groundnuts

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Starke Ayres demo-plots during the Nairobi International Trade Fair

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and rice, which have large markets in Kenya, resonated with the fair's theme, as these products offer a model for cross-border agricultural trade rooted in environmental sustainability.

Mozambique: Seeking Investment Partnerships

Mozambique's presence at the fair was represented by Makari Mendonca from the Investment and Export Promotion Agency, who highlighted the country's agro-processing capabilities. With products ranging from rice and beans to macadamia and malambe-based liquors, Mozambique showcased its potential as a key player in the agricultural export market.

Mendonca emphasized that Mozambique is actively seeking investors and partners to further develop its agricultural and energy sectors. The country's exports of macadamia nuts to Europe and pigeon peas to China illustrate the global demand for Mozambican products.

However, Mendonca also noted that Mozambican farmers face challenges, such as customs barriers and the need for more government subsidies. He urged the government to introduce policies that would reduce import taxes on machinery, which would make it easier for farmers to compete in the international market.

Livestock

One of the most talked-about events during NITF 2024 was the livestock auction, where Deputy President Rigathi Gachagua purchased two champion Boran bulls for KSh1.6 million. This public auction, featuring fat stock cattle and sheep, underscored the importance of Kenya's livestock industry within the broader agricultural landscape.

In conclusion, the Nairobi International Trade Fair 2024 was a testament to Kenya's commitment to innovation, sustainability, and economic growth. From climate-smart agriculture to global partnerships, the event showcased how Kenya and its neighbors are working together to build a more sustainable and prosperous future. The lessons learned and connections made will continue to shape Kenya's agricultural and economic sectors. For the exhibitors and attendees, NITF 2024 was not only a platform for innovation but also a catalyst for future growth and development.

Mozambique Stand: One of the Few international Stands during the Nairobi Fair

The emphasis on climate-smart agricultural practices stood out this year, with exhibitors showcasing technologies designed to increase productivity while reducing environmental impact.

STAK Congress & Expo 2024

We are pleased to announce that the 12th annual STAK Congress & Expo will be held on November 6th to 7th, 2024 at Kenya School of Monetary Studies, Nairobi. The theme for this year's congress is "Leveraging Technologies that Strengthen Agricultural Resilience and Climate-Smart Seed Systems."

This annual congress serves as a vital forum for seed industry players and stakeholders in the region to dialogue on:

- Empowering private sector to deliver solutions to farming communities
- Supportive policy environment for effective seed trade;
- Emerging technologies in seed production
- Sustainable systems for seed delivery; and
- The key limitations hindering the seed industry and technology uptake

The expo is designed to increase interaction and dialogue for enhanced brand visibility and awareness.

International Seed Quality Conference

Dr. Andrew Karanja, CS, Ministry of Agriculture and Livestock Development

KEPHIS organized the 1st International Seed Quality Conference from 19th to 22nd August 2024. STAK was part of the conference organizing committee and took lead in coordinating the newspaper supplement that was published in the Daily Nation on the first day of the conference, which was sponsored by STAK members. The conference was officially opened by the CS, Ministry of Agriculture and Livestock Development, Dr. Andrew Karanja. In his speech, the CS noted that access to quality seeds and inputs is a critical determinant of agricultural productivity as it lays the foundation for successful and sustainable agriculture. Dr Karanja was accompanied by the PS, Ministry of Agriculture & Livestock Development, Dr. Kipronoh Rono. The PS applauded the efforts of seed companies to produce high quality and variety of seeds to meet the needs of Kenyan farmers. The conference discussed thematic areas around seed quality assurance and technological advances for climate change adaptation towards sustainable food and nutrition security. The conference hosted dignitaries from Kenya, various African countries and the rest of the world. The STAK management also engaged KEPHIS management to discuss new certification requirements for vegetables, challenges on issuing eTIMS complaint invoices, seed importation and counterfeit seeds.

STAK Management Engages Parliamentary Committee

STAK engaged the Parliamentary Committee on Agriculture in August and discussed matters seed in great extent. STAK was represented by Wellingtone Wasike (STAK Chairman), Amardeep Jandu (STAK Treasurer), Lynette Ngila (Board Member), Betty Kiplagat (Board Member), Saleem Esmail (CEO, Western Seed) and Joyce Karanja (STAK Ag Executive Officer). The meeting detailed out challenges that have affected seed production in the country which has direct impact on accessibility of seeds by Kenyan farmers. STAK advocates for special designation of land by the government for seed production. STAK further proposed that the government should offer tax breaks through tax incentives such as reduced corporate tax rates, VAT exemptions, and import duty waivers on seed production equipment.

A Farmer Applying Pre-Emergence Herbicide

Pre-emergence Herbicide Application Timings Key to Success

Weeds compete with crops for vital resources such as water, nutrients, and sunlight, often leading to reduced yields and economic losses. One effective approach to combat this challenge is the use of pre-emergence herbicides. These herbicides, applied before weed seeds germinate, can significantly reduce weed competition. However, understanding the optimal timing for application is critical for their success.

Understanding Pre-emergence Herbicides

Pre-emergence herbicides are chemicals designed to prevent the germination of weed seeds. They work by creating a chemical barrier in the soil, inhibiting the growth of roots and shoots of emerging weeds. Herbicides are primarily effective against annual grasses and some broadleaf weeds, which are prevalent in Kenyan agricultural landscape

Effective weed management using preemergence herbicides hinges on timing, which varies based on regional climate conditions, soil types, and specific weed populations. Understanding these factors can help maximize the efficacy of pre-emergence herbicides.

> Applying pre-emergence herbicides at the beginning of the long or short rainy seasons can be an effective strategy for controlling weed emergence. This timing is particularly advantageous for managing weeds that germinate early in the rainy season.

Optimal Timing for Pre-emergence Herbicide

The timing of pre-emergence herbicide applications generally aligns with the two main cropping seasons: the long rains (March to May) and the short rains (October to December). Weed species, local climate, and soil conditions should dictate application timing.

Key Factors to Consider

- ***Soil Temperature:*** Most weed seeds germinate when soil temperatures rise above 50°F (10°C). Monitoring soil temperatures can help determine the right time for herbicide application.

- ***Moisture Availability:*** Adequate moisture is critical for activating the herbicide in the soil. Rainfall following application helps incorporate the herbicide into the soil profile.

- *Local Weed Species:* Different regions in Kenya may harbor different weed species with varying germination timelines, necessitating tailored application strategies.

By strategically planning herbicide applications around these factors, Kenyan farmers can effectively combat weed growth.

Early Rainy Season Application: Pros and Cons

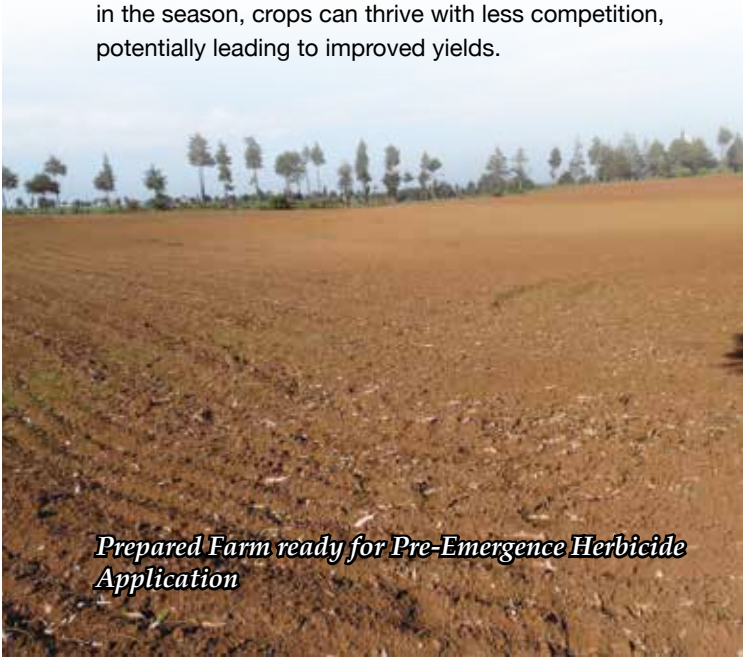
Applying pre-emergence herbicides at the beginning of the long or short rainy seasons can be an effective strategy for controlling weed emergence. This timing is particularly advantageous for managing weeds that germinate early in the rainy season.

Pros of Early Rainy Season Application

1. Prevention of Early Weed Growth: Early applications can prevent the establishment of weeds that compete with crops for resources during critical growth periods.

2. Reduced Need for Additional Treatments: Successful early applications can minimize the need for postemergence herbicides or additional mechanical weeding, saving time and labor.

3. Enhanced Crop Growth: With weeds suppressed early in the season, crops can thrive with less competition, potentially leading to improved yields.



Prepared Farm ready for Pre-Emergence Herbicide Application

4. Long-lasting Effects: Many pre-emergence herbicides have residual activity, meaning they can continue to suppress weed growth throughout the season.

> "Pre-emergence herbicide applications are a vital tool in the fight against weeds in Kenya's diverse agricultural landscape. However, the timing of these applications can significantly influence their effectiveness. Early rainy season applications can effectively suppress early germinators, while late applications target late-emerging weeds. Split applications can offer comprehensive control, though they come with higher costs and increased management complexity."

Cons of Early Rainy Season Application

1. Weather Variability: Early rains can be unpredictable, and applying herbicides too early may lead to reduced effectiveness if cooler temperatures delay weed germination.

2.Risk of Leaching: Excessive rainfall shortly after application can wash away herbicide residues, reducing efficacy and requiring re-application.

3. Missed Late-Germinating Weeds: Early applications may not effectively control weeds that germinate later in the season, potentially leading to weed escapes.

4. Soil Type Considerations: Different soil types (e.g., sandy vs. clay) can affect the retention and effectiveness of pre-emergence herbicides, necessitating careful consideration before application.

Late Rainy Season Application: Pros and Cons

In some instances, farmers may opt for late rainy season applications to target weeds that emerge later in the growing season. This timing may also be appropriate when early applications were not feasible due to weather conditions.

Pros of Late Rainy Season Application

1. Targeting Late Germinators: Late applications can effectively control weeds that germinate later, reducing overall weed pressure.

2. Flexible Timing: Delaying application allows farmers to assess weed populations and adapt their strategy accordingly.

3. Potential for Improved Herbicide Activity: As soil temperatures rise later in the season, herbicide activation can be more effective, provided there is adequate rainfall.

Cons of Late Rainy Season Application

1. *Reduced Effectiveness Against Early Weeds:*

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Weeds that have already emerged may not be controlled effectively, leading to competition with crops.

2. *Increased Competition:* Established weeds can significantly impact crop growth and yield, leading to economic losses.

3. *Higher Risk of Herbicide Resistance:* Late applications increase the likelihood of selecting for herbicide-resistant weed populations, complicating future weed management efforts.

4. *Potential for Increased Costs:* Late applications may necessitate additional labor and resources, increasing overall production costs.

Split Applications: Pros and Cons

Split applications involve applying pre-emergence herbicides in two separate treatments: one at the beginning of the rainy season and another later on. This strategy aims to extend weed control over a longer period.

Pros of Split Applications

1. *Extended Control Window:* Split applications can offer comprehensive control by addressing both early- and late-germinating weeds.

2. *Flexibility to Adjust Timing:* If conditions during the first application are not ideal, farmers can adjust the timing and choice of herbicides for the second application.

3. *Reduced Competition:* By managing weeds throughout the growing season, crops face less competition, potentially resulting in higher yields.

Cons of Split Applications

1. *Increased Costs:* Split applications require more herbicide and labor, which can strain budgets, especially for smallholder farmers.

2. *Complexity of Management:* Managing two separate applications requires careful planning and monitoring of weather conditions and soil temperatures.

3. *Risk of Over application:* There is a risk of applying too much herbicide, which can harm crops and the environment.

4. *Labor and Time Intensive:* Farmers may face challenges in managing the increased workload during the busy growing season.

Pre-emergence herbicide applications are a vital tool in the fight against weeds in Kenya's diverse agricultural landscape. However, the timing of these applications can significantly influence their effectiveness. Early rainy season applications can effectively suppress early germinators, while late applications target late-emerging weeds. Split applications can offer comprehensive control, though they come with higher costs and increased management complexity.

Farmers must carefully consider local conditions, including climate, soil type, and specific weed populations, when deciding on the timing of preemergence herbicide applications. By understanding the pros and cons of each timing strategy, farmers can optimize their weed management practices, ultimately leading to healthier crops and improved yields. Effective weed control not only contributes to agricultural productivity but also supports food security and economic stability in the region.

"Applying pre-emergence herbicides at the beginning of the long or short rainy seasons can be an effective strategy for controlling weed emergence."

Wheat weevil on damaged grain

Reducing Wheat Post-Harvest Losses

The post-harvest phase is a critical period for wheat farmers, as poor management can lead to significant losses in both quantity and quality. With global food security becoming more of a priority, especially in the face of climate change and increasing demand, ensuring that harvested wheat is handled efficiently and effectively is more important than ever.

1. Post-Harvest Losses: A Global Challenge

Post-harvest losses are a major issue for wheat farmers worldwide, with estimates suggesting that between 10% and 30% of wheat is lost before it even reaches the market. These losses occur primarily due to poor handling, inadequate drying, and suboptimal storage conditions. Factors such as moisture, temperature fluctuations, and pests can all degrade the wheat grain, leading to reduced nutritional value, lower market prices, and, in severe cases, complete loss of the crop.

2. The Importance of Drying

Drying is one of the most critical steps in post-harvest management. Wheat, like all grains, must be dried to a specific moisture content to prevent spoilage. Traditional drying methods, such as sun drying, are still common in many parts of the world but are prone to inefficiencies and inconsistencies. Moreover, sun drying exposes the grain to pests, birds, and the elements, increasing the risk of contamination or damage.

Innovative drying technologies, such as mechanical dryers, are transforming how wheat is handled post-harvest. These machines offer more control over the drying process, allowing for faster and more uniform drying. High-temperature drying, combined with moisture monitoring systems, ensures that wheat is dried to the optimal level for storage without over-drying, which can also reduce grain quality.

3. Smart Storage Solutions: Battling Moisture and Pests

Once dried, wheat needs to be stored in conditions that protect it from moisture and pests. Traditional storage methods, such as simple bags or silos, often fall short in maintaining ideal conditions. Moisture ingress during storage can cause mold, leading to contamination by mycotoxins, which render the grain unsafe for consumption.

Smart storage solutions are becoming increasingly popular among wheat farmers, particularly in regions with high humidity or inconsistent climate conditions. These systems use IoT (Internet of Things) technologies to monitor the storage environment, tracking temperature, humidity, and grain conditions in real time. Automated ventilation and

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dehumidification systems can kick in when necessary to prevent moisture buildup and maintain optimal storage conditions.

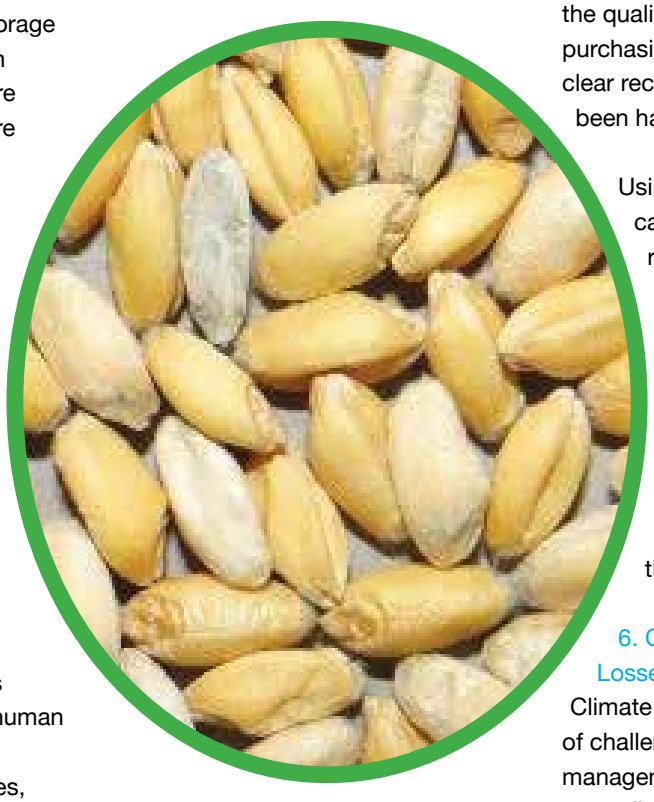
In addition to these technologies, advanced hermetic storage bags are being used in regions where infrastructure for large-scale storage is limited. These bags create an airtight seal, preventing moisture and pests from entering, and are especially useful in developing countries where wheat storage infrastructure is minimal.

4. Sorting and Grading for Enhanced Quality

Post-harvest wheat sorting and grading are essential for ensuring that only the highest quality grains make it to the market. Traditionally, this has been a labor-intensive process, relying on manual inspection to identify and remove damaged or discolored grains. However, this method is time-consuming and prone to human error.

Modern optical sorting machines, which use advanced sensors to detect color, size, and shape variations in the grain, are revolutionizing this process. These machines can operate at high speeds and with high accuracy, ensuring that only the best-quality wheat is processed further. Optical sorters also have the added benefit of removing contaminants such as stones, dirt, or foreign seeds, improving overall product safety and quality.

By ensuring that wheat is properly sorted and graded, farmers can command higher prices for their grain, while consumers benefit from a better product. Moreover, this step in the post-harvest process can reduce waste, as damaged grains can be diverted for other uses, such as animal feed or biofuel production.



White Grain Disorder

5. Digital Tools for Traceability and Quality Control

The integration of digital tools in agriculture is becoming a game-changer, especially in post-harvest management. Blockchain technology, for example, offers farmers and consumers a way to track the entire lifecycle of wheat—from field to fork. This ensures that buyers can verify the quality of the wheat they are purchasing and that farmers have a clear record of how their grain has been handled at every stage.

Using digital platforms, farmers can monitor storage conditions remotely, adjust them as needed, and keep detailed records of post-harvest handling processes. This level of traceability not only enhances food safety but also provides a marketing edge for farmers who can prove the quality and origin of their products.

6. Combating Post-Harvest Losses in a Changing Climate

Climate change presents a new set of challenges for wheat post-harvest management. Rising temperatures, unpredictable rainfall, and increased humidity levels can all exacerbate post-harvest losses by accelerating spoilage or making it harder to maintain optimal storage conditions. In response, farmers are increasingly turning to adaptive strategies to mitigate the effects of climate change. These include improved infrastructure,

Grain Ready for Storage

Storage Silos

such as climate-controlled storage facilities, and the use of alternative drying methods, like solar-powered mechanical dryers, in areas where electricity is unreliable.

Furthermore, collaborations between governments, NGOs, and private companies are facilitating the transfer of knowledge and technologies to regions that are most vulnerable to climate impacts, ensuring that post-harvest losses can be minimized even in challenging environments.

7. The Future of Wheat Post-Harvest: Sustainability and Profitability

The future of wheat post-harvest management lies in sustainable practices that reduce environmental impact while maximizing profitability for farmers. Technologies such as renewable energy-powered dryers, eco-friendly packaging, and bio-based pesticides for storage are becoming more viable and cost-effective.

Sustainability is not just about reducing the environmental footprint, but also about ensuring the long-term profitability of wheat farming. By reducing post-harvest losses, farmers can make the most of their harvests, improve their income, and contribute to global food security.

Conclusion

Wheat post-harvest management is undergoing a transformation, with innovative technologies and practices helping to reduce losses, improve quality, and ensure that the wheat that reaches the market is safe, nutritious, and of high quality. As climate change continues to pose challenges for food production, adaptive strategies, smart storage systems, and digital tools will be key to securing the future of wheat farming.

For farmers, adopting these practices is not only a matter of improving efficiency but also ensuring long-term sustainability and profitability. As the global demand for wheat continues to grow, the importance of effective post-harvest management cannot be overstated.

> Climate change presents a new set of challenges for wheat post-harvest management. Rising temperatures, unpredictable rainfall, and increased humidity levels can all exacerbate post-harvest losses by accelerating spoilage or making it harder to maintain optimal storage conditions.

Hermetic bags commonly used by small scale farmers

Dr. Andrew Karanja, CS for Agriculture and Livestock Development

Agitech Grand Expo 2024 Exceeded Expectations

The recently concluded two-day Agitech Expo 2024 held in Mutithi Mwea, Kirinyaga County proved to be an unparalleled success, far exceeding the expectations of attendees, exhibitors, and organizers alike. This significant event brought together various stakeholders in the agricultural sector, including manufacturers, agro-input suppliers, farmers, agribusinesses, research institutions, and government agencies. It was a celebration of innovation, collaboration, and the pursuit of sustainable agricultural practices.

In his keynote speech, the Expo patron Dr. Peter Karanja emphasized the tremendous efforts that went into planning and executing the event. He remarked, “A lot of man hours were put in innovating, planning, executing, and critiquing to ensure everything went as expected.” This statement entails the dedication and hard work of the organizing team, who met daily to address challenges and ensure every aspect of the expo was meticulously attended to.

Cabinet Secretary for Agriculture and Livestock Development, Dr. Andrew Karanja, echoed this sentiment, expressing his admiration for the innovative spirit displayed at the expo. He noted that the government had much to learn from the Agitech exhibition organizers and the private sector, stating, “It is high time we work with the experts and also learn from them.” This acknowledgement from a high-ranking government official underlined the importance of collaboration between the public and private sectors in fostering agricultural growth and innovation.

Smart Technologies in Agriculture

The theme for Agitech 2024, “The Use of Smart Technologies in Scaling up Agricultural Value Chains from Seed to Market,” was not only timely but crucial for the evolution of Kenya’s agricultural landscape. The expo aimed to equip farmers with the knowledge and tools necessary to adopt technology throughout the entire agricultural value chain, ultimately enhancing productivity and profitability.

Grekkon stand at the Agitech Expo

The visitors to the expo were treated to an atmosphere filled with amazing exhibits showcasing the latest advancements in agricultural technology. Each booth unveiled innovations that promised to transform traditional farming practices, paving the way for a more efficient and sustainable agricultural sector.

One of the highlights of the exhibition was the cutting-edge demo plots, where attendees could witness innovations in action. These demo plots provided hands-on experiences, allowing visitors to interact with the technologies and understand their potential applications in real-world farming scenarios. The interaction between exhibitors and attendees created a lively environment where knowledge was exchanged, and ideas were sparked.

The expo also featured influential experts who spoke on various

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PICTORIAL: AGITECH GRAND EXPO 2024

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topics related to smart agriculture, addressing critical issues such as climate change, food security, and market access. These discussions were vital in helping farmers understand the practical implications of adopting new technologies and the importance of integrating them into their practices.

Engaging Exhibitions and Notable Innovations

The exhibition showcased elaborate stand designs, reflecting the creativity and innovation of the exhibitors. It was evident that significant investments in time, energy, and resources had gone into creating an engaging experience for attendees. Exhibitors were proactive, eager to connect with potential customers, and readily shared their expertise and knowledge.

Major players in the agrochemical and banking sector were well represented at the expo, including industry giants who doubled as event sponsors. The Diamond sponsor was Yara Kenya Ltd, while the Platinum sponsorship attracted seven companies namely; Amiran Kenya Limited, OCP Kenya, BASF East Africa Ltd, GreenLife Crop Protection Africa, Osho Chemicals and Kenya Commercial Bank. The gold sponsors were Equity Bank, Syngenta East Africa Ltd, Elgon Kenya Ltd, Agriscope Africa Limited (East African Seed Co. Ltd.), Agitech Enterprises and Mazao na Afya. Other notable exhibitors were; Bayer East Africa Ltd, Simlaw seeds, Lachlan Kenya Ltd and Corteva Agriscience among others.

Agriscope (Africa) Ltd. Stand

These companies showcased their latest products and services, highlighting their commitment to innovation and sustainability. Their participation not only elevated the quality of the exhibition but also demonstrated the critical role that the private sector plays in advancing agricultural practices in Kenya.

The expo provided a unique opportunity for exhibitors to interact with clients in a more informal setting, as opposed to the often rigid atmosphere of office environments. This relaxed atmosphere fostered meaningful conversations, allowing companies to present themselves positively, whether to new or returning customers. Such interactions are vital in building relationships and trust within the industry.

The expo also facilitated knowledge sharing through panel discussions. These sessions covered a wide range of topics, including the latest research in agriculture, advancements in pest control, and the benefits of adopting digital technologies. Attendees left these sessions with practical insights that they could apply to their farming practices, further enhancing the value of the expo.


CS Karanja at The Mwea TVET Stand

The Government's Role and Vision for Agriculture

In his address, Dr. Andrew Karanja highlighted the critical role of agriculture in Kenya's economy, particularly the contribution of smallholder farmers who form the foundation of the agricultural sector. He underscored that these farmers play a significant role in driving economic growth and reducing poverty. "The productivity of the

agricultural sector is key to reducing poverty and driving economic growth, making it a central focus of the national agenda," he stated.

Dr. Karanja urged farmers to adopt climate-smart agricultural practices to mitigate the effects of climate change on their farms. He emphasized that the government is committed to supporting these efforts, recognizing the challenges that climate change poses to food security and the livelihoods of farmers. By encouraging the adoption of sustainable practices, the government aims to create a resilient agricultural sector capable of withstanding environmental challenges.

He went on to emphasize the need for continuous dialogue between the government and the private sector. He called on industry players to voice their concerns and challenges, particularly regarding policy, taxation, and infrastructure support.

Additionally, Dr. Karanja highlighted the government's efforts to combat the proliferation of counterfeit agricultural products and inputs in the market, a challenge that undermines the hard work of genuine farmers and producers. He acknowledged the need to reduce food imports, which currently cost the country billions of shillings. By reducing reliance on imports and encouraging local production, the government aims to bolster the agricultural sector and enhance food security.

He posed a critical question to those present, asking, "Do we need to import one metric tonne of rice, tonnes of wheat and maize, or even edible oil?" This question served as a call to action for the agricultural community, emphasizing the need for collective efforts to find solutions to these pressing challenges. Dr. Karanja reassured attendees that the government was ready to partner with the private sector in this endeavor.

The Impact of Agitech Expo 2024

The Agitech Expo 2024 provided a platform for various stakeholders to engage in meaningful dialogue, share knowledge, and showcase innovations. The positive feedback from attendees and exhibitors indicates that the event successfully met its objectives, fostering a sense of optimism about the future of agriculture in Kenya. Many attendees expressed their intent to return for future expos, eager to continue learning and exploring new opportunities within the agricultural sector.

With its successful execution, Agitech 2024 has set a strong foundation for the upcoming Agitech Grand Expo 2025, scheduled for October 9-11. This future event aims to build on the successes of its predecessor while continuing to promote agricultural advancements and foster partnerships within the industry.

CS Agriculture and Livestock Development visited the Amiran Stand

In his keynote speech, the Expo patron Dr. Peter Karanja emphasized the tremendous efforts that went into planning and executing the event. He remarked, "A lot of man hours were put in innovating, planning, executing, and critiquing to ensure everything went as expected." This statement entails the dedication and hard work of the organizing team, who met daily to address challenges and ensure every aspect of the expo was meticulously attended to.

Grekkon Limited: Innovating Irrigation and Climate-Smart Agriculture in Kenya

Climate change continually poses unprecedented challenges to agriculture, informing the need for innovation of smart practices. Grekkon Limited is a beacon of innovation, offering climate-smart solutions to farmers across Kenya.

Established in 2017, Grekkon has grown exponentially, becoming a key player in the agricultural sector by providing sustainable and efficient technologies. Under the leadership of Wamae Mwangi, one of the company's directors, Grekkon is transforming how farming is done, ensuring that farmers can adapt to the shifting climate while improving productivity

Grekkon stand at the Agitech Expo

Journey of Grekkon Limited

In just seven years, Grekkon has established itself as a leader in irrigation systems and climate-smart agricultural tools, serving between 4,800 and 5,000 farmers annually. Headquartered in Athi River with branches in Nairobi, Kisumu, Eldoret, Nyeri, and Nyahururu, the company is also set to expand to Uganda and other regions in Kenya, including Mwea. The company's primary focus is on four key areas: irrigation, water conservation, water pumping, and green energy.

"Our main service is irrigation," explains Mwangi. "But we also focus on water conservation using dam liners, water pumping with solar, diesel, and petrol pumps, and green energy solutions like solar dryers and pumps."

A Focus on Climate-Smart Solutions

One of the standout features of Grekkon's services is their emphasis on climate-smart agriculture. The company provides a range of tools designed to help farmers combat the challenges of water scarcity, land degradation, and erratic weather patterns. Some of the company's flagship products include:

1. Solar Pumps and Solar Dryers

These energy-efficient technologies are revolutionizing how farmers access and conserve water. Solar pumps help farmers irrigate their land using renewable energy, significantly reducing operational costs and their carbon footprint.

The solar dryers, which Grekkon has redesigned to resemble greenhouses, enable faster and cleaner drying of crops like vegetables and coffee, protecting produce from contaminants and elements like rain.

2. Multi-storey Gardens

Inspired by the concept of storied buildings, the multi-storey garden allows farmers with limited space to grow vegetables in vertically stacked layers. This innovation saves space and retains water efficiently, making it ideal for urban farmers and those with small plots. "In my backyard, I have seven units," Mwangi shares. "We harvest from them every day, and it's more than enough for the household. We don't buy greens anymore."

3. Rainhose Irrigation System

Grekkon was the first company to introduce the rainhose pipe from India. This innovative irrigation system works in 3D—vertically, horizontally, and diagonally—offering farmers a more flexible and efficient method of watering crops like vegetables, where traditional drip or sprinkler systems may not be effective.

4. Double Emitter Drip Lines

Another game-changing innovation by Grekkon is the double emitter drip lines, which prevent clogging by providing two outlets for water instead of one. "Farmers used to struggle with clogging due to saline water or crystallized salts," Mwangi explains. "With the double emitters, even if one hole clogs, water can still flow through the other."

Supporting Farmers Beyond Sales

One of Grekkon's unique approaches is how it prioritizes farmer needs over sales targets. Rather than

employing traditional salespeople, the company hires agronomists who provide free technical advice to farmers. This ensures that farmers get the most suitable solutions for their specific needs, even if it means recommending a different system than what the customer initially wanted.

"When a farmer walks into our shop, the first thing we do is understand their needs," Mwangi notes. "They might ask for a micro sprinkler, but based on their needs, we might recommend a rainhose instead. It's about solving problems, not making a quick sale."

Additionally, Grekkon offers free agronomy services for the first four months after installation. This hands-on approach ensures that farmers, especially those new to certain technologies, receive the support they need to succeed.

Innovation for the Future

As Grekkon Limited looks to the future, expansion is a key priority. With plans to open branches in Uganda and more regions in Kenya, the company is poised to reach even more farmers, bringing its innovative solutions to those who need them most. Their dedication to improving existing technologies while collaborating with government institutions has positioned Grekkon as a leader in Kenya's agricultural sector.

"Government officers have brilliant ideas, but it's companies like us that take those ideas, improve on them, and bring them to the market," Mwangi says. This collaborative spirit, combined with their technical expertise and commitment to customer service, ensures that Grekkon remains at the forefront of climate-smart agricultural solutions.

Mazao Na Afya: Empowering Farmers Through Agro-Input Solutions and Extension Services

Mazao Na Afya, a leading agro-input distributor in Kenya, is dedicated to providing farmers with everything they need to thrive, from seeds to farm equipment and chemicals.

With a staff of experienced agronomists like Wanjiku Chege, the company distributes essential agricultural inputs like fertilizers, pesticides, insecticides, and farm tools, while offering extensive extension services to support farmers across the country.
Chege emphasizes the importance of personalized support for farmers. "We provide guidance throughout the entire farming process, from selecting the right seeds to recommending fertilizers and pest control strategies," she explains.

The company's qualified agronomists and veterinarians visit farms, offering solutions tailored to specific crops and challenges. This hands-on approach ensures that even first-time farmers can achieve successful harvests with minimal risk.

Mazao Na Afya's commitment to sustainable farming is evident in its promotion of organic fertilizers alongside synthetic options. Chege advocates for the use of organic inputs to rejuvenate soils depleted by years of chemical use. "Our soils have been overworked for generations. It's essential that farmers incorporate organic fertilizers to restore soil health and productivity," she says.
Beyond providing inputs, Mazao Na Afya is also working to secure market links for farmers, helping them sell their produce. While still refining this service, the company recognizes that connecting farmers to markets boosts their confidence in investing in better farming practices.

Mazao na Afya Stand at the Agitech Expo

Chege encourages farmers to embrace new technologies and methods, emphasizing the importance of adapting to modern agricultural practices for better yields. "Embracing change is crucial in agriculture," she advises. "Traditional methods may no longer be enough to guarantee high-quality produce in today's changing climate."

Mazao Na Afya continues to be a trusted partner for farmers, guiding them towards more productive and sustainable farming solutions while striving to ensure that the fruits of their labor find the right markets.

Seed Treatment Enhances Crop Yield

Weak planting material is highly vulnerable to pests and weather extremities; this is why seed treatment increases growers' chances of getting high yields. The advantage explains the popularity of seed treatment products among farmers on the one hand and a significant demand for pre-processed planting material on the other. Because the process requires extra time, special equipment, and extreme caution with seed treatment chemicals, it makes sense for farmers to buy and for ag input suppliers to provide already treated seeds.

What Is Seed Treatment?

Specific processing of the planting material to make it more resilient to harsh conditions also known as seed dressing. Depending on the treatment substance origin, there exist synthetic and organic seed treatments. Also, different dressing preparations target different pathogens and pests, so there are seed treatment fungicides, insecticides, nematicides, etc. Finally, the three main types of dressing fall into pre-sowing, pre-storage, and mid-storage treatments, based on the processing time.

The treatment can be conducted on both sides: by a planting material producer (as a boost to regular seeds) or by a farmer (to ensure fast and effective germination and further growth).

Seed Treatment Methods

Pre-processing of the planting material before sowing promotes germination and overall crop growth potential, as well as significantly increases resistance both to biotic and abiotic stresses. In particular, biotic factors are pathogen and pests, while abiotic stresses include soil salinity, poor soil types, droughts, and other unfavorable weather conditions.

Different methods of seed treatment comprise:

- Fungicidal and insecticidal dressing,
- Hardening,
- Fortification,
- Pelleting,
- Infusion,
- Osmotic priming,
- Fluid drilling,
- Separation of viable seeds.

Fungicide Seed Treatment

This protection method controls fungal diseases like smuts, rots, or seedling blights. Seed treatment fungicides don't protect the crops throughout all plant growth stages but help them establish faster.

There are several types of fungicide seed treatment depending on its purpose and pathogen presence:

- Disinfection kills already penetrated pathogens that caused infections

- Disinfestation controls microbes on the planting material surface
- Protection prevents pathogen presence and further infection.

Fungicide seed treatment chemicals may have different application forms, e.g., slurry powder or liquid. There are metallic and non-metallic, organic and synthetic, mercurial and non-mercurial fungicides, depending on composites. The ones that penetrate the planting material to prevent fungal diseases without affecting the metabolism of the host crop are known as systemic.

Fungicide dressing may serve for several purposes at once (e.g., for disinfection and disinfestations), as well as to protect the planting material from other pests (e.g., insects or nematodes).

Fungicide seed treatment is beneficial:

- For early sowing when excessive soil moisture and low soil temperature increase the risks of damping-off diseases;
- In conservation tillage practices;
- When germination capacity is low.

Fungicides are more effective when used in combination with other active agents. For example, mefenoxam and metalaxyl can be successfully applied against the water molds of Pythium and Phytophthora but are inactive to Rhizoctonia, Phomopsis, and Fusarium. However, the combination of metalaxyl and azoxystrobin shows good activity to all the enlisted fungi but Phytophthora .

Seed Treatment Insecticides

This treatment method tackles insect infestations and protects the planting material from the damage they make. Specific insecticides are often effective against specific pests, so chemical mixtures or compounds can kill more insect species.

However, it is important to observe chemicals compatibility, sequence, and caution measures, and never consume treated material as human or livestock food. A certain list of seed treatment chemicals (including Hexachlorobenzene) is banned due to severe poisoning with lethal consequences, and aggressive agents are replaced with milder ones.

Hardening As a Seed Treatment Method

Hardening suggests soaking the planting material in a specific solution to make seedlings more resilient to cold and droughts. It also speeds up germination, which starts after the solution absorption. To carry out the treatment process successfully, one must determine:

- The equal volume of the solution and the planting material;
- Correct soaking time;
- Proper drying (to the standard moisture content in seeds).

Fortification

This method provides the planting material with nutrients to boost seedlings' vigor and make them more tolerant of unfavorable soil environments. Typically, nutrients are delivered by soaking the planting material in a fertilizer solution, yet this

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Eco-T®, RhizoVital®42 & V12 Initiate®

for KEY nutrients plus soil microbe innoculants to grow HEALTHY STRONG seedlings

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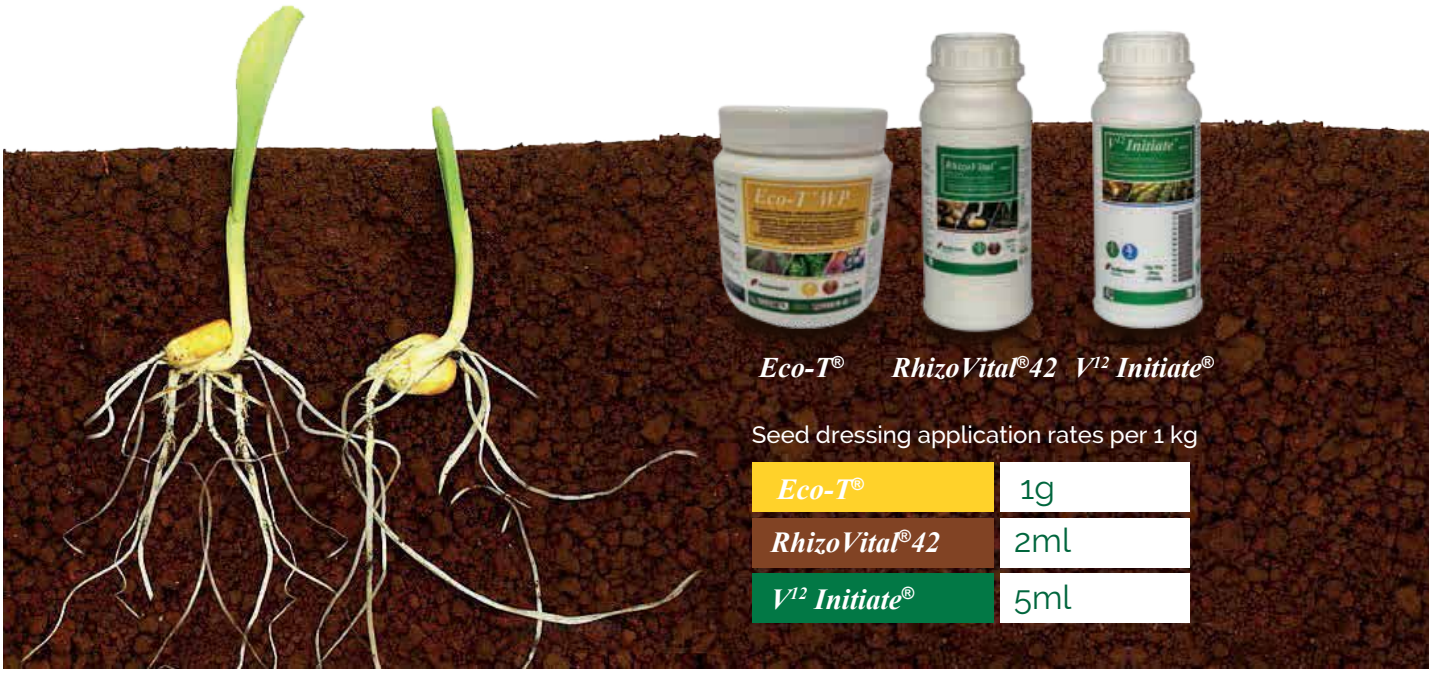
Maize Power Seed Dressing

Eco-T® contains beneficial fungus Trichoderma asperellum, actively grows on and colonizes roots, creating a protective barrier to fungal pathogens.

RhizoVital® 42 grows on and colonizes roots, supporting healthy root growth and improving availability of soil nutrients (e.g. phosphorous).

V12 Initiate® Improves rate of seedlings emergence, seedling vigour and strength.



Seed dressing application rates per 1 kg

Eco-T®	1g
RhizoVital®42	2ml
V12 Initiate®	5ml

Andermatt

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Healthy Food and Healthy Environment, for all

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type of seed treatment is not suitable for all crops. In particular, protein-containing seeds (e.g., soybeans or peas) are nourished through moist sand hydration (when the planting material is put in wet fertilized sand for a specific time).

Pelleting

This method implies coating the planting material with inert substances that increase its shape, size, and weight. The inert substances like lime, chalk or talcum stick to the seed with adhesives. Pelleting is applied for tiny or expensive planting material to facilitate its handling, which is particularly useful for forest tree seeds and aerial sowing. Besides, pelleting increases germination potential, seedling vigor, and immunity to diseases.

Apart from inert substances, seed coating (shell) may contain nutrients, growth promoters, oxidizing agents (e.g., calcium peroxide CaO_2), rhizobia, etc.

Treated and Packed Seeds

Infusion

In this treatment type, useful substances slowly penetrate the planting material with the help of organic solvents, e.g., acetone or dichloromethane. The benefit of this method is that it doesn't require long-time drying (5-10 minutes are enough). This is because organic solvents evaporate naturally when the infusion process is over. Infusion is also known as a dormancy-breaking seed treatment method.

Osmotic Priming

It is a relatively expensive treatment method used when soaking destroys the planting material. This refers to legume seeds with big embryos and high protein content. In the case of osmopriming, water absorption is slowed down by osmotic agents. Typically used osmotic solutions are polyethylene glycol or salt solutions like KNO_3, NaCl, or K_3PO_4.

Osmotic priming helps improve and synchronize germination when the soil temperature is low.

Fluid Drilling

This method is applied to germinated planting material and aims to protect it while sowing. The process includes several stages:

- Germination
- Separation of germinated and non-germinated kernels
- Covering the germinated material with gel (e.g., guar)
- Planting the gel-covered material to the seedbed.

Selection of Viable Planting Material

This treatment method helps increase germination rates and crop density by sorting out empty or damaged seeds. Sowing only viable material gives the required number of plants in the field.

The selection is carried out through testing based on specific gravity , incubation-drying-separation, near-infrared spectroscopy, and other techniques.

Seed Treatment Benefits

Planting material treatment positively affects the overall crop vigor and increases the plant's tolerance to biotic and abiotic stresses. In particular, chemical or biological seed treatment:

- Enhances plant growth with delivered nutrients, which makes crops stronger in competing with weeds;
- Helps in integrated pest management since colored kernels keep birds from eating them;
- Reduces the necessity of chemical applications (fungicides and pesticides) in subsequent growth stages;
- Cecreases the occurrence of crop diseases due to pathogens and unfavorable growth conditions;
- Boosts roots growth and shoots vigor thanks to nutrients supply;
- Provides beneficial bacteria (e.g., rhizobia) if they are added to the filler;
- Protects crops from nematode infestations through nematicide seed treatment;
- Increases plant density and field productivity thanks to planting more viable seeds;
- Allows collecting coated grains faster when they are spilled.

About the author:
Vasyl Cherlinka Scientist at EOS Data Analytics
Vasyl Cherlinka is a Doctor of Biosciences specializing in pedology (soil science), with 30 years of experience in the field. He attended the engineering college in Ukraine and received his degree in agrochemistry, agronomy and soil science in the Chernivtsi National University. Since 2018, Dr. Cherlinka has been advising EOSDA on problems in soil science, agronomy, and agrochemistry.

How Science-Based Regulations Can Improve Trade

Paul Spencer (Right) is Corteva Agriscience's Global Grain Trade Leader. He provides strategic counsel to the company on a range of trade policy issues, including: biotechnology asynchronous approvals, low-level presence, plant breeding innovations, and pesticide maximum residue levels. He was previously a Senior Foreign Service officer with USDA's Foreign Agricultural Service, serving at U.S. Embassies in Europe, Asia, and the Middle East.

Paul Spencer

What has plant breeding meant for the grain trade?

Plant breeding has dramatically increased grain harvests, productivity and sustainable farming practices. Productivity has been driven by the commercialization of technologies such as mutagenic breeding beginning in the 1920's, hybrids in the 1930's, marker assisted selection in the 1980's and genetic engineering beginning in the 1990's. For the future, plant breeding innovations, such as gene editing, show great promise. Just in the last 50 years, average U.S. yields for corn, the most valuable crop in the United States, have more than doubled. Other field crops share a similar success story.

Innovation-driven productivity has given rise to whole industries including feed, exports, biofuels, transportation and logistics. Innovation has enabled the United States, Brazil and other countries to become a bedrock of global food security. However, future growth in will be limited by the pace at which seed companies can commercialize new product innovations.

Why are grain handling policies and practices important to agricultural innovation?

The grain trade connects growers to global markets, which is important to support farmer income. For consumers, accessing a global grain supply is important to enhancing food security. But the grain trade should not act as a policy-making gatekeeper.

In the United States, grain merchandizers have profited from the concept of fungibility. A bushel of USDA graded #1 soybeans is legally identical to any other bushel of #1 soybeans anywhere in the country.

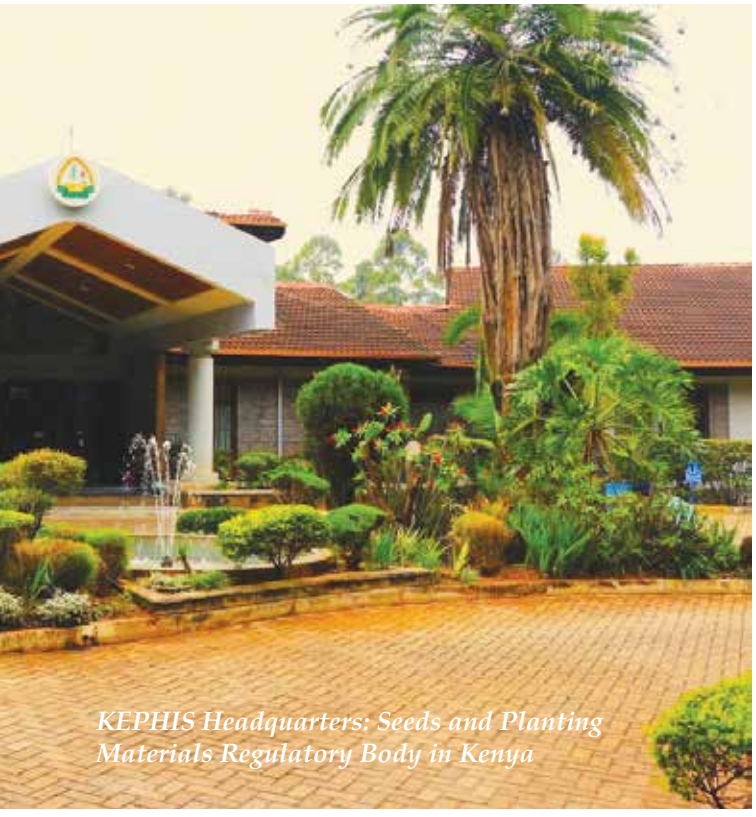
The agricultural sector has invested in nation-wide infrastructure, logistic, marketing, and payment systems on the premise that consignments of commingled grain are commercially identical. Fungibility is also supported by century-old legislation which,

among other things, authorize the government to establish grain grades and license grain elevators. While the fungibility-based system is efficient at moving large volumes of grain, it is increasingly out of synch with the modern demands of farmers and consumers, stifles adoption of needed new technologies and can magnify the effects of foreign non-tariff trade barriers.

How can one country's regulatory system hurt another country's ability to innovate?

Grain traders will seek to export to a country even if it has a politicized regulatory system. Governments in these markets put non-scientific barriers in place to discourage the use of technologies that farmers in exporting countries need to address challenges such as sustainability and climate change. In response, grain merchandisers place contractual restrictions on farmers preventing them from using certain biotech seeds, for example. These restrictions can have a strong commercial feedback effect. Farmers do not want to buy seeds or other technological inputs if that will make their grain unmarketable, even though many of these technologies are needed to protect their crops from yield-robbing pests, disease and weeds. This in turn limits technology availability until a certain foreign approval is achieved, even if that foreign regulatory system is politicized and non-functional.

The current system can lead to enormous distortions. For example, U.S. exports of corn products to the EU are consistently less than 1% of U.S. production and less than 5% for Brazil. Despite these low numbers, the grain trade has historically demanded the entire North and South American grain production system accommodate the EU's politicized and non-functional import rules. A market that buys a small fraction of the crop can in effect impose its approach to technology on an entire hemisphere via the grain trade's current business model, preventing farmers and consumers from accessing new technologies and discouraging innovation investments generally.



KEPHIS Headquarters: Seeds and Planting Materials Regulatory Body in Kenya

What changes are needed?

A better question is what is driving change. Over the past 25 years, differing approaches to regulating biotech crops created tension in the fungibility-based system but no significant alternatives emerged. Now, new societal and regulatory demands are emerging, including carbon budgeting requirements, unrealistic pesticide maximum residue limits and sustainability certification. There are also and new biotechnology-based value-added grain traits. These will further challenge fungibility-based systems.

To continue to access increasingly restrictive foreign markets, specific commodity streams that start on the farm will begin to form. While complex and long-term, this segmentation can provide additional strategic benefits by disconnecting farmers and consumers from dysfunctional foreign regulatory systems while still enabling trade. Key to this transition will be transmitting value through the grain handling system to farmers in ways that support and pay for grain segregation and higher production costs. In the future, markets will have to pay extra for grain produced to unique standards, rather than having the costs borne by others.

What is the Role of Governments?

All governments should strive for science and evidence-based regulations. Failing that, governments in exporting countries should support infrastructure and programs that speed the formation of commodity channels capable of serving politicized and restrictive foreign markets. Also, grain handling policies should not disadvantage new technologies by inappropriately characterizing products as different when there is no science-based reason to do so. In the United States, USDA clarifying that genomic changes are not 'characteristics' of grain under the Grain Standards Act would be an example of policy support for innovation consistent with USDA's efforts to modernize its Part 340 regulations.

CAMCO
Durable & Affordable

Leads the Way i

With the advent of new and sustainable technology, farming in Kenya is becoming increasingly mechanized. CAMCO Equipment Kenya Limited, a dealer of both agricultural machinery and construction equipment is leading the market by providing efficient, sustainable, and affordable solutions to farmer's mechanical needs.

The product line by CAMCO includes Lovol tractors ranging from a small 25 horsepower for small-scale farmers to 260 horsepower for large-scale farmers for land preparation and planting. Moreover, the company also deals in harvesting solutions as well, that is combine harvesters.

"Our FM World rice harvesters have achieved remarkable success in the market, establishing themselves as the leading machinery in the country today. These harvesters are specifically designed for small and medium-scale farmers, offering an affordable option at under six million. This is a significant improvement compared to conventional combine harvesters, which typically cost over 30 million, making FM World's machines a more accessible and popular choice," says Stephen Marwa, the sales and marketing manager for CAMCO Equipment Kenya Limited.

CAMCO also deals in food processing equipment, stocking oil expellers, used for extracting oil from sunflower, avocado, sesame, and ground nuts. Moreover, irrigation equipment is also available ranging from, surface irrigation pumps to borehole pumps. Stephen also lauds their company for going green as the race to mitigate and adapt to the effects of climate change heats up. Despite dealing in power generators of

Different Machinery sold by CAMCO

n Farm Mechanization

Combine Harvester

minimal emission, ranging from the small 650 watts petrol ones to the bigger 3000 kVA generators, the company stocks solar submersible pumps including the booster pumps.

CAMCO offers servicing and warranty to equipment purchased from them. "We provide a two-year warranty, which sets us apart as the only company offering this for equipment.

Most companies only offer a one-year warranty on similar machines. In addition to this, we offer comprehensive backup support, including spare parts for all the equipment sold through CAMCO, despite the market being awash with compatible parts.
We also have a fully equipped, modern workshop to ensure that all our machines are properly serviced and maintained," says Stephen.

Mr. Stephen Marwa (R), the sales and marketing manager for CAMCO

The robust to solve issues that "We have from China working we support board."

human resource is with technical skills prevailing technical may plague equipment. qualified technicians, both and local technicians together to ensure that our farmers across the

> "You already have a machine, go mechanize your farm, let it generate more revenue for you, grow small, and go big."

Despite selling in cash, CAMCO also provides financing solutions in partnership with banks, Saccos, and microfinance institutions to support the dreams of the farmer to mechanize increase yield, and boost profit margin.

Additionally, the company throws in gifts and hampers to their customers including free knapsack sprayers, service kits, and free first three services.

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One of the generators sold by CAMCO

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However, despite registering success in the market, Camco decries retrogressive government policies that have slowed the growth and transition to mechanized farming for the benefit of food security.

"The taxes imposed by the government on these products during importation are quite high, and we urge them to reduce these taxes. For example, agricultural machinery like combine harvesters is taxed at around 16%, despite being essential to agriculture, which is the backbone of our economy. We need the government to lower or even eliminate these taxes, similar to what they've done for tractors. High taxes pose a significant challenge and create limitations for importers like us," he says.

As company with its sights set on the future, CAMCO currently partners with Egerton University to train engineers on plant and agricultural equipment. Mr. Stephen affirmed CAMCO's position as a market leader in plant equipment dealerships, highlighting their unique offerings, stating, "We are exceptional on our own." He mentioned that CAMCO introduces new technologies and innovations in the machines they sell.

For instance, their tractors feature unique advancements that competitors lack, saying, "Our tractor, for example, has new features that no other competition has. It's only on our local tractors. This is unique, this is exceptional."

In addition, he stressed the durability and affordability of CAMCO's products, stating, "We have a principle that we say durable and affordable. Our products are very durable and yet they are also very affordable in terms of pricing."

In offering advice to individuals looking to invest in machinery, Stephen encouraged starting small and growing big, suggesting that first-time investors may not fully understand certain aspects of the industry, and advised them to begin with smaller machinery, noting that CAMCO offers a range of affordable options.

"Start small and grow big," he recommends. For example, CAMCO provides small walking tractors priced between 300 and 350 thousand, and smaller power tillers costing between 60 and 100 thousand. "You already have a machine, go mechanize your farm, let it generate more revenue for you, grow small, and go big."

CAMCO won the best Stand Award during the Nairobi International Trade Fair 2024

ETG's range of fertilizer blends

Planting Blends

Top dressing Blends

Ms. Carole Kariuki, CEO, KEPSA

KEPSA : Unlocking Africa's Agricultural Potential

By Mary Mwende

Recently, the world has been grappling with the dual challenges of food insecurity and climate change. The significance of agriculture has never been more pronounced like it is in this day and era. Africa has an abundance of natural resources, and thus the opportunity to transform its agricultural landscape is ripe for the taking. During the recent 4th Edition of the National Agriculture Summit, Ms. Carole Kariuki, the Chief Executive Officer, KEPSA, delivered a powerful address that called for immediate action to tap the continent's agricultural potential. Her insights illuminated the path forward, emphasizing the critical need for collaboration, innovation, and robust policy frameworks to drive sustainable growth in the agricultural sector.

"Agriculture is our wisest pursuit," she stated, quoting Thomas Jefferson, "because it will in the end contribute most to real wealth, good morals, and happiness." With such profound words, Kariuki reminded us that at the heart of every thriving nation lies the ability to feed its people and build lasting wealth.

She asserted, "There's no country that can say it's wealthy if it cannot feed its people." This idea that no nation can claim true prosperity without the ability to feed its populace is particularly relevant today, as many African countries continue to grapple with issues related to hunger and malnutrition.

Despite housing 17% of the global population and possessing 20% of the world's landmass, Africa only accounts for a mere 2.8% of global GDP and 3% of global trade. Ms. Kariuki's remarks serve as a clarion call for both policymakers and stakeholders to reassess their strategies and recognize agriculture as a cornerstone of national wealth and development.

Time to Tap Comparative Advantages

Africa is endowed with unique comparative advantages that can be leveraged to boost agricultural output and foster economic growth. One of the most significant advantages is its vast arable land; Ms. Kariuki noted that "Africa's percentage of global arable land is 65%." Furthermore, with 60% of Africa's population under the age of 25, the continent stands at the threshold of a demographic dividend that could be harnessed for agricultural innovation and productivity.

To tap into this potential, she emphasized the importance of embracing technology and innovation, particularly

among the youth. She stated, “The youth, who are so technologically advanced, can use digital platforms for market access, precision agriculture, and everything else.” Initiatives like Nigeria’s Thrive Agric, which provides financial resources to farmers, exemplify how technology can facilitate agricultural growth and empower smallholder farmers.

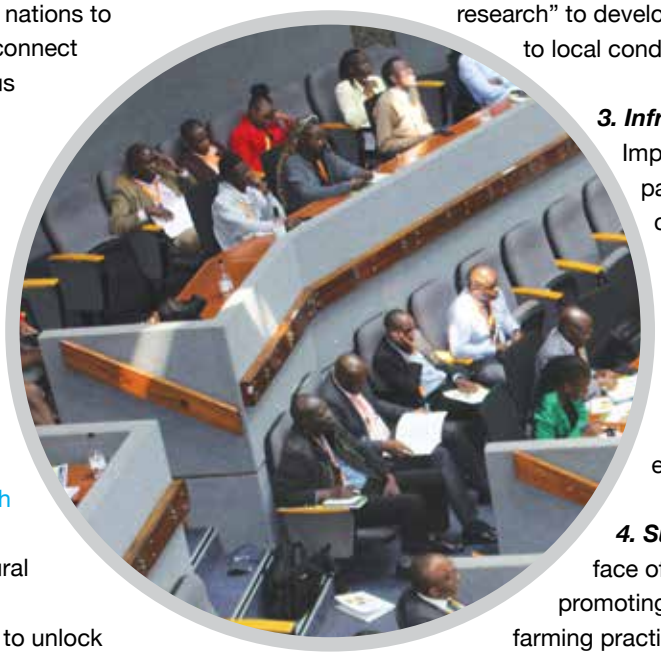
Her insights encourage African nations to invest in digital platforms that connect farmers directly to markets, thus eliminating inefficiencies and increasing profitability. She noted that “using the digital platforms and e-commerce, they can still do business in agriculture.” By modernizing agricultural practices, Africa can significantly increase its productivity and self-sufficiency.

Addressing Challenges Through Policy Frameworks

While the potential for agricultural growth in Africa is vast, several challenges must be addressed to unlock this potential fully. While emphasizing the critical role of robust policy frameworks in overcoming these challenges. She identified several key areas where government intervention is essential:

1. Access to Finance: One of the primary barriers to agricultural growth in Africa is limited access to financial resources for smallholder farmers. To enable these farmers to invest in their operations and improve productivity, Ms. Kariuki called for policies that “facilitate access to credit.”

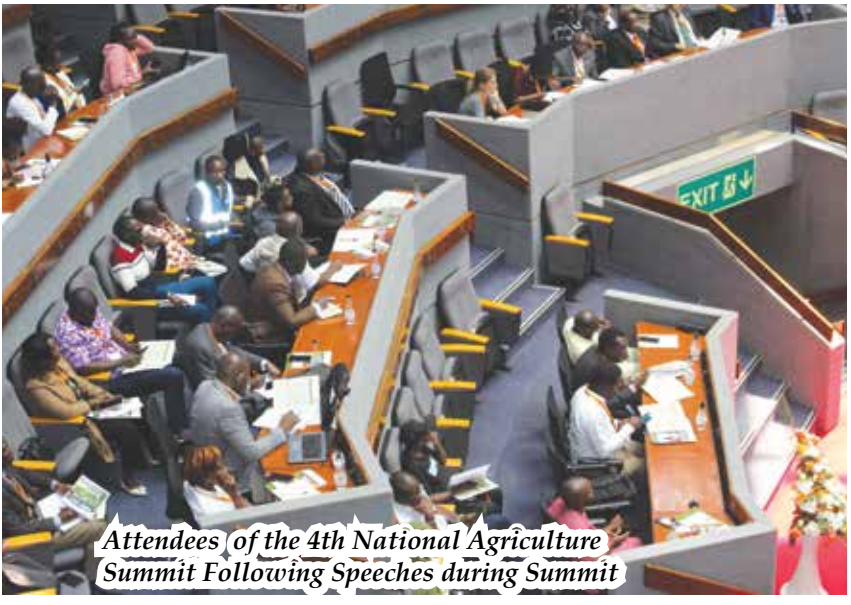
2. ***Investment in Research:*** Collaborative efforts between government, private sector, and academic institutions are vital for advancing agricultural research. She urged stakeholders to “foster partnerships for agricultural research” to develop innovative solutions tailored to local conditions.



A Section of the Attendees at the Summit

3. Infrastructure Development: Improved infrastructure, particularly in rural areas, is critical for reducing post-harvest losses and enhancing market access. She called for the building of cold storage and processing facilities through public-private partnerships to improve the efficiency of supply chains.

4. Sustainable Practices: In the face of climate change, policies promoting environmentally sustainable farming practices are essential. She stated, “We have the opportunities to use solar power systems... biogas, wind, and hydropower for cold storage.” By adopting sustainable practices, Africa can protect its natural resources while simultaneously increasing agricultural productivity.



Attendees of the 4th National Agriculture Summit Following Speeches during Summit

5. Trade and Export Opportunities: Leveraging trade agreements such as the African Continental Free Trade Area (ACFTA) and the African Growth and Opportunity Act (AGOA) can enhance Africa’s agricultural exports and diversify its markets. She emphasized that “if we don’t add value to our crops, then we will not be able to take advantage of the trade agreements.”

6. Agro-Processing: Encouraging investments in agro-processing is crucial for adding value to agricultural products and creating jobs. She remarked, “We love to see our numbers for tea and coffee and fruits and vegetables, but there’s so much we can export from here that we need to diversify.”

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The Role of Collaboration

This address underscores the importance of collaboration among various stakeholders in the agricultural sector. She highlighted the need for partnerships among "the private sector, government, research institutions" to create an enabling environment for agricultural growth. This collaborative approach can lead to the development of comprehensive policies that address the multifaceted challenges faced by farmers.

Moreover, partnerships between agricultural institutions and private enterprises can drive innovation and improve efficiency within the sector. By fostering an ecosystem that encourages knowledge sharing and resource mobilization, African nations can leverage their collective strengths to enhance agricultural productivity.

Panel Discussions during the summit

A Call to Action

Carole Kariuki's compelling address at the 4th Edition of the National Agriculture Summit serves as a powerful reminder of the immense potential within Africa's agricultural sector. By implementing strategic policies that tap the continent's resources and engage its youth, African nations can build a resilient agricultural economy that not only feeds its people but also significantly contributes to global food security.

As she poignantly stated, "To forget how to dig the earth and to turn the soil is to forget ourselves." This powerful message calls for action from policymakers, farmers, and stakeholders across the continent to reinvigorate agriculture as a cornerstone of economic development.

The time to act is now; Africa has the potential, the resources, and the youthful energy to transform its agricultural landscape. By fostering a culture of innovation, investing in sustainable practices, and promoting collaboration among all stakeholders, African nations can create a thriving agricultural sector that uplifts communities and drives economic growth. The future of Africa's agriculture lies in our hands, and it is our collective responsibility to ensure that this potential is realized for generations to come.

> "Africa's percentage of global arable land is 65%. Furthermore, with 60% of Africa's population under the age of 25, the continent stands at the threshold of a demographic dividend that could be harnessed for agricultural innovation and productivity." Ms. Carole Kariuki.

Bridging Expertise and Innovation for a Sustainable Agricultural Future

Stella Wawira, the Agribusiness Liaison at SOCAA

Uasin Gishu farmers Advocating for Sustainable Agriculture

The Society of Crop Agribusiness Advisors of Kenya (SOCAA) is a membership organization that has made significant strides in driving innovation, fostering collaboration, and promoting investment across Kenya's agricultural sector. With a diverse network of agricultural practices and advisory professionals, SOCAA plays a crucial role in addressing the challenges faced along the agricultural value chain. Its mission is to improve food security, nutrition, and rural economic development, all while advocating for sustainable and responsible practices.

A Diverse Membership Base

According to Stella Wawira, the Agribusiness Liaison at SOCAA, the organization brings together stakeholders from all segments of the agriculture value chain. This includes professionals in input supply, crop protection, agronomy, certification, market linkages, and post-harvest handling. SOCAA offers different types of memberships, catering to the needs of diverse individuals within the industry.

The categories include full membership, student membership, corporate membership and farmers membership. This inclusivity ensures that a broad spectrum of professionals can engage with organization's objectives.

"SOCAA's inclusive nature ensures that professionals from different areas of agriculture can connect, share ideas, and collaborate to overcome challenges. By bringing these minds together, we are able to address key gaps and make a substantial impact on the sector," notes Stella.

> The organization provides a platform for technical experts from different sectors to exchange information and ideas, thereby helping to strengthen the agricultural value chain. Through these efforts, SOCAA is able to empower its members with the knowledge and tools necessary to drive meaningful change in the sector.

Driving Collaboration and Innovation

At the core of SOCAA's efforts is the focus on collaboration and innovation. Stella emphasizes that the organization connects agricultural experts with opportunities by identifying gaps in the value chain and working with specialists to address these challenges. This proactive approach helps to foster innovation and improve agricultural practices, leading to enhanced food security, better nutrition, and economic development, particularly in rural areas.

As Stella points out, SOCAA's commitment to sustainability is evident in its initiatives to promote responsible practices, ensuring that the agricultural sector evolves in ways that benefit both the economy and the environment.

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Promoting Knowledge Sharing and Capacity Building

SOCAA places a strong emphasis on knowledge sharing and capacity building. According to Wawira, The organization provides a platform for technical experts from different sectors to exchange information and ideas, thereby helping to strengthen the agricultural value chain. Through these efforts, SOCAA is able to empower its members with the knowledge and tools necessary to drive meaningful change in the sector.

One of SOCAA's core activities is advocacy, where it champions important issues within Kenya's agricultural sector. By addressing policy concerns and working with relevant stakeholders, SOCAA ensures that the agricultural environment is conducive to growth and innovation. Additionally, the organization is committed to strengthening the capacity of professionals in the agricultural and food industries throughout Africa, with the overarching goal of ensuring food security and improved nutrition.

"Advocacy is one of our core driving initiatives. We work to ensure that the voices of agribusiness professionals and smallholder farmers are heard in Kenya's agricultural policy discussions," says Stella.

Knowledge Sharing and Capacity Building

Successful Partnerships and Projects

SOCAA's impact can be seen through its collaborations with various organizations on key agricultural projects. One notable initiative is the recently concluded first phase of the Regenerative Agricultural practices for improved Livelihoods and Markets Project (REALMS), funded by the IKEA Foundation. This project, carried out in partnership with SNV, GLUK and other partners, aimed to promote regenerative agricultural practices

Farmer Training Sessions

in Kenya, particularly in the Rift Valley and Western regions. The successful implementation of this project demonstrates SOCAA's ability to mobilize resources and drive impactful change in the sector.

"Through our efforts, we have seen real transformation on the ground. Farmers are adopting regenerative practices, and this has resulted in better yields and improved livelihoods," Wawira explains.

A Vision for the Future

While the agricultural sector grapples with mounting challenges, from climate change to food security, SOCAA's dedication to innovation, sustainability, and collaboration positions the organization as a key player in the agricultural landscape of Kenya and Africa. Through its commitment to improving food security, promoting responsible agricultural practices, and uplifting rural economies, SOCAA continues to make meaningful contributions to the development of the agricultural sector.

> "SOCAA's commitment to sustainability is evident in its initiatives to promote responsible practices, ensuring that the agricultural sector evolves in ways that benefit both the economy and the environment."

As SOCAA continues to expand its membership and roll out new initiatives, the organization remains focused on creating a more sustainable and prosperous future for agriculture in Kenya and beyond.

"Our vision is to expand our reach and impact, ensuring that more professionals, farmers, and stakeholders can benefit from the knowledge, partnerships, and resources we offer," Concludes Stella.

AGRICULTURE SECTOR NETWORK

4th National Agriculture Summit

Sowing Seeds of Change

By Mary Mwende

Attendees of the 4th National Agriculture Summit at KICC

The fourth edition of the National Agriculture Summit convened recently at the Kenyatta International Convention Centre (KICC) under the theme *"Embracing Sustainability: Innovations, Research, and Competitiveness in Agriculture."* Organized by the Agriculture Sector Network (ASNET), which serves as the agriculture sector board for the Kenya Private Sector Alliance (KEPSA), this summit gathered key stakeholders from the government, private sector, and international development partners to tackle the pressing challenges facing the agriculture sector and to explore innovative solutions aimed at fostering sustainability.

A Noteworthy Gathering

Dr. Andrew Karanja, Cabinet Secretary, Ministry of Agriculture and Livestock Development (MoALD), during his opening remarks emphasized the critical importance of agriculture to Kenya's economy, asserting that it is the backbone of the nation. Karanja remarked on the sector's potential to drive economic growth, create jobs, and improve food security. However, he also pointed out the myriad challenges that are currently impacting productivity and competitiveness in agriculture, such as climate change, inadequate funding, and insufficient infrastructural support.

Karanja reaffirmed the government's commitment to creating an enabling environment for agricultural investment and innovation, advocating for greater collaboration between government bodies and other stakeholders to address these challenges effectively.

Dr. Andrew Karanja (Left), CS, Ministry of Agriculture and Livestock Development (MoALD) with Dr. Bimal Kantaria, OGW, EBS (Right), chairman of ASNET

Bimal Kantaria, the chairman of ASNET, highlighted the organization's ongoing mission to unify various value chains in the agricultural sector.

Established in 2020, ASNET brings together over 400 business organizations across 32 agricultural value chains under one umbrella, enabling a more coordinated approach to dialogue and collaboration with the government and other stakeholders. Kantaria noted that the agricultural sector is multifaceted, encompassing everything from production to distribution and export, making it vital for all parties involved to work together to enhance the overall economic impact of agriculture in Kenya.

Kantaria expressed pride in

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the progress ASNET has made since its inception, acknowledging the support from various partners, including the German government and the Kenya Association of Manufacturers (KAM). He also underscored the collaborative spirit that has begun to emerge within the sector, emphasizing that the solutions to current agricultural challenges lie in working together, rather than through confrontation. "We believe that our core philosophy of collaboration will yield the results we need to move the sector forward," Kantaria stated. He urged all stakeholders to embrace this collaborative approach as they work towards a common goal of enhancing the agricultural landscape in Kenya.

The Importance of Actionable Strategies

Ms. Carole Kariuki, CEO, KEPSA, echoed the sentiments of her fellow speakers. She highlighted that while there has been significant progress in developing policies that support the agriculture sector, the challenge remains in translating these policies into actionable plans that have a tangible impact on farmers. She called for the need to revisit existing agricultural strategies to ensure that they are aligned with current realities and the changing demands of the market.

Kariuki stressed the importance of research in driving innovation and sustainability in agriculture, noting that effective agricultural practices must be evidence-based. "We need to ensure that research informs our strategies and that we leverage the latest innovations to enhance productivity," she urged.

> "We must utilize our collective strengths and work towards making our agricultural landscape more resilient and productive."

Additionally, Kariuki pointed out that the integration of technology in agriculture could play a transformative role, enhancing efficiency and output.

Ms. Agatha Thuo CEO, ASNET

Addressing Financial Gaps

The challenge of financing within the agricultural sector was a recurring theme throughout the summit. Andrew McCown, a coordinator for Kenya and East Africa with USAID, addressed the financing gap that many agricultural SMEs face. He noted that while agriculture is a critical driver of the economy, funding and investment in the sector remain disproportionately low. "Only 2% to 3% of the national budget is allocated to agriculture, which is far below the 10% target we aspire to," McCown stated, adding that this lack of funding hampers the sector's ability to innovate and compete on both regional and global scales.

McCown highlighted the statistics indicating that around three-quarters of agricultural SMEs struggle to access financial resources. He pointed to the need for a more robust financing framework that allows farmers and agricultural businesses to access the necessary funds to grow and thrive. He advocated for a multi-faceted approach that includes not just government intervention but also partnerships with the private sector

and development partners to address this critical issue. “It cannot be the responsibility of the government alone; we all must play our part in filling this financing gap,” he emphasized.

The Role of Research and Development

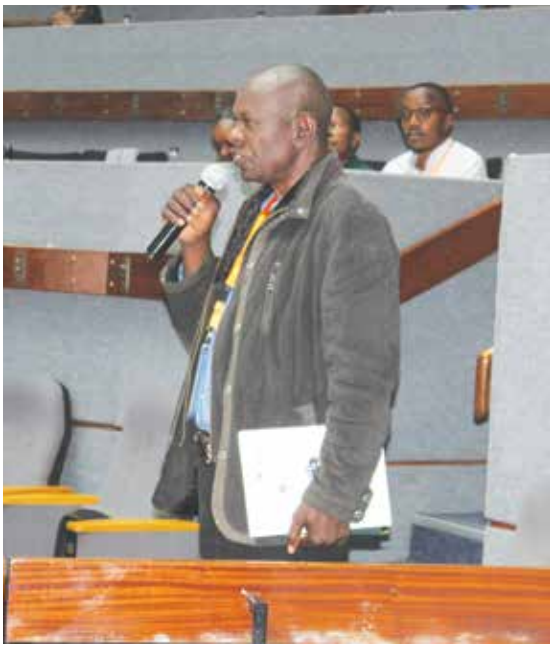
The summit also featured discussions on the role of research in agriculture, a topic eloquently addressed by Daniel Gunther, a representative of the German government and one of ASNET’s key supporters. Gunther emphasized that research must connect effectively with the needs of the agricultural sector. He expressed concern that much of the research conducted does not make it to the ground where it can benefit farmers. “We need to bridge the gap between research and practical application,” Gunther articulated, advocating for collaborative efforts between agricultural research institutions and private sector actors.

One of the significant challenges noted was the often-cited concern that research findings tend to “sit on the shelf” instead of being applied in the field. Gunther urged conference participants to work on establishing mechanisms that allow for the translation of research outcomes into actionable strategies and practices that farmers can adopt. “Creating that connection is critical for driving forward sustainable agriculture,” he stated.

A Call for Cooperation

Throughout the summit, a strong call for cooperation among all stakeholders was evident. Vimal Shah, a trustee of ASNET and the chairman, BIDCO Africa, reinforced this narrative by highlighting that successful agriculture involves a collective effort from various sectors. He stated that agriculture is a complex ecosystem comprised of multiple players, including farmers, financiers, researchers, and government officials. Shah encouraged all participants to foster partnerships across these different sectors to drive innovation and sustainable practices effectively. “We cannot afford to work in silos; our challenges are interconnected, and our solutions must be as well,” he noted.

As the discussions progressed, participants engaged in breakout sessions designed to formulate concrete action plans. These sessions aimed to identify specific steps that stakeholders could take to improve the agricultural ecosystem and facilitate sustainable practices. The objective was to develop a diversified action plan that everyone could commit to, creating a roadmap towards implementation.



One of the attendees taking part in the discussion

> “We need to ensure that research informs our strategies and that we leverage the latest innovations to enhance productivity.”

As the summit concluded, the collective sentiment was one of optimism and determination. The dialogue initiated during these sessions set the foundation for ongoing collaboration among all involved parties. The commitment expressed by participants to make action plans truly actionable; divisible into component pieces that different actors could take responsibility for was seen as a significant step toward addressing the pressing issues in Kenyan agriculture. Furthermore, there was a consensus that the agricultural sector’s future hinges on the strength of partnerships across government, private sector, academic institutions, and development partners. The need for a cohesive strategy that incorporates research, innovative financing, and actionable policy frameworks was clear.

In his remarks, CS Karanja reiterated the government’s commitment to supporting the agricultural sector and emphasized that the time for action is now. “We must utilize our collective strengths and work towards making our agricultural landscape more resilient and productive,” he concluded. With comprehensive discussions on sustainability, innovation, and competitiveness, the summit marked a significant step forward in shaping the future of agriculture in Kenya and positioning it as a leader in the region.

PICTORIAL: THE 4TH NATIONAL AGRICULTURE SUMMIT

ADC Pioneering Climate-Smart Seed Solutions

By Victor Okeyo

Food security in Kenya is at the forefront of government policies as the country grapples with the effects of climate change and environmental degradation. Consequently, innovation and developing sustainable practices are championed by the Ministry of Agriculture through the Agricultural Development Corporation (ADC).

ADC plays a critical role in ensuring the availability of high-quality certified seeds for both crops and livestock, positioning itself as a key player in the country's agricultural backbone. Nicholas Kiplagat, ADC's marketing officer, shares insights into the organization's operations and its vital contribution to Kenya's agricultural landscape.

ADC products well-d;isplayed during the 4th National Agriculture Summit

ADC's Core Mandate: Seeds of Sustainability

"At ADC, we specialize in the production of certified, quality seeds," Kiplagat says. "From seed maize and beans to grass, wheat, sunflower, pyrethrum, citrus, and even sugar cane, our primary mission is to offer farmers the best foundation for a bountiful harvest."

With over 70% of ADC's operations concentrated in Kitale, a region known for its fertile soils and favorable climate, the corporation produces vast quantities of seeds crucial for Kenya's food security.

ADC Stand during the Nairobi International Trade Fair

However, ADC's reach extends far beyond Kitale. The corporation operates in diverse regions, from Tana River to Kilifi, Malindi, Nakuru, and Nanyuki. Their work also includes ranching, and blending livestock with wildlife conservation in the Mutara and Galana ranches.

"Our key mandate is to ensure food security in the country. We do that by providing the main ingredient—seeds. Once these seeds are multiplied by farmers, we have an abundance for everyone," Kiplagat emphasizes.

Climate-Smart Solutions for a Changing World

With the increasing threat of climate change, many farmers face growing uncertainty regarding the viability of their crops. ADC has taken significant steps to provide climate-smart solutions. "Most of the seeds we offer have been meticulously researched and are adapted to specific regions' climatic conditions," Kiplagat explains. For instance, ADC

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has developed drought-resistant seed varieties such as the ADC-52A maize, commercially known as Kiboko, which thrives in areas receiving less than 1500mm of annual rainfall.

"It's designed for regions like Kitui, Makueni, or lake-adjacent areas that have limited rainfall. It matures within five months, requires minimal rain, and is resistant to maize diseases like rust," Kiplagat adds.

Collaboration with the Private Sector

While ADC is a government institution, its relationship with the private sector is far from competitive. Collaboration is at the heart of its mission. "The private sector is more involved in secondary agricultural activities—packaging, processing, and distribution," Kiplagat says. "For us, we are in the primary business of seed production. However, we collaborate with private institutions, especially in vast networks and resources of private companies for better distribution and scaling.

ADC Seeds

A Focus on Oil Crops and Emerging Markets

As global demand for cooking oils rises, ADC is diversifying its portfolio to meet local needs. Currently, ADC is producing certified seeds for crops such as sunflower and canola, key ingredients in the production of cooking oil. These efforts are part of a broader strategy to reduce Kenya's reliance on imported oils.

"In the next two or three years, we aim to cut down on the importation of oils by growing more oil-related crops. Our focus is on sunflower and canola for now," Kiplagat reveals. ADC also has plans to explore coconut farming in the coastal region, a crop highly suited for the area and crucial in oil production. "Coconut is part of our long-term strategy, especially in coastal areas where it grows well."

ADC Potato Seeds

Ranching and Irrigated Agriculture

The corporation also manages ranching activities in key areas like Galana and Mutara, where livestock coexists with wildlife. These ranches not only serve as hubs for livestock production but also as conservation areas.

"In Galana, we're exploring irrigated agriculture as part of our efforts to increase food production," Kiplagat notes. Oil crops, particularly those used in cooking oil production, are being targeted in this irrigated farming initiative, highlighting ADC's commitment to innovation and sustainability.

Food Security Through Diversification

Food security remains a pressing issue in Kenya, with periodic droughts and erratic weather patterns leading to crop failures and hunger in certain regions. Kiplagat encourages farmers to diversify.

"As much as you are investing in other sectors, agriculture should remain a priority," he advises. "Once we solve the basic need for food, we create excess income that can be reinvested in other ventures."

He also underscores the need for farmers to embrace agriculture at all levels, whether large or small-scale. "Agriculture doesn't mean you have to give up other pursuits. I am a farmer myself, yet I still hold a white-collar job. You can start small, even with a vegetable garden, and contribute to food security."

"Let's solve the basics first—food production through agriculture—and we'll have a strong foundation to build on for the future," Kiplagat says.

research and shared knowledge. Once we multiply the seeds, the private sector helps with distribution."

This public-private partnership ensures that the highest quality seeds are accessible to farmers across the country while leveraging the

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