

# THE POTATO

## MAGAZINE KENYA

Issue No. 1

September 2016

### The National Potato Council of Kenya

National Potato  
Conference  
and Trade Fair

Transforming Potato value chain for  
improved food security and Agribusiness

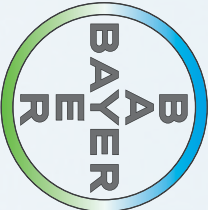
Potato's winning  
nutrient combination

Customer is  
the King

Potato Production  
in Kenya



# Bayer Potatoes Crop Protection Program



Disease	Product	Rate per 20 Ltrs Water	
Early Blight		40ml	
		40gms	
Late Blight		35ml	
Cut Worms		15ml	
		15ml	
Tuber Moth			
Foliar Fertilizer		35 - 50ml	

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## FOREWORD

In the recent past, potato (*Solanum tuberosum*) has been ranked the second most important food and cash crop after maize in Kenya, and its importance has continued to rise in the East African region. Contributing over Kshs 50 billion and providing livelihood to over 3.5 million Kenyans, the potato crop is one of the strategic enterprises that can play a great role towards the realization of Vision 2030, especially improving food security, reducing poverty and increasing household incomes.

For many years, the potato sub-sector has lacked adequate policy, institutional and budgetary support, leading to its dismal performance. This is compounded by a weak breeding programme, inadequate seed potato, lack of processing varieties, lack of information and low yields. Other challenges are lack of standards, poor marketing infrastructure, lack of policy guidelines and regulations, and unplanned and unco-ordinated activities. However, the creation of National Potato Council of Kenya, a public private partnership organization, has helped change the outlook of the subsector stimulating renewed interest and support from the government, development partners, investors, and other stakeholders.

To transform the sub-sector, initiatives aimed at improving production and use of certified seed, optimization of inputs, disease control, and improved storage and marketing are crucial. However, this change will only be possible if farmers adopt new ways of conducting business plus more investment in the software and hardware of agribusiness in the value chains of the sub-sector. Key support measures and initiatives that will stimulate the transformation include facilitation of flow of relevant information, creating information sharing and networking platforms and creating linkages and business-to-business forums. The National Potato Conference and Potato Magazine Kenya are viewed as important initiatives that will help realize the change.

This potato magazine, which is the first issue and the first of its kind, is a strategic initiative aimed at creating awareness about the activities of the sub-sector and help share the outcome of the workshop, trade fair and business-to-business sessions held at the March 31, 2016 National Potato Conference. This is a biannual magazine that will feature corporate profiles of businesses in the subsector, Industry news and events, research and development and other issues related to potato production, marketing, processing and consumption.

I would like to thank the SNV for supporting the development and distribution of this magazine. I also appreciate the technical and financial support from the State Department of Agriculture, GIZ, Kenya-Dutch seed potato project, ASDSP, SNV, Grow Africa, IFDC, CIP and Global communities for sponsoring the National Potato Conference, 2016 and supporting participation of the farmers. Many thanks also go to the organizing committee which included State Department of Agriculture, Kenya-Dutch seed potato project, Agri PROFOCUS, Global communities, CIP, UON, KALRO and NPCK's staff.

**Wachira Kaguongo**

**Chief Executive Officer,  
National Potato Council of Kenya**





# The National Potato Council of Kenya



**National Potato Council of Kenya Staff**

**T**he National Potato Council of Kenya (NPCK) is a Public Private Partnership that help to revitalize and develop a self-regulating potato sub-sector by engaging and educating industry stakeholders, advocating and lobbying for regulatory standards, and providing a platform for negotiation and conflict resolution. The Council is strategically placed to serve as a catalyst, organizer, and co-ordinator for its members, thereby improve the livelihoods of farmers, help grow the economy, and enhance food security in Kenya.

The co-operation in promoting, protecting, and co-ordinating the activities of the potato sub-sector started in 2003. This involved all stakeholders engaging in activities geared towards developing the sub-sector. These activities were mostly targeting the potato value chain (VC) mapping and interventions at policy, farm, research and marketing levels of the potato industry. Despite these good efforts by stakeholders in their disjointed form, there developed a need for an organization/institution to coordinate the implementation of the many identified interventions, and further foster ownership and service development for

the potato sub-sector. The consultative process remained consistent, and implementation of a number of key activities steered by the Ministry of Agriculture working in collaboration with GTZ/PSDA and other stakeholders continued.

Key outputs from this stakeholders' platform included development of a Draft National Potato Policy; setting of the standards for potato sub-sector, for example, weight of a bag of potatoes set at 110kgs, initiation and gazetting of Legal Notice No. 44 of May 2005 that supports the standardization of the potato production, marketing and processing. During this period, a number of exchange visits and meetings were carried out between different players in the potato sub-sector to identify and fix problems in the sub-sector with a view to strengthening the sub-sector. The climax of these consultations was the Potato Value Chain stakeholders' workshop held at the Kenya School of Monetary Studies in March 2010. An interim NPCK was formed as a coordinating body of all the potato value chain stakeholders in the country.

The National Potato Council of Kenya was registered as a company limited by guarantee and incorporated under the Companies Act

Cap 486 Laws of Kenya in August 2010. With GTZ/PSDA's support, it was launched on the November 25, 2010 at a well-attended ceremony at KEPHIS headquarters. The Council was honoured to have the Permanent Secretary for the Ministry of Agriculture to represent the Minister for Agriculture, who was the chief guest of the ceremony. The Council has experienced a lot of goodwill from the government, private sector, public and other development partners.

The role of NPCK in the agricultural industry is to promote, protect and coordinate the potato subsector towards improved livelihoods.

The Council has no share capital but the shareholder members act as the guarantors of the company with their roles and responsibilities as stipulated in the Memorandum and Articles of Association. The Council has locus standi as a registered entity, recognition from the government and other entities, and can freely operate within its mandate. The Council plans to write a Code of Conduct to help regulate the sub-sector. The Council limits its membership to stakeholders linked to potato production, processing, marketing, and certain service providers and regulators (**see [www.npck.org](http://www.npck.org) for details on membership application**).

## Vision Statement

Potato industry is a leading contributor to increased incomes, food security, and improved welfare in Kenya.

## Mission Statement

Coordinate potato sub-sector stakeholders towards development of potato industry's profitability and livelihoods improvement.

## Strategic Objectives/ Aims

The NPCK Strategic Plan is anchored to six objectives:

1. To contribute in creating an enabling environment for effective and efficient potato value chains for growth and development of a self-regulating potato industry.
2. To help build a cohesive potato industry in order to promote synergies and minimize duplication for efficient use of resources through enhanced public private partnership
3. To promote best practices for quality standards, improved yields and enhanced value addition in order to thrive in local, regional, and global markets.
4. To create a platform for information management and capacity building for the various potato value chain actors.
5. To mobilize and effectively manage resources for the growth and stability of the organization and prosperity of the industry.
6. To identify and mainstream crosscutting and emerging issues within the potato industry.

## NPCK Achievements

Since inception, NPCK has undertaken several initiatives informed by:

- Recommendations of Task Force Report of 2008
- Findings from a stakeholders roundtable meeting held in 2012
- Emerging sub-sector issues
- Support from donors and partners

The following are NPCK's achievements since inception

1. Spearheading implementation of Seed Potato Master Plan that gives a roadmap on how to develop the seed potato value chain.
2. Co-ordinated development of a policy document called Policymakers' Guide to Crop Diversification: The Case of the Potato in Kenya.
3. Spearheaded a project for enhancement of adoption of harmonized regional seed standards for East and Central Africa Countries- to promote seamless seed trade across the region.
4. Produced and distributed two Potato variety catalogues-2013 edition (3,000 copies), and 2015 edition (6,000 copies)
5. Provided platform for information sharing, engagement and interrogation of subsector issues such as:
  - Follow-up and monitoring of emerging diseases
6. NPCK has been a reference point for many stakeholders
7. Market linkage between farmers and processors
8. Held the first National Potato conference and Trade fair 2016
9. Successfully lobbied together with partners for:
  - Inclusion of farmer selected variety called Shangi into formal certification scheme
  - Gazettement of public notice on maximum 50 kg potato packaging and pricing by weight
  - Increased budgetary allocation to potato sub-sector by the government in the last five years from less than Kshs 5 million to Kshs 63 million in 2016
  - Use of confirmatory tests using PCR to test for Bacterial wilt by regulatory agent
  - Law and implementation of accreditation/ authorization of seed certification

## Projects and studies which NPCK has undertaken since inception

Project/ Initiative	Donor/ funding partners
Promote growth and profitability through creation of strategic linkages between operators in the industry	GIZ-PSDA
Training on seed potato production, greenhouse production and agribusiness	NYS
Construction of 3 Aeroponics for minituber production	NYS
Development of policy guidelines for decision makers at national and local levels	FAO
African Potato Association-9th Triennial Conference (Co-hosted by CIP, MoALF and NPCK)	Multiple donors
Development of Potato Variety Catalogue	IFDC, Syngenta, CIP Kenya- Dutch seed project
Up scaling innovations for quality seed potato production in Eastern and Central Africa	ASARECA
Enhancing adoption of harmonized seed standards, regulations and procedures in eastern and central Africa	ASARECA
Market Survey on ready-cut frozen chips and potatoes for processing into and crisps	KAVES-USAID
Determination of Economics of a potato Model farm	Agri-Benchmark

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## NPCK Board Members



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Member



**Ms. Emily Opiyo,**  
Member



# National potato conference and trade fair



**The conference was sponsored by stakeholders and development partners who included State department of Agriculture, GIZ, Kenya-Dutch seed potato project, KALRO, ASDSP, Grow Africa, IFDC, SNV, CIP, Global communities and. The conference was attended by over 600 actors and stakeholders such as farmer representatives from all potato producing counties in Kenya**

**Mr. Wachira Kaguongo, CEO**

## Introduction

**T**he potato is the second most important food and cash crop after maize in Kenya. It goes without saying that the potato occupies a prime position in terms of contribution to food security, poverty eradication, and economic development.

It is grown by about 800,000 smallholder farmers, employs 2.7 million actors along the marketing channels, and contributes over Kshs 50 billion to the economy. The sub-sector's significance is seen in its great potential to further contribute to improved wealth and food security for the country; what with its productivity levels (less than 10 tonnes per hectare vis-a-vis 40 tons/ha achievable under

recommended agronomic practices), coupled with the increasing demand for potato due to expanding cities.

The National Potato Council of Kenya (NPCK), a multi-stakeholder public-private partnership (PPP) organization, whose main mandate is to organize and coordinate the activities of the potato subsector, has been undertaking initiatives aimed at transforming it. Among the strategic objectives, is creating forums for information sharing, showcasing and enabling business to business interactions. It is for this reason that NPCK organized the first ever National Potato Conference and Trade Fair on March 31, 2016 at the Kenya Agricultural & Livestock

Research Organization headquarters in Loresho in Nairobi.

The conference was sponsored by stakeholders and development partners who included State department of Agriculture, GIZ, Kenya-Dutch seed potato project, KALRO, ASDSP, Grow Africa, IFDC, SNV, CIP, Global communities and. The conference was attended by over 600 actors and stakeholders such as farmer representatives from all potato producing counties in Kenya and farmer representative from neighbouring countries such as Tanzania, Uganda, and Rwanda. Development partners and potential investors from Europe and US also attended the meeting.



Potato field at flowering stage

## Objectives of the Conference and trade fair

The conference was a platform not just for sharing information on potato value chain, technologies and innovations but also for the exhibitors to display their products and market their services. At the forum, emerging investors in agriculture such as processors, financial institutions and insurance companies had the perfect opportunity to interact with industry players – farmers, traders, processors, regulators – and discuss business with a view to improving and increasing their portfolios.

## The theme of the conference and trade fair

### Transforming Potato Value Chains for Improved Food Security and Agri businesses

#### Main objectives were:

1. To showcase business opportunities for the investors and facilitate business to business linkages
2. To share information on potato value chain issues, technologies and innovations
3. To enable exhibitors in the sector to display their products and services

The Conference used a pragmatic approach and aimed at addressing specific questions in the industry for purposes of improving businesses for actors and players.

#### There were four thematic areas for the conference under which action plans were discussed:

##### 1. Production:

How do we improve production? (Suitable fertilizer, small-scale mechanization etc)

##### 2. Seed systems and variety development:

How do we improve production and distribution of high quality seed potato?

##### 3. Marketing and processing:

How do we improve potato marketing and processing? (Post-harvest handling, storage, consumption, linkages, contract farming etc)

##### 4. Policy and regulatory framework:

How can the regulation on 50kg packing bag be implemented? How do we go about other regulations?

## Customer is the King

MS. JANE KAMAU

SNV

The customer is king, so goes the saying. But take a moment and reflect on the same with the potato sub-sector in mind. Who really is our customer?

Depending on where one is in the potato value chain, the customer may differ but ultimately the customer is the one who pays to consume the offering. Hence a seed potato company may view the ware potato grower as the customer while the ware potato grower may view the buyer/ broker as the customer. But ultimately, the ware potato end user is the customer who keeps the wheel of the value chain rolling.

Kate Zabriskie once said 'The customer's perception is your reality'. In our case, the customers' perception should be the driving force. Is this really the case?

In the recent past, leading international fast food chains as well as supermarkets have made a grand entry into Kenya. Similarly, local chains have gone out on expansion and refurbishment sprees. This equally points to the fast growing and changing consumer tastes and preferences. The customer is more discerning than ever before, better informed and experienced. These customers know what better tasting and looking French fries or crisps look like and they are demanding the same. However, the response by the potato sub-sector in Kenya has been slow. To their credit, and for their interest, the fast food outlets have gone the extra mile to meet customer demands, leading to the recent rise in the volume of imported pre-cut chips and crisps brands.

True to Bill Gates' observation that, "Your most unhappy customers are your greatest source of learning," the potato value chain players in Kenya need to engage more with the customers so as to gain a clearer understanding of the real issues and determine what each of the players should be doing.

That customer experience is the next competitive battleground is not in doubt.



# Potato growing in the devolved units

## Nyandarua County;

## The County of milk and potatoes



From one of the European potato conferences, it was discovered that there are technologies that can be customized for our small-scale farmers. There are even equipment that can be used on half an acre, alleviating labour challenges especially at peak growing seasons

### MS. AGATHA THUO

County Executive Committee Member in-charge of Agriculture livestock and Fisheries, Nyandarua County

**N**yandarua is not called the county of milk and potatoes for nothing: Here, potato is a very important crop, highly nutritious in terms of calories, high yielding per unit area and time, and has a positive gross margin compared with maize. Apart from the local varieties, Nyandarua has introduced others, including Caruso, Jelly, Rudolf and Destiny, which are targeting other market segments. The varieties have shown positive attributes.

#### The main challenges highlighted cut across all potato-growing counties and include:

- o High cost of inputs: Seed potato, fertilizers

and agro chemicals. The government subsidized fertilizer (a 50kg bag sells at Ksh 1800) is not adequate hence not accessible by most farmers.

- o One acre of land needs 16-20 bags of seed, which goes for Ksh 3000 per 50kg bag is way beyond the small-scale farmers.
- o Marketing, especially the implementation of 50kg packaging standard is still a challenge and the case on its implementation is still in court
- o Irrigation and value addition is still limited.
- o Consumer preference makes production planning tricky.

From one of the European potato conferences, it was discovered that there are technologies that can be customized for our small-scale farmers. There are even equipment that can be used on half an acre, alleviating labour challenges especially at peak growing seasons.

The county has put up cold stores in a bid to solve potato storage.

In conclusion, shortage of potatoes can cause a food crisis in Kenya, especially with the Maize Lethal Necrosis Disease (MLND) which has affected maize, a major food crop in the country.

# Potato subsector and business environment

**Water harvesting needs to be incorporated in any production system to ensure consistent supply of quality food. For one to implement an irrigation system and modernize agriculture, they need credit facilities (loans). But bankers should be able to do an environmental impact assessment (EIA) for any venture before giving out loans**



**MR. KIMANI RUGENDO**  
Director, KEVIAN Company Ltd

**B**efore getting into any business, it is prudent to write down all the ideas, either big or small, analyse the situation and come up with resolutions to implement the ideas. After thorough analysis, the idea should be implemented immediately lest it becomes time-barred, or even obsolete.

There could not have been a better person to talk about the private sector involvement in potato trade like Mr. Rugendo for Kevian Company once ventured into potato processing but had to beat a hasty retreat as there was no guarantee of regular supply of ware potato and reasonable pricing.

Mr. Rugendo reiterated that for the potato sub-sector to thrive, issues of seed potato

and storage should be handled first before any conversation on processing.

According to Mr. Rugendo, businesses exist to make profit, hence the supply chain has to be maintained. In this case, quality seed and storage, must be looked into before allowing a third pillar, processors, to come in.

Water harvesting needs to be incorporated in any production system to ensure consistent supply of quality food. For one to implement an irrigation system and modernize agriculture, they need credit facilities (loans). But bankers should be able to do an environmental impact assessment (EIA) for any venture before giving out loans to ascertain whether issues of water pollution, waste management,

afforestation (environmental conservation and sustainability) have been incorporated into the business plan before giving out the loans.

Mr. Rugendo urged farmers to invest in quality seed potato to improve productivity and hence be able to supply quality potatoes. Stakeholders/partners are willing to help farmers where they are operating but farmers need to take advantage of that help. NPCK should be part of the coordinating team for sustainability.

Why should fast food restaurants be importing potato from neighbouring countries yet farmers have requisite resources to produce potato for these consumers? That was the question to participants.



# Official opening of the Conference and launching of the National potato strategy



**Several initiatives have been embarked on to address the bottlenecks, including increased number of seed producers, over 30 newly released varieties, production of fertilizers and pesticides. However, processors continue to operate below their capacity as most farmers are still unaware of these developments**

## **MR. JOHNSON IRUNGU**

Director, Crop Resources, Agribusiness and Market Development Directorate, MoALF

**D**r. Richard Leresian Lesiyampe, PhD, CBS, Principal Secretary, State Department of Agriculture, who was expected to officially open the conference could not make it and was represented by Dr Johnson Irungu, Director, Crop Resources, Agribusiness and Market Development Directorate.

The PS appreciated the renewed energy and support the State Department of Agriculture is providing to the potato sub-sector. He also appreciated the Potato Council and other stakeholders' effort in helping organize and coordinate the activities of the potato sub-sector, which is faced with several bottlenecks, including low productivity and inadequate use of high quality seed of suitable varieties.

Several initiatives have been embarked on

to address the bottlenecks, including increased number of seed producers, over 30 newly released varieties, production of fertilizers and pesticides. However, processors continue to operate below their capacity as most farmers are still unaware of these developments. The PS noted that this would change with the National Potato Conference and Trade Fair. Shortcomings in the subsector the hinder expansion of business opportunities for the entrepreneurs should be discussed and possible solutions sort.

Most importantly, the conference should provide a forum for discussion of key action points to address the bottlenecks in the subsector and provide specific solutions on how best to:

- Improve potato productivity.
- Improve production and distribution

of high quality seed potato and new varieties.

- Improve potato marketing, processing and storage.
- How can the regulation on 50kg bag be implemented.

Participants in the conference were asked to propose solutions for the key priority bottlenecks and highlight what roles should be played by which institutions/ actors/ stakeholders in addressing the bottlenecks. Emphasis should be on the need for responsibilities, coordination, and teamwork between the National Potato Council of Kenya and other stakeholders in order to develop the potato sub-sector.

Having made his remarks, the PS declared the national potato conference and trade fair officially launched.

# The National potato strategy 2016-2020



## Launch of National potato strategy

Potato is emerging as one of the promising enterprises towards the realization of Kenya Vision 2030 objectives under the economic pillar because of its substantial contribution to food availability in the country. For this, potato requires attention both in terms of resources and long-term planning as provided for by the Draft National Root and Tuber Crops Policy.

The National Potato Development Strategy has been developed to address the growth and development of the potato industry. This strategy is aligned to Kenya Vision 2030, the economic blueprint for the country's development. It is also aligned to

the Agriculture Sector Development Strategy (ASDS) 2010 -2020, the Ministry's Strategic Plan 2013-2017 and the Draft Agricultural Policy, 2015.

### **The potato strategy focuses on seven strategic objectives, namely;**

- a. Strengthen institutional, legal and regulatory framework.
- b. Promote variety development and seed production.
- c. Enhance research in the potato industry.
- d. Increased potato production.
- e. Improve post-harvest handling, value addition and marketing.
- f. Promote public -private partnerships in

- the potato industry development.
- g. Improve funding to the potato industry.

The strategy will harmonize the activities of the different stakeholders and capitalize on their synergies and complementarities. The implementation of this strategy will require concerted efforts by all stakeholders to translate the objectives into actions with specific outcomes. Issues that may emerge in the course of its implementation will be reviewed continuously.

**Visit [www.npck.org](http://www.npck.org) for the full version of the strategy**



# Welcome remarks



**Networking was in full steam in the business-to-business match making session, where several deals were struck between farmers and other service providers. There were discussions in which farmers interacted freely with input providers, and were informed of what was new in the market while their questions were answered.**

## **DR. LUSIKE WASILWA**

Director of Crop Systems, KALRO Secretariat

**D**r. Lusike Wasilwa welcomed participants to KALRO headquarters. She reiterated that in 2008, the UN selected potato as one of the major crops that will feed the world's population in the future, stressing its importance not just nationally, but worldwide. Farmers were challenged to look for markets beyond Kenya but they have to invest in good seed and improve on their husbandry to increase on their productivity.

While Dr. Johnson Irungu, officially opened the conference and launched the National Potato Strategy 2016-2020 – an impetus to the industry in the realization of Vision

2030 objective of reducing hunger, poverty and increasing households' incomes, Hon Agatha Thuo, CEC, MOAL&F, Nyandarua County, enlightened participants on potato growing in the devolved units.

Going by the theme of the conference, Mr. Kimani Rugendo of Kevian, speaking on behalf of the private sector, emphasized the need to have a conducive environment for potato businesses to thrive.

The National Potato Strategy, 2016-2020, is an impetus to the industry in the realization of Vision 2030 objective of reducing hunger, poverty and increasing households' incomes.

Networking was in full steam in the

business-to-business match making session, where several deals were struck between farmers and other service providers. There were discussions in which farmers interacted freely with input providers, and were informed of what was new in the market while their questions were answered. At the exhibition area, 18 exhibitors in the sub-sector showcased their products and services to the participants.

Finally, Mr. Wachira indicated that, being the first of its kind, there are lessons that have been learnt that will help improve on similar future events. He indicated that plans are also under way to hold similar conferences in the counties.

# Conference thematic areas

## Potato production Session



### MRS. GLADYS MAINGI

Potato specialist

According to Mrs. Maingi, good production is highly dependent on good husbandry practices. However, production is currently low with most farmers getting less than 10 tonnes per hectare while the national potential is 40 tonnes/ha. Practices that cause low productivity in potato production are:

1. Poor methods of land preparation by farmers. They plant on poorly prepared seed bed, with big clogs of soil and, therefore, too difficult for even rows, resulting in poor plant population. Farmers also prepare and plant between shallow ridges.
2. Use of poor quality planting materials. About 96% of the farmers use low quality seed. They use own saved seed or seed bought from neighbours or from the market. Many use charts, mix varieties or diseased materials.

3. Use of other farm inputs. Farmers use low fertilizer rates, plant without fertilizer, overuse DAP resulting in increased soil acid. Some farmers apply planting fertilizer as top dressing.
4. Misuse of pesticides. Farmers underdose or overdose crop protection chemicals, fail to follow the spraying calendar or do not spray at all.
5. Huge gap in pest and diseases management. Due to over use of recycled seed there is accumulation of viral and bacterial diseases, with bacterial wilt as the main cause of heavy losses amounting sometimes to 100% loss. There are also fungal infections.
6. Poor flow of information to farmers. Dissemination of information, including research findings to farmers, is very slow, thus contributing to wrong practices by farmers.

### Two key challenges and proposed action and responsibility

Challenge: High cost of inputs, and inadequate financial services: It is a great concern because it

leads to use of less than required rates of inputs and poor quality seeds.

### Proposed Action:

- The Government of Kenya to look into issues of input subsidies in seed potato production.
- NPCK should help link farmers to providers of financial services.

Challenge: Huge gap in disease and pest management: Farmers complain of huge losses incurred due to diseases and pests, which they are unable to control.

Proposed Action: research institutions to research on ways of tackling bacterial wilt and viral diseases

### Panel Discussions: Comments, Questions and Answers

### Extension services

- Extension services are weak
- Research-Extension linkages are weak
- Farmers were encouraged to invest in extension services, eg pay 20cts per kg of produce
- Extension service providers are few
  - ❑ There are crop clinics in some counties, where farmers are advised on proper husbandry.
  - ❑ Farmers to look for extension officers just as livestock farmers look for veterinary doctors.

### Other issues:

- Bacterial wilt
- Availability of certified seed
- Small land sizes
- Dependence on rain-fed agriculture

### Action to be taken

- Agriculture should be awakened since less is happening on the ground. Available technologies are not being passed to farmers.
- Potato is a seasonal crop and is planted continually hence difficult for banks to give loans.
- Farmers need to change their attitude and learn new technologies and use them.



- Crop rotation should be encouraged.
- Companies from Kenya were encouraged to sell quality seed potato to Tanzania. A participant from Tanzania had commended that farmers engage in side selling to escape loan repayment which they obtained to enable them buy inputs
- Soil sampling should be enhanced

#### **Reaction from Harrison Kiogora (Family Bank)**

- Agriculture is considered a high risky business. But if the farmers know the crop cycle and issues surrounding that then a product can be formulated along those issues
- Repayment can be done after harvesting
- Cost of finance for farmers' loans is low. Farmers did not agree. It was mentioned that banks keep indicating that there is Kilimo Biashara loans but when one goes to apply they are told there is no money.
- Farmers need to be in groups or cooperatives for group borrowing. Potato farmers should borrow from what other value chain players are doing to enhance their productivity



**Sprouted seed potato**

**Action area 1:  
Extension services should  
be improved at the  
county level**

## **Seed systems and variety development session**



**MS. NANCY NG'ANG'A**

Research Scientist (Agricultural Economist) KALRO

One of the biggest challenges facing the potato sector is inadequate quality seed of the varieties that are popular with farmers. The certified seed produced by Kenyan seed companies is not sufficient as national demand is estimated at 100,000 tonnes per year against a supply of only about 5,000 tonnes. The major reason for this shortfall is that Kalro-Tigoni, which is the public organization mandated to produce basic seed to be multiplied in the field and produce certified seed, is only able to produce 300 tonnes annually against the country requirement of 1,000 tonnes.

The consequence of having shortage of certified seed is the use of farm-saved seeds by over 90% of all potato farmers in the country. There are several seed companies trying to meet the country's demand for certified seed but still experience some constrain in production. The companies have production sites in only a few counties (Meru, Kiambu, and Nakuru) and tend to produce seed under rain-fed conditions, which means that seeds are only available at certain times of the year (March/April & Sept/Oct) in

few locations. Reliance on rainfall means that climate change and the challenges associated with it hamper seed production. Production is further limited by the fact that even though there are over 50 officially released varieties, only a handful are popular with farmers while the uptake of new varieties tends to be a slow process. Companies seeking to produce popular varieties have to contend with the challenges of different varieties being popular in different regions, making it difficult to estimate seasonal demand for each region. This results to unsold seeds which have to be preserved until the subsequent season. Additionally, seed potato is bulky which makes the cost of transporting the seed from the producing area to farmers' fields very expensive, especially in instances where farmers are only buying one or two bags of 50 kg.

In the certification of the seed, producers grapple with limited capacity of the national certifying organization (KEPHIS) especially at peak season, when services are critical. The result is delay in certification process, which is time-sensitive and farmers who are ready to plant will tend to seek an alternative source if

the certified seed they need is not available. On the other hand, variety choice has been driven principally by home or fresh use since over 70% of the potatoes produced are sold as fresh produce with processing now growing in importance.

Information on the variety availability, cost and location during the year is not readily obtainable from the seed multipliers to help farmers source the seed variety that they require. For example, “Shangi” is the most popular variety but its demand outstrips supply. Unfortunately, it has only been recently released and seed multipliers are not selling Shangi certified seed since they are building up their own stocks. Other newly released varieties have relatively lower demand that necessitates the companies to aggressively market their seeds along the value chain.

A possible solution to the disconnect between varieties demanded and those supplied is to strengthen collaboration between the public and private sector so that they can complement each other to produce the varieties demanded and to build demand for the less popular varieties.

## Panel Discussions: Comments, Questions and Answers

Mr. Oded Kunik from Syngenta Company informed participants that they are working with Kijabe farm, Charvi farm and breeder Europlant to ensure seed potato is available. They are all out to help the farmer to access quality seed varieties which will in turn translate to good returns to investment. He informed a participant that coming up with a desired variety is not easy. The journey starts with the breeder, thinking of professional ways to come up with a variety all the way to importing and walking the journey with KEPHIS till the seed potato is available to the small-scale farmer.

To ensure continuous supply of seed potato, Agrico East Africa, a seed breeder and producer has 13 registered varieties – red, white and of different uses and are setting up cold stores in Menengai, Nakuru and Eldoret (in year 2017). Other equipment's are also being brought into the country to enhance seed potato multiplication and the project aims to provide farmers more access to certified seeds.

Kisima farm, a seed producer, has seed potato but not the variety that farmers



**Dr. Margaret Muchui, Centre Director of KALRO Tigon contributing to discussions**

demand. It is becoming difficult to meet farmers' demands because of varied reasons such as, conflict in timings, farmers demanding different variety every season. Moreover, Kisima farm takes time to produce seeds in bulk which results in delay to release the seeds to farmers.

Mr. Elly of CIP reiterated that the main disconnect between seed producers and farmers arise mainly because of the day to day change in seed preference by farmers and that certified seed is expensive hence most farmers don't see the value of buying it. Thus, farmers end up using the local, unclean seeds – despite the risk of diseases – with the aftermath being poor production. Farmers are encouraged to adopt seed plot concept while multipliers work on increasing available seeds.

## Reactions

Lack of prior planning by farmers influences inadequate quantities of certified seeds available. Therefore, farmers should always be abreast of the next season's planting requirements and avoid getting seeds on demand. By planning early, both the seed producers and farmers adequately prepare to meet each other's needs. For example, a group in Meru with 864 women directed by Clara

Kathurima benefits a lot from early planning. However they face challenges deciding which types of fertilizers they need to use on their soil, lack of adequate finances, what to produce for the market as well as the soil analysis to be done on their lands. Although farmers would be willing to plan as early as they can, most of them cannot do so because they require a professional to guide them.

Farmers from Njambini cannot access certified seeds because KALRO Njambini produces high volumes of basic seeds that are sold to respective seed multipliers and not to farmers because it would cost a lot due to the high quality of the seeds.

Farmers need to be trained on how to check if the seeds are certified and were advised to check for the KEPHIS Label

Decentralized seed multiplication approaches should be enhanced. Seed producers should liaise with both the farmers and processors in order to understand their needs and demands as well as set up more multiplication sites in different counties in order to increase seed accessibility.

There should be a well- established communication center that will capture information in the potato subsector and disseminate it to all actors in the potato value chain.



## Action area 2: Improve farmers planning

Farmers are not able to plan for the coming season. They should learn to place orders with seed potato multipliers 4-5 months in advance and also be able to finance for the following:

- Soil analysis
- Fertilizer use
- Purchase of high quality seeds
- Linkages to a specific market

## Action area 3: Improve communication and networking along the potato value chains

There is need to have a communication center to relay information to all stakeholders on what is happening in the sub sector

## Action area 4: Improve production, identification and distribution of certified seed

The co-operative movement could enhance seed distribution system. In Uganda, seed has to be certified by a certification agent before it is sold to farmers. There is a collaborative Kenya-Uganda project on increasing availability of seed to farmers. Agrico EA is also in Uganda but indicated that use of minitubers is currently a bit expensive and takes time. There is the need to update NPCK with information on available seed by all multipliers for ease of dissemination to the farmers.

Kisima farm charge courier services for farmers who require one to two bags of 50kgs, but the services are cheaper as compared to the cost incurred by the farmer travelling to Timau to buy the seeds. However, Kisima farm delivers for free if the order is more than 200 bags of 50kgs.

Therefore there is business opportunity in seed multiplication and KALRO-Tigoni offers such kind of training to interested parties.







Potato initiative Africa (PIA) demonstration field

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	<b>Rudolph</b>	Midseason variety (±95 days)	A maincrop ware variety with an attractive red-skin, a good heat tolerance and a very high yield.

Agrico East Africa

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Offices at Baba Dogo Road, Ruaraka, Nairobi



# Marketing, storage and processing session



**DR. GEORGE OOKO**

Department of Food Science, Nutrition and Technology, University of Nairobi

## Key issue in marketing

Unstructured potato market:

- Lack of proper organization especially at producer level, hence unable to bargain for competitive prices.
- Farmers are sometimes at the mercy of traders who take produce at their own time and decide on choice of packaging.

**Solution:** Encourage and support organized farmer cooperatives

## Potato processing

- Major products: chips (French fries), pre-fried frozen French fries, crisps,
- Others: bhajias, chevda, flakes and potato sticks.
- A total of 36 crisps processors can be located through brands available- >80% small, many unbranded?
- The concept of fresh cuts (French fries) and chilled chips- innovation in the current processing industry.
- Dehydrated potato and starch are viable but unexploited.
- Processors rely on any available raw materials.

## Key issue

Consistency in supply and low quality of suitable raw potatoes.

- Affected by seed use, availability of suitable varieties, cultural practices – early harvesting.

- Limited financial resources for improved production

**Solution:** Partnership and collaboration: farmers, processors, extension services (NGO and counties) working with NPCK for sustainability.

- Encourage contract farming

## Key issue in storage

1. Low production that is seasonal-just enough for sale and use? Immediate cash needs.
2. No market incentives for stored produce (case of poor storage). Fresh immature as delicacy?

## Solution:

- Consider staggered production, increased irrigation.
- Consider capacity building: quality of stored potatoes, proper storage, staggered sales.
- Embrace long shelf-life products eg frozen chips becoming common, dehydrated potatoes.
- Collective structured marketing and bulking.



Packaged processed potatoes



## Panel discussions: Comments, questions, and answers

Mr. Humphrey Mburu, CEO of Sereni Fries, addressed the issue on unstructured markets and mentioned that for the past three years, he has been sourcing potatoes from Wakulima Market. He added further that this has its challenges, such as lack of accessibility to quality potatoes, or market standards e.g. size. Due to this, about 30% of these potatoes go to waste. Shangi, which is popular, has poor keeping quality

Ms. Wanjiku, a director of Gaea Foods, said that they do not get enough nor consistent quantities. She further commented that they don't buy potatoes in bulk because storage is a big issue due to lack of varieties that can survive for long periods.

Mr. Peter Francombe, Technical Director (Owner), Kenya Highlands Seeds said that half of the problems in marketing and storage are as a result of low production. He recommended setting up farm storage in times of consistent supply. He also said that some of the new varieties have 2 -3 months dormancy period. It is this reason that makes them survive extended periods under storage facilities. Francombe also pointed out that with proper storage, farmers get motivated to produce more and in turn everyone in the value chain gets to benefit.

### Reactions

Contract farming was proposed as one way to ensure consistent supply of produce to processors. While this model has been received warmly by some companies such as Sereni Fries, which is in contract farming with Kirimara Group in Meru, others have not yet adopted it. This model of agriculture has a broad range of benefits for both parties. For example, Sereni gets good quality potatoes that are of the right size as well as the particular variety on demand, not to mention that farmers also get good prices for their produce, especially because there are no middlemen involved.

Contract farming demands commitment from both parties. Gaea Foods has unsuccessfully tried contract farming for 17 years with the primary challenge being breach of contract. For example, when there is a rise in prices in the market, farmers would rather sell their produce to other buyers at a higher price than what was agreed upon in the contract. Prices of the potatoes is a two-sided risk,



**Ms. Wanjiku, Director of GAEA Food Processor during plenary session**

meaning if a processor decides on the price, it remains constant regardless of whether at the time of delivery the current price will be higher or lower. The cost of certified seeds is one of the leading factors in influencing farmer's decision into doing contract farming. A farmer may shy away from this model due to uncertainty in future prices. Initially there was no stipulation of which variety should be grown by the farmers so they would produce assuming all is well only to be informed that is not the right variety for processing. Farmers plant what grow well in their areas and not necessarily what the market wants.

For contract farming to work well, there is a need to bridge the gap between the farmers and processors. First, farmers need to involve the county governments at the grassroots level before getting involved in contract farming. This way, the Ministry of Agriculture, with the help of a legal advisor, will ensure that the law is enforced. Second, farmers need to liaise with seed producers early enough to avoid backward collaboration. These involvements will not only see to it that timelines for both parties are met at the right time but also bring on board a platform for both the farmers and producers to enjoy the incentives of contract farming.

The other issue that was pointed out was potato storage and measures that have been put in place to lessen the weight of this challenge. Depending on the use, there

are various storage sizes, from the expensive ones to the cheap. The counties could invest in large stores and charge a fee for storing potatoes (Business opportunity). With the main problem associated with storage being potato dormancy. Varieties such as Shangi have a low dormancy thus making it difficult to store them for long while new varieties have high dormancy thus may be retained for longer periods. Companies like Kisima Farm have adopted the air ventilation system and places like Bomet are now using the charcoal coolers storage systems. Large storage facilities cost lots of money to install and maintain and often require support from the government and counties while the charcoal coolers are simple and inexpensive thus making them the most convenient and easy methods to adopt.

### Action Area 5:

#### **Develop supporting mechanism for Contract farming**

National Government, county governments NPCK, AFFA, and other relevant stakeholder should work together to ensure contract farming works with clear regulatory and arbitration mechanism

#### **Action Area 6: Availability of effective web site to connect farmers, processors and other markets outlets**



# Policy and regulatory framework session

## **S**ubsector Challenges in Policy and Regulatory Framework

1. There is no regulatory framework to guide contract farming
2. The Ware house Receipting System(WRS) is highly informed by cereals and pulses subsectors hence root and tubers crops not adequately considered
3. Seed regulations currently in use are biased towards cereals and pulses
4. Despite the importance of potato as a food crop, it is not considered under the Fertilizer Subsidy Programme (the fertilizer available and used with maize is not suitable for potatoes)
5. There have been inadequate budgetary, institutional and policy, support for potato sub-sector
6. There is still no clear policy guideline on importation of seed potato and other potato tissues
7. There is rampant spread and existence of fake seed/ poor quality seed (farmer seed, clean seed- sold as certified seed)
8. Inadequate adoption, implementation and enforcement of potato strategy and legal frameworks
9. Inadequate implementation and enforcement of regulation on 50kg packaging bag and lack of incentives regarding packaging materials (jute or sisal bags for seed and ware potato)

### **Key Bottlenecks in Policy and Regulatory Framework**

1. Inadequate adoption, implementation and enforcement of potato strategy, regulatory and other legal frameworks.



**MS. VIOLET NYANDO**

General Manager, External Relation, Policy Lobby and Advocacy (KENAFF)

Draft policies & strategies that are not officially adopted:

- Draft Potato Policy of 2004
- Legal Notice No. 44 of 2005 on Potato Production and Marketing (standard packaging of 110Kgs, Seed and Marketing of Potato...)
- Seed Potato Master Plan of 2010 (adopted by stakeholders spear headed by NPCK)
- Draft Root and Tuber Policy 2010
- Recently, AFFA and Crops Acts, 2013 developed before the Overarching Agricultural Policy
- Potato Produce and Marketing Bill, 2014 (Rejected by National Assembly and needs revision)

### **Proposed solutions**

- Fast track the completion and implementation of the overarching agriculture policy
- Food Crops Directorate: facilitate and fast track development of crop based strategies

- Development of associated standards and regulations
- Clearly identify in the implementation matrix actors and their defined roles
- Funding support: government, private sector and other development partners

### **2. Inadequate implementation and enforcement of regulation on 50kg packaging bag**

- a. Existence of key regulations in two different Acts (AFFA Act No 13, Part VII, Section 42 on Measurement of Weights, requires that measures of weights be in kilogrammes and each single package shall not exceed weight of 50kg while the Crops Acts Part VII, Section 37, provides for the general penalties for contravening of any section of the Acts)
- b. Misinterpretation of the Act that support 50kg standards package by the court and sections of the value chain actors (current court injunction on 50 Kgs by traders)
- c. Disconnect and inadequate co-ordination between County and

National government regarding implementation of the regulation

- d. Lack of back up by-laws at county levels to support the National Acts and Regulations
- e. Inadequate incentive support to implement policies: Packaging, seed, post-harvest management, structured markets
- f. Conflicting regulatory instruments for County and National governments

#### Proposed solutions

- Gazettement of a legal notice harmonizing Crop and AFFA Acts and regulations regarding 50Kg packaging
- Formulation of by-laws at county levels to support implementation of the same
- Awareness creation and Involvement of relevant arms of the government (judiciary, executive and legislature)
- Creating awareness for all stakeholders and value chain actors for ease of implementation
- Provision of incentives to facilitate policy implementation
- Proper coordination between County and National government

#### Action point 7:

**Enhance Adoption on regulation of maximum 50kg packaging bag and pricing by weight and not volume**

Potato value chain starts at the research level and is connected by multiple links such that if one link is disconnected, the whole chain becomes unstable. To achieve an unbreakable chain, all actors in the value chain should work in close cooperation.

## Lobby for implementation of regulation on maximum 50kgs packaging bag and selling by weight



Ware potatoes in an extended bag awaiting collection, prior to 'jubilee bags'

#### Policy Lobby and Advocacy Department NPCK

The regulations and standards for potato production and marketing were developed and enacted under a Legal Notices 44 of 2005 of Ministry of Agriculture and Legal Notice 113 of 2008 of Local Government adoptive by-laws which indicated standard weight as 110kgs. The implementation of the legal notices did not bear fruits since it was faced by challenges such as lack of ownership, poor implementation plan, lack of coordination and conflicting interest by potato traders who never accepted the regulations.

The enactment of AFFA Act and Crops Act led to the nullification of the legal notice 44 of 2005 while after devolution, the legal notice 113 of local government ceased to apply. Currently, the law restricts selling of agricultural produce with any bag exceeding 50 kg and recommends pricing by weight (kg) as stipulated in the AFFA Act while Crops Acts stipulate the penalty for contravening the law. Various consultative meeting were held between NPCK, MoALF, County Executive Committees (CECs) in charge of agriculture in 13 major potato producing Counties, AFFA and other stakeholders to fast track implementation of regulation on packaging. These meetings culminated in gazettelement of a Public notice in 2014. The launch of implementation kicked off successfully in a number of Counties and farmers were very happy.

The implementation of this regulation however went into disarray after a few persons filed a case against the implementation of the law on maximum 50kgs packaging bag. The case is currently with Attorney General (AG) office and has been characterized by delays and apathy on the side government which is the accused. NPCK together with key stakeholders have been lobbying for development of a legal notice by the Cabinet Secretary in order to harmonize the provisions in the two Acts making it easy to implement. Furthermore, there is need to amend county financial bills in order to start charging Cess by weight instead of by bag which encourage packaging by extended bags. NPCK is continuing to lobby to fast track the case and implementation of the law in order to standardize potato marketing and adopt pricing by weight.

# Business to Business (B2B) match making session



**B2B Match making session between farmers and input provider (Bayer)**

**T**his session was hosted by Global Communities in partnership with the National Potato Council of Kenya (NPCK) and co-facilitated by AgriProFocus (APF) - Kenya.

A global community is a global development organization committed to working in partnership with communities worldwide to bring about sustainable, impactful changes that improve the lives and livelihoods of the vulnerable. Global Communities (formerly operating as CHF International) launched a new programme entitled Agribusiness Investment for Market Stimulation (AIMS) in Kenya, Tanzania and Malawi in December 2014. Funded by the United States Department of Agriculture, AIMS will expand trade in key agricultural commodities by increasing bank financing to small and medium agribusiness enterprises, and by multiplying their trade outlets. One of the approaches Global Communities, through the AIMS programme, uses to multiply trade outlets and increase the volume and value of trade is business to business (B2B) forums. The forums help bring buyers and sellers together to establish business linkages, ideally leading to formal business contracts or deals.

AgriProFocus Kenya is a multi-stakeholder network that draws its membership from public sector, private sector, development partners, NGOs, research and academia. AgriProFocus facilitates joint action between members and partners towards promoting farmer entrepreneurship and achieving food security.

The main objective of business to business session was to showcase business opportunities for the investors and facilitate business to business linkages between producers, processors, farm input suppliers, development partners and many other parties

involved in the potato value chain.

Prior to the event, potato farmer groups were profiled by the National Potato Council of Kenya and Global Communities. Information collected about the producer groups were on the year of formation, group location, number of women and men in the group, average acreage under potato production, the varieties produced by the group and potential total volumes that can be aggregated by the group per season. Using this information, the producers were then matched with processors who could meet their variety needs.

During the B2B session, representatives of the profiled farmer groups were grouped into 10 groups and each processor had 10-minute discussions with each group on the qualities and varieties that they are looking out for in potatoes supplied to them. The financiers, agricultural input suppliers and NGOs also joined the processor in the discussion where they highlighted the different support they can give to farmer groups.

The forum was attended by three potato agro-processing firms (Norda, Gaea, Sereni Fries), one potato trader/aggregator (Mr. John B. Kang'ethe), four financial service providers (Family Bank, Chase Bank, Equity Bank & Trans National Bank), six Agricultural input suppliers (AGRICO, Kisima Farm, Syngeta, Bayer, ADC Molo and KALRO Tigoni), at least 4 NGOs, (Global Community, Agriprofocus, GIZ, IFDC among others) as well as over 21 farmer-based organizations.

NPCK looks forward to rolling out similar events in the near future with partners such as Global Communities and AgriProFocus with the intention of bolstering trade within the Irish potato value chain.



**Sereni Fries director (2nd from right) in discussion with farmer groups**



## Profiled farmer groups that participated in B2B session were from the groups shown in the table below

	Name Of Farmer Group	Group Location	Year of formation	Number of Members	Av. Acreage/ farmer	Predominant Varieties
1.	Ndaraweta Producers and Business Farmers' Co-operative Society	Bomet County	2013	500	1	Shangi, Jelly and Markies
2.	Merigi Vision	Bomet East	2008	15	1	Dutch Robijn
3.	Tatukos	Bomet East	2005	25	1.5	Dutch Robijn
4.	Meru Potato processors Cooperative Society Ltd	Meru County	2013	390	1	Shangi and Asante
5.	Karigutume	Meru,Buuri	2012	20	1.5	Markies, jelly
6.	Tumaini Self Help Group	Meru -Duuri	2014	42	1	Markies , Shangi
7.	Amani CBO	Elgeyo Marakwet - Keiyo	2015	97	1	Shangi
8.	Sunflower Youth Group	Elgeyo -Marakwet- Marakwet East	2008	15	1	Shangi, Tigoni
9.	Komasia Potato Seed Multiplier	Elgeyo Marakwet –Marakwet East	2014	30	3	Shangi
10.	Kobil Farmers Group	Elgeyo Marakwet-Iten Sub-County	2015	13	1	Kenya mpya
11.	Bukar Farmers Group	Elgeyo Marakwet- Keiyo North	2014	18	1.5	Shangi, Tigoni 4
12.	Kapkoi Village Elders	Elgeyo Marakwet –Keyio North	2013	11	1	Kenya mpya
13.	Sakatia Youth Group	Elgeyo-Marakwet,	2007	12	1	Shangi
14.	Nyakio Self Help Group	Nyandarua, Kinangop	2011	30	1	Shangi
15.	Raitha Investment Group	Nyandarua, Nyandarua South	2003	15	0.5	Shangi
16.	Milima Mitatu Jubilee	Nakuru,Molo	2013	17	1	Shangi
17.	Green Vision Self Help Group	Nakuru,Molo	2007	16	2	Shangi
18.	Yator Tumaini Self Help Group	Nakuru,Molo	2006	18	2	Shangi
19.	Amuka Self Help Group	Nakuru-Molo Sub county	2013	21	0.5	Royal
20.	Seguton Garden	Nakuru-Kuresoi	2013	21	0.5	Shangi
21.	Tofab Goa Youth Group	Nakuru-Kuresoi	2015	22	1.5	Shangi
22.	Sailinga	Nyandarua, Olkaku	2013	10	1	Shangi
23.	Ushindi Self Help Group	Nyandarua South	2010	17	1	Shangi, Kenya Mpya
24.	Bahati Group	Nyandarua, Kinangop	2001	10	1	Shangi
25.	Community Health Workers	Nyandarua, Olkalau	2010	10	0.75	Shangi
26.	Manyatta A. Urumwe	Nyandarua, Olkalau	2009	10	0.5	Shangi
27.	Kihoto Self Help Group	Nyandarua, Olkalau	2013	15	1	Shangi
28.	Good Times Self Help Group	Nyandarua, Olkalau	2005	21	1	Shangi

## Farm Input discussion

**N**PCK organized discussions on farm input, in which farmers had the opportunity to engage with farm input providers to learn the various uses of the inputs and discuss the challenges experienced in potato production. This was a strategic learning and marketing session engagement between the companies and the potato farmers.

However, due to shortage of time, only Bayer got the chance to present their products to the participants. They introduced BAYER Potato crop protection programme that would help farmers increase their yield and be able to maximize profit with their products. One of the key chemicals that Bayer introduced farmers to was CONSENTO, which combines the protectant and translaminar action of fenamidone with systematic and protectant activity of propamocarb hydrochloride for all protection against late blight disease



in potatoes. Some of the concerns were that most farmers were not aware of the programme. Bayer promised to reach out to more farmers. The input providers,

processors and financial institutions who did not engage directly with farmers were requested to get their contacts and engage on mobile communication.

## Trade fair and exhibitions



**T**he objective of the trade fair was to enable the exhibitors to have an opportunity to display their products and innovations. It was also to offer emerging investors in agriculture such as financial institutions and insurance companies a platform to increase their investment portfolio by investing in the agri-business sector, and farmers to learn and source knowledge of the new products, innovations, and technologies.

The trade fair had 18 exhibitors: Nyandarua County, ADC Molo, Agrico, Amiran, Bayer Crop Science, Burn

manufacturers, CIP, FMD East Africa, GTIL, KALRO, KEPHIS, Kickstart, Kisima Farm, Koppert, Omnivent & Royal seed, Osho Chemicals, Syngenta East Africa, Yara International. Being the first potato trade fair, it was received quite well by the farmers. However, time was not sufficient to enable the farmers to interact effectively in the conference and exhibition. It was suggested that future conference should be arranged such that farmers can have enough time to visit the exhibition booth. The next trade fair, scheduled for August 2016, will be organized in potato producing counties starting with Nyandarua.

# Potato's winning nutrient combination

**DR. GEORGE OOKO**

Department of Food Science, Nutrition and Technology, University of Nairobi

**A**cross the world, the potato accounts for at least 20% of calories consumed but it is a major source of sustenance in sub-Saharan Africa (SSA). Here in Kenya, much of the potato produced is used in home-made recipes while about 5% is used for industrial processing of a variety of products.

Since the potato provides a cheaper source of energy for all classes of people, French fries – or chips as they are fondly referred to, are a major lunch while crisps provide cheaper between-meals snacks option. As a major staple, potato's contribution to nutritional security of Kenyan population cannot be overemphasized.

Due to the short duration required for growth and maturity, the crop can be grown twice a year for supply all year round. Increased production and consumption of potatoes may lead to a lower disease burden compared with maize, which is chronically contaminated by cancer-causing aflatoxin. First, potatoes are abundant in vitamin C, a major anti-oxidant that facilitates the absorption of iron and other micronutrients in the gastrointestinal tract (GIT). Vitamin C also prevents scurvy, a common skin disease. In the ranges of 60-120 mg/100g, the levels of vitamin C

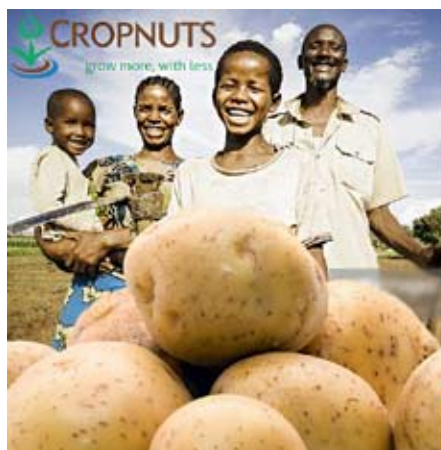


**Jelly Processing potato variety**

in Kenyan potatoes match those of many fruits and vegetables even when subjected to vigorous processing such as frying that have shown retention of at least 45%.

Secondly, variation in carbohydrate content is due to variation in dry matter content. This in turn contributes to a range of energy contents with raw potato tubers having lower average energy content (318-334 KJ/100 g) compared with other roots and tubers such as sweet potato (485 KJ/100 g), yam (444 KJ/100 g) and cassava (607 KJ/100 g). The amount of energy is, however, dictated by processing methods. For instance, frying into products such as French fries increases amounts of energy to 776-1200 KJ/100 g mainly attributed to the

absorbed oil during frying. Though limited in crude protein, with an average of 2%, potato protein is highly digestible with high biological value compared with eggs and has high lysine, which is limiting in cereals. Potato can therefore complement other staples. Potato crude fibre ranges 1-2.5% depending on the product in question, it increases with frying and is an important GIT regulator. The total ash content of the Kenyan potatoes averages 1% in raw tubers being high in fried products. A number of minerals such as potassium, phosphorus, calcium, iron and zinc are supplied through potato consumption to a great extent. With value addition, therefore, potatoes can supply good amounts of essential nutrients.



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## Nyandarua County

Agriculture, being the economic backbone of the county, implies that necessary infrastructural support has to be put in place for this sector to play her rightful role. This shall include development of the showground site in Olkalou as more expansive land for research and training shall be sought.

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**Email:** info@nyandarua.go.ke



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**Contacts:** P.O BOX 327-00100 NAIROBI  
**Tel:** 0719095000/ 0206907000  
**Email:** amiran@amirankenya.com



The International Potato Center was founded in 1971 as a root and tuber research for development institution to deliver sustainable solutions to the pressing world problems of hunger, poverty, and the degradation of natural resources. CIP brings the scientific background, technical expertise and implementation experience in the areas of breeding and variety release, seed system development, agronomy, markets and nutrition for both potato and sweet potato.

**Contacts:** Box 25171 Nairobi 00603 Kenya  
**Tel:** (254-20) 422-3602, **Email:** cip-nbo@cgiar.org



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## Agricultural Development Corporation

ADC is a government parastatal established in 1965 through an Act of Parliament, it is mandated to maintain and produce high quality livestock for farmers and ensure adequate production of the countries seed crop for National Food Security. ADC Molo Seed established in 1979 is mandated to produce certified seed potatoes in Kenya.

**Contacts:** Box, 366-20106, Molo,  
**Tel:** 020 2318066,  
**Email:** adcmolo@gmail.com



Bayer is a global enterprise with core competencies in the fields of health care and agriculture. Bayer Crop Science, the agricultural entity of Bayer, is the world's leading research-intensive business in the agricultural industry offering a broad range of innovations, chemical and biological products for improving plant health along with high value seeds.

**Contacts:** Box 30321 00100, Nairobi  
**Tel:** 0208600000 / 0722 427137



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**Tel:** 0722205538/ 0722426429



## Agrico E.A. Company

Agrico E.A. is a company that provides quality certified seed potatoes to farmers in Kenya and the rest of East Africa. It has been operating since February 2012 and was setup together with Agrico the Netherlands. Agrico E.A. now has 13 potato varieties registered on the national list including processing and table varieties.

**Contacts:** Box 634-00619 Muthaiga, Kenya  
**Tel:** 0722206179/0202400879  
**Email:** info@agrigo.co.ke



Burn Manufacturing, a global leader in cook stove commercialization has created a revolutionary product – jikokoa in Swahili (saving stove) that seeks to transform the way Kenyan families cook. Manufactured at its facility in Ruiru; the jikokoa halves charcoal use, produces 64% less smoke and saves families more than 50 % on charcoal costs compared to the commonly used Kenya ceramic jiko.

**Contacts:** Box, 1921-00232 RUIRU,



## Genetics Technologies International Ltd (Gtil)

GTIL deals with Micro-propagation of disease and pest free planting materials crops such as Bananas, Sweet Potatoes, potatoes, Cassava sugarcane, pyrethrum and flowers through Tissue Culture Technology. GTIL lab has a capacity of 20 million plants annually and also produces potato mini-tubers through Aeroponics Technologies.

**Contacts:** Box 47430-00100, Nairobi  
**Tel:** 0204183279/ 0722662037  
**Email:** kae@africaonline.co.ke



KALRO is a corporate body created under the Kenya Agricultural and Livestock Research Act of 2013 to establish suitable legal and institutional framework for coordination of agricultural research in Kenya. It was formed to restructure, co-ordinate and regulates agricultural and livestock research into a dynamic, innovative, to promote, streamline, co-ordinate and regulate research in crops, livestock, genetic resources and biotechnology in Kenya.

**Contacts:** Box 57811, Nairobi, 00200, Kenya  
**Tel:** 0722-206-986/0722-206-988  
**Email:** info@kalro.org



## Kisima Farm Ltd

Kisima Farm Ltd is a mixed farming company, incorporated in 1943 with a management capacity of 25 years in arable experience. We are the largest seed potato supplier in the country. Kisima seed potatoes are of benefit to over 17,000 growers every year. We produce and supply high quality and disease free potato seeds

**For more information call us on our hotline: 0716968766**



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Osho Chemical is a leader in delivering the best Agrochemical solutions, Animal Health products, Public Health products and extension services to the Agricultural Industry in East and Central Africa. Our goal is to bring innovative Agricultural products to the market through our experts. We match customer needs with the most effective Agricultural Solutions to achieve sustainable higher yields.

**Contacts:** Box, 49916-00100 NAIROBI  
**Tel:** 0711045000/ 0732167000/ 0203912000  
**Email:** oshochem@oshochem.com



## Kenya Plant Health Inspectorate Service

KEPHIS is the parastatal whose mandate is to assure the quality of agricultural inputs and produce to promote food security and national growth. We do this through three areas: seed certification and plant variety protection, phytosanitary or plant health services and analyses of agricultural inputs through our internationally accredited laboratories.

**Contacts:** Box 49592-00100, Nairobi  
**Tel:** 0709 891 000/020 661 8000  
**Email:** kephisinfo@kephis.org



## Koppert Kenya

Koppert Kenya is a subsidiary of Koppert B.V. Netherlands -the international market leader in biological crop protection as a tool for integrated pest management (IPM). Established in 2006, Koppert Kenya provides an integrated system consisting of natural, safe solutions -including soil & seed enhancement, to increase crop health, resilience and productivity in horticulture and agriculture.

**Contacts:** Box 41852 -00100 Nairobi, Kenya  
**Tel:** 020 2021918 / 0731 202191  
**E-mail:** info@koppert.co.ke



Syngenta is a global leading agriculture company that helps to improve food security by enabling farmers to utilize available resources better. It provides world class science and innovative crop solutions, is committed to rescuing land from degradation, enhancing biodiversity and revitalizing rural communities. Whether they grow potatoes, corn, rice, vegetables or coffee, farmers around the world trust Syngenta to help them produce healthy, premium crops and minimize the use of precious natural resources.

**P.O BOX 30393-00100 Nairobi**  
**Tel:** +254703018000/+254703019000  
**Email:** syngenta.east\_africa@syngenta.com



## Kick Start-International

Kick Start-International is a non-profit social enterprise that enables millions of farmers in Africa to climb out of poverty. We widely promote low-cost irrigation pumps to smallholder farmers who irrigate from streams, wells and catchment. Kick Start designed/ patented, low-cost, manual Money Maker pumps, have reached over a ¼ million people across Africa.

**Contacts:** Box 64142-00620 Nairobi, Kenya  
**Tel:** 020 374 0176/ 020 374 0176  
**Email:** kickstart@kickstart.org



Omnivent are experts in Potato storage systems and technology from The Netherlands. These are simple and easy to install systems at economic prices. Royal Seed have partnered with Omnivet to market these storage solutions in Kenya. Royal Seed are experienced in the potato supply chain in Kenya and working with farmers/ processors on storage solutions for potatoes.

**Contact:** Peter Francombe +254 706 825555



## Yara International

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**Contacts:** Box 50949-00200 Nairobi  
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# Technologies for seed potato production



Mini tubers being produced in an aeroponic

**DR. MONICAH PARKER**  
CIP

Quality seed is a key entry point for potato value chains. Through rapid multiplication technologies (RMT) developed by CIP, the time to obtain quality seed through the seed value chain has been reduced from seven seasons to five. RMT to produce minitubers, such as aeroponics and sand hydroponics have been adopted throughout East and Southern Africa (ESA). Although productivity is greater with aeroponics, sand hydroponics technologies are less risky and can be adapted to local conditions. Field production of seed is also knowledge intensive; seed requires greater crop husbandry skills to produce quality tubers and minimize pathogen accumulation. Field production of seed from minitubers demands further skills as minitubers are not as robust as seed-sized tubers. Early generation seed, considered as in-vitro plantlets (or tissue culture plantlets) through to G3, is normally produced by specialized seed producers who

have the required knowledge and access to capital. Decentralized seed multipliers (DSMs—progressive farmers) then multiply G3 seed for one or two additional seasons in order to bulk up quantities and make seed locally available for farmers. Minitubers are not as robust as seed-sized tubers, so it is more profitable for early generation seed producers to further multiply G2 seed a further season and market G3 seed for onward multiplication by DSM.

Key to reaching the current status of quality seed production in Kenya has been targeted, strategic partnering between the private and public sectors along all stages of the seed VC. The private sector's investment in seed potato production is increasing due to high demand for seed. The seed potato VC offers diverse entrepreneurial and business opportunities at numerous levels of investment and return. But this involvement is still minimal and seed systems, if they are to be sustainable, need further private sector engagement.

Local availability and distribution are major seed sector bottlenecks. The significant investments required to produce early generation seed result in a few centralized producers of early generation seed who are unable to reach or supply a larger potato farming community. Seed potato is very bulky and, at a planting rate of 2–2.5 t/ha, transporting seed over long distances between the seed potato production sites and a wide spectrum of farming communities might be more costly than the seed itself, making this impractical and economically unsustainable. The production and marketing of high-quality seed potato only becomes feasible once the specialized production chain is more efficient and with strong linkages to trained DSM, who further multiply seed locally and make it accessible to potato growers. Thus, networks of DSM linked to early generation seed producers are an essential component of a functional seed system. Investment is needed to train and backstop DSM and link them to early generation seed producers.



# Partnerships in conducting potato demonstration, 2015

MS. EMILY OSENA

Kenya – Netherlands Seed Potato Development Project

## 1. The Potato Initiative Africa (PIA) - GIZ

**O**n behalf of BMZ, GIZ implemented the Potato Initiative Africa (PIA) – implementation period: 04/14 – 12/15 – in Kenya with local partners and German private sector companies. Since potato growing has become more and more important for African smallholder farmers, PIA confirmed that potato value chain could also be promoted in other African countries.

The Potato Initiative Africa (PIA) project promotes sustainable modernization of the

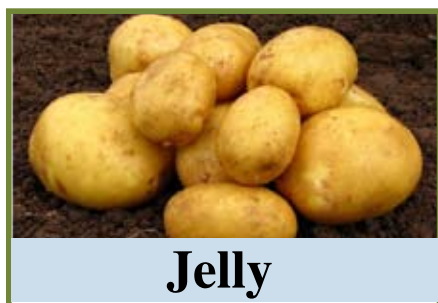
potato value chain in Kenya. The project is currently in the pilot phase, where testing of various models for modernization of potato production is being conducted

Partners in the project include National Potato Council of Kenya (NPCK), Syngenta, Bayer Crop Science, MEA Limited- Fertilizer, FMD East Africa - (Grimme Machinery Agent), International Potato Centre (CIP)-Breeding, Kenya Plant Health Inspectorate Service (KEPHIS), State Department of Agriculture Crop Directorate, Processors (PROPACK, NORDA, DEEPA, NJORO CANNING, KEVIAN),

Nyandarua County Government (Agricultural Mechanization Station, and Agricultural Training Centre Njabini). Each of the partner played their roles as per their mandate.

**The demonstration farm in ATC Njabini was set up to showcase new potato varieties.**

The first component was testing and evaluating three recently released potato varieties (Jelly, Caruso, & Connect) for their adaptation to the Kenyan conditions, to improve productivity and eventually their suitability for use in processing.



Jelly



Connect



Caruso

The second component was demonstration to farmers of modern potato production techniques, which include mechanized fertilizer application and use of fertilizer blended specifically for potato (NPK 16:8:22+ 3MgO +2S), mechanized bed formation, planting, hilling/weeding and harvesting.



Mechanization of production



The third component was systematic crop protection which involved development of a crop protection programme, which farmers can use as a guide for agro-chemical application on the potato for pest and disease control. This has led to Bayer and Syngenta companies developing spray programmes for potato production.

## 2. The Kenya-Netherlands Seed Potato Development Project



Pupil showing interest in farming



Potato demonstration field - Eldoret

The Kenya-Netherlands Seed Potato Project addresses the foundation of the potato value chain with the aim of developing it. The key aspects of the value chain covered by the project include: a) supply of healthy seed of high yielding varieties; b) a reliable, efficient and effective seed certification system to ensure that high quality seed is officially labelled and can be recognized by farmers; c) business to business development so that chain partners can obtain the technology and know-how (crop management, storage, mechanization, processing, etc) that is required to produce ware potatoes and potato products at competitive prices.

To promote the varieties, each year the project participates in the University of Eldoret Agribusiness Trade Fair, where its newly released potato varieties are on display. In the 2015 edition, held between September 23-25, varieties on display had been bred by seven Dutch companies: Agrico, HZPC, Meijer,

Den Hartigh, KWS, Danespo and Europlant. Five of these companies already have business partners in Kenya who import various potato. The partners are Agrico EA, Kisima farm, Sygenta, Suera farm and Kenya Highlands Seeds Company.

Apart from demonstrating the performance of the various seed potato varieties, demonstration on mechanization

(as done by PIA project) is also replicated during the trade fair. A prototype potato store developed by Omnivent company, a Dutch company that provides potato storage solutions, is usually exhibited in the trade fair. This is technology that is fast gaining root in the country and it is expected to ensure consistent supply of seed potato to farmers.



Demonstration fields

## 3. Seed production and post-harvest management of potato in the SPIRIT project - KALRO, Tigoni



Farmers being shown how to select seed potato

SPIRIT project, titled "Strengthening the capacities for fostering innovation along potato value chains in East Africa," is a collaborative three-year project awarded a grant by the Secretariat of the African, Caribbean and Pacific (ACP) Group of States under the ACP-EU Science and Technology Programme II (S&T II), which is co-financed by the European Commission.

The SPIRIT Project is conducted in Uganda, Rwanda, Kenya and Tanzania and aims at strengthening the capacities in scientific research and innovative technologies and practices for enhanced product quality along the potato



value chain in East Africa, thus contributing to building capacities in Agricultural Science, Technology and Innovation (ASTI) in East Africa.

Going by the objectives of the SPIRIT project, stakeholders were invited to a field day organised by KALRO. In attendance were farmers drawn from various potato counties, SPIRIT project co-ordinator, NPCK, Kiambu County agriculture staff, MoALF headquarters, KEPHIS, banks, Bayer, Sygenta, Agrico EA and Kenya-Netherlands Seed Potato Development Project

The whole organization of the plots was great. Stakeholders were taken through several research stages that are done by KALRO Tigoni. Stakeholders were informed, practically, about the different methods that are employed by farmers in land preparation, ridging, planting (whether to plant in the furrow or in the hill), seed size selection, sprouting and non-sprouting, spraying, performance of various KALRO varieties. Farmers were also shown how to carry out positive selection in their farms.



#### Performance of different potato varieties

Farmers were excited when they were involved in selecting good looking plants from a plot of seed potato breeding. They were taken through the potato breeding

process where they appreciated that breeding is not an easy activity; it takes time to come up with a new potato variety.





**Seedbed Preparation**



**Seedbed Maintenance**



**Harvesting**

**Contact us:**

**Nakuru: 0722 205538 ,**

**Nairobi: 0732 151000**

**Eldoret: 0727 509018**













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# With certified seed potato, you cannot go wrong

PHOTO: MESHACK RONO - GIZ



Large tubers from high quality seeds

## MR. WILLIAM MUNYAO KEPHIS

Potato, a crop of no mean economic value in the world, plays a major role in Kenya's food security as well as income generation, doubling as both a food and cash crop.

With such a dual role, it is crucial that the crop succeeds. The success or failure of potato crop starts with the quality of the seed that farmers plant. High quality potato seed will always give farmers better yields than low quality seed. Therefore, besides climatic and agro-ecological conditions and the right germplasm, quality seed potato is the most influential factor in potato yields around the world.

Potato is predominantly vegetatively propagated and prone to accumulation of pests and diseases. This accumulation leads to decrease in yields in subsequent seed multiplication generations (degeneration).

Seed potato must therefore be certified through a seed certification programme.

Seed potato certification programmes are designed and administered to provide reasonable assurances of seed quality and health. Seeds are certified in classes, each with specific quality standards. In Kenya, seed potato is certified in the following classes:

- (a) Breeders seed (stock seed) – the last stage of clonal selection or minitubers produced through aeroponics/ hydroponics systems.
- (b) Pre-basic – progeny of breeders seed (stock seed).
- (c) Basic seed – progeny of pre-basic.
- (d) Certified – progeny of basic seed/ certified seed.

### Importance of certified seed potato

Certified seed potato has several benefits,

including:

1. Reliable high health seed production.
2. Increased yields and product quality of commercial crops thus contributing to national food and nutrition security.
3. Improved household income.
4. Improved management of pests and diseases, which limit yield and quality.
5. Reduced necessity to use pesticides to manage pest problems and a high adoption of Integrated Pest management practice.

### Distinguishing certified seed

Certified seed is graded into different sizes. Size I (28.0-45.0mm) and Size II (46.0-60.0mm) and packed into 50kg bags, which are sealed with certification tag bearing the following details: Species, variety, category (class), size, lot number and the date of sealing.

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# Supporting development of potato value chain–

## ASDSP's milestones in Bomet, Elgeyo Marakwet, Nyandarua and Nyeri Counties

**MS. ROSE NDUNGE**  
ASDSP

**T**he Agricultural Sector Development Support Programme (ASDSP) is a national programme co-founded by SIDA and the Government of Kenya to promote the development of environmentally resilient and socially inclusive value chains across the country. To date, the programme in collaboration with other partners supports the development of 29 value chains among which is the Irish potato. The four counties in which the programme is addressing bottlenecks in the Irish potato value chain are Bomet, Elgeyo Marakwet, Nyandarua and Nyeri.

**Bomet County:** The programme, in partnership with the county government, KENAPOFA, KEPHIS and KALRO Tigon, has supported the selection and subsequent training of 14 people in community seed multiplication on the Dutch Robijn variety. The multipliers will play an important role in bridging the gap in potato seed supply.

**Elgeyo Marakwet County:** The programme, in partnership with the County government, Horticultural Crops Directorate (HCD), Anglican Development Services (ADS), Technoserve Kenya and stakeholders, has managed to end the use of extended potato bags. Irish potatoes are now marketed using "Jubilee bags," which weigh 60Kg and sell at between Kshs1000–1500. In addition, the programme is facilitating ware potato producers to register Irish Potato Farmers' Marketing Associations which will play a key role in championing for the interests of its members.

**Nyandarua County:** The programme has partnered with the County government, AMIRAN and Syngenta in supporting capacity building in good agronomic practices through the demonstration plots established in each of the 25 wards. Further to this, additional capacity building has been undertaken on group formation which resulted in the



registration of Nyandarua County CBO, comprising 128 groups, which is now undertaking bulk purchase of fertilizer for its members.

**Nyeri County:** The programme, in collaboration with the county government and Farm Concern International, has mobilized 13 commercial villages, comprising one input supplier group, 37 producer groups, six women groups and four youth groups. The focus of the commercial villages is to assist value actors to

undertake bulk purchase of fertilizer and to collectively market their ware potato. So far, the villages have actualized bulk purchase of fertilizer and have received a supply order of 100 tonnes of Ware Dutch Robijn variety from a buyer. As a result, an additional partner, the International Fertilizer Development Cooperation (IFDC), has entered the scene and has agreed to finance the construction of two seed storage structures with a capacity of 45 tonnes each.

# Potato production in Kenya

MR. CHARLES MBUTHIA  
KENAFF

**A**s an important food and nutrition security crop, the potato is a high yielding productive vegetable providing jobs for millions of people in Kenya. The crop produces more food per unit area and per unit time than wheat, potato rice and maize. It has a short and highly flexible vegetative cycle, and is ready for harvesting within 3-4 months of planting. It fits well with double cropping and intercropping systems. One of the crop's many other assets is its adaptability, which enables it to grow at most altitudes and as an off-season crop. The potato is rich in protein, calcium, potassium, and vitamin C with good amino acid balance.

In Kenya, the potato is the second most important food crop after maize while globally it comes fourth after rice, wheat and maize. With the current maize necrotic virus disease and food insecurity, the crop

is likely to take precedence with the per capita consumption rate estimated at 33 kg per person. The crop requires wet climatic conditions and slightly acidic soils. The most favourable climatic conditions are found in areas with an annual rainfall of between 850 mm and 1200 mm and at altitudes between 1400 m and 3000 m above sea level. These areas are situated mainly in the Central, Rift Valley and Eastern regions of Kenya. The main potato growing counties include Nyandarua, Bomet, Meru, Nakuru, Uasin Gishu, Kiambu, Narok, Nyeri, West Pokot and Elgeyo Marakwet.

The crop can be produced commercially, meaning it's business opportunity for farmers. The crop requires appropriate choice of varieties to maximize on production within the shortest duration of time possible. There are many high yielding varieties that have been introduced in the market, for example Sherekea producing

approximately 160 bags per acre and Kenya Mpya yielding approximately 140 bags per acre. They are known to be fast maturing, taking around three months to fully get ready for harvesting.

Good agricultural practice (GAPs) is another essential aspect, since potatoes are sensitive requiring maximum care and attention. Most farmers, however, ignore this demand thus registering low yield that makes it unprofitable and demoralizing. Potato production is tedious and costly but the returns are rewarding. Potato cultivation involves proper land preparation, appropriate furrow and tuber spacing, weeding, earthing-up, integrated pest management, and appropriate harvest time. It is important to have a cropping calendar that guides a farmer in the appropriate time to plant and harvest. This is necessary because it is possible to produce the crop three times a year with proper timing.



**Viazi Power is the New Innovation in potato growing that has been pioneered by Lachlan (K) Ltd. It entails: Taking the best of synthetic chemical and bagged fertilizer products and combining their application with the best "bio-control" products, in a holistic fusion of seed treatment and foliar application that enables sustainable, environmentally friendly farming.**

## **Critical stages to use the viazi power products:**

1. Seed treatment before planting
2. 10 leaf stage of the crop
3. At flowering of the potato crop

## **Benefits of Viazi Power**

1. Early Root formation
2. Early tuber initiation
3. Increased Number of tubers
4. Better tuber uniformity
5. Increased tuber sizes

The Viazi power program has been adopted by farmers across the country to triple their potato harvests. From farmers' fields, yields of more than 150 bags each weighing 110 kg have been obtained per acre.

**Lachlan Kenya Limited, [www.lachlanafrika.com](http://www.lachlanafrika.com), email: [info@lachlanafrika.com](mailto:info@lachlanafrika.com),  
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The major crop diseases affecting potato production are potato late blight, bacterial wilt and a variety of viral diseases. Other potato diseases are blackleg and powdery mildew. Insects that commonly transmit potato diseases or damage the plant include the potato beetle, the potato tuber moth, the green peach aphid the potato aphid, beet leafhoppers, thrips, and mites. The potato root rot nematode is a microscopic worm that thrives on the roots, thus causing the potato plants to wilt. Since its eggs can survive in the soil for several years, crop rotation is recommended. There exist fungicides and pesticides for their control and great care is important when choosing them due to pest or disease resistance.

Crop rotation is important to avoid the spread of soil borne diseases and pests. Rotation should be done with crops outside the family that potatoes belong to. Land can be left fallow for one or several seasons where possible. Crop rotation helps improve soil fertility, soil water retention, reduction of soil erosion and management of weeds. Crop rotation is probably the best-known method for control of bacterial wilt in potato. Crop rotation controls spread of other diseases by elimination of volunteer potato crops, which are plants growing from leftover tubers in



the field after seasonal harvest. Where this is not possible, like in intensive agriculture, soil sterilization by steaming, solarisation or use of appropriate fumigants is important at the beginning of every season.

***For more information on potato production visit [www.npck.org](http://www.npck.org) and download the potato production manual.***

## NPCK initiative in potato marketing

**T**he potato subsector has been faced with various challenges such as disorganized and non-structured markets leading to high transport and transaction costs. Most potato farmers have no storage facilities thus experience low prices due to post-harvest glut. Potatoes are mainly sold via informal channels such as open-air markets and stalls with little observance of marketing standards and hygiene. Ultimately, potatoes packed by farmers have mixed varieties, different sizes, without sorting or grading which lowers the quality of potatoes and makes them inappropriate for processing and specialized utilization. The process of transformation however, calls for farmers' adoption of new ways of doing businesses, stimulated by supportive measures and initiatives.

NPCK has initiated a participatory approach to deliver a more organized

marketing structure in potato industry. To achieve this, the Council is mapping market outlets in terms of variety and quality of potato they require and uses this information to link farmers producing suitable variety that match needs of the market outlets. This approach however calls for farmers to form farmer groups or cooperatives which are easier to work with in terms of collective marketing, capacity building of good agricultural practices and also to ensure a constant supply to market outlets which is the main challenge that processors have been facing in the recent past.

The potato Council has successfully linked a number of farmer groups from Molo and Meru County to supply Shangi and Jelly variety to a market outlet in Nairobi that specializes in processing of chips. Direct linkage has reduced transaction cost, enabling the farmers to get at least Ksh4 per Kg extra at the farm

gate while the market outlet has benefitted from good quality product and constant supply of potatoes. Weight is used as a standard unit of measure and 50 kg bags as the maximum packaging bag to conform to the public notice 44 Act. This ensures that farmers get value for money, ease in product handling and finally market outlet getting better quality of desired variety.

To fully realize its mandate of improving farmer income and welfare, NPCK plans to register more farmers in a group/cooperative by end of year 2016 and link them to more market outlets that demand varieties such as Shangi, Jelly and Markies suitable for processing chips as well as varieties suitable for table potato. NPCK is open for partnership with other stakeholders such as input providers, transporters, private/public warehouse provider and financial institutions to participate and help streamline the market structures for potato.

# Current NPCCK's projects



**Potato Cyst Nematode Consortium**

## **Potato Cyst Nematode (PCN) Baseline Survey**

The PCN project launch was held on 25th July 2016 at the Stanely Sarova Hotel, Nairobi. The project, which is funded by FAO Technical Cooperation Programme, will be implemented by a consortium operating under NPCCK umbrella for duration of 6 months up to December. The project aims to establish the status of PCN in Kenya, develop and implement a contingency control plan and strengthen capacities for PCN control and management. During the official launch, Mr. Njoroge from KEPHIS, Department of trade and standard, revered tireless effort of the PCN consortium and emphasized the need for the team to remain committed in order to meet deadline of six months.

## **Feed The Future- Accelerated Value Chain Development (AVCD)**

NPCCK has collaborated with International Potato Center (CIP) under Feed the Future - Accelerated Value Chain Development (AVCD)

2015 to 2018 project. In the project which will be carried out in Meru and Elgeyo Marakwet Counties, NPCCK will work to improve seed and ware potato marketing through improved linkages and access to market information.

## **Promotion of Nutrition-Sensitive Potato Value Chain Development in East Africa**

The nutritional sensitive potato value chain which is funded by GIZ aims to address the challenges in the potato sector through three components:

1. Agricultural productivity
2. Nutrition and sub-sector
3. Coordination

The five-year project will commence in August 2016 and will be implemented in Kenya (Nyandarua & Bungoma counties) and Uganda

NPCCK will take the role sub-sector coordination component.

## **The Nyandarua County Potato Trade Fair**

The Nyandarua county government and NPCCK, in partnership with other stakeholders, are organizing for the first County Potato fair in Nyandarua County. The trade fair will create a platform for information sharing, awareness and networking, and is expected to attract the business community, NGOs, input providers, processors, agricultural machinery supplier's, financiers, insurance companies, farmers and farmer's organization from within and outside the county.

## **SMS Based Seed Portal**

NPCCK through the support of CIP (Feed the Future-AVCD project) and other development partners is establishing an ICT platform meant for collecting, processing, and dissemination of seed and ware potato information. The information on variety, prices, location, and telephone contact of seed and ware producers will be made available to farmers through SMS.



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# NPCK BUSINESS CHARTER

The NPCK's Revised Business Charter highlights the new areas of business engagement with partners in potato subsector. The new services provided by the Council will not only help improve businesses for the actors and partners but will also be a source of income that will help in sustainability of NPCK. The new services provided by the NPCK include:

1. Dissemination of subsector information through NPCK website, Bi-weekly e-newsletter and biannual Potato Guardian magazine.
2. Advertisement of products and services through NPCK website.
3. Organize annual National Potato Conference and Trade Fair and Trade fairs in the 13 Major Potato producing Counties which will facilitate business to business engagement, networking, information sharing and learning of new technologies and innovations.
4. Facilitate development of standardized branded seed and ware potato packaging bags for use by farmers and traders. This will help improve the quality of seed and ware potatoes marketed and help establish Traceability. The move will also help Council obtain income to be used for its operations and sustainability.
5. Develop or facilitate market linkages between ware potato farmers and the market outlets, and between seed producers and ware potato farmers. This will help improve business for processors and other market outlet and create business opportunities for financial institutions and other input and service providers. The NPCK will get a small commission for this organization which will help in sustainability.
6. Establish private seed inspectorate services. The NPCK will have seed inspectors in the 13 major potato producing counties who are trained by KEPHIS and gazette, to help undertake the certification process. This will contribute to improved timeliness for seed inspections and attract more investment in seed production leading to increased production, and use of high quality seed potato.
7. Organize regular stakeholder meetings and forums for engagement, solution search, networking, businesses, learning and sharing information.
8. Establish a Resource Centre and an ICT platform forming a reference point for all inclusive subsector information which is easily accessible.
9. The NPCK will increase and improve services to the members through structured membership that allows engagement at different levels. Membership will be categorized into three levels that will qualify for different levels of services and different discounts for services. The three categories, namely Gold, Silver and Bronze, will have differences in services offered but not difference in voting power.

## The Three NPCK Membership Categories (Gold, Silver and Bronze)

### A. Gold

A gold member will pay annual subscription of Kshs 100,000. This is a premium level membership with the following entitlements:

- All the benefits of an ordinary member
- Have their logos appearing in all NPCK publications and communications channels, such as website, potato variety catalogue, Potato Magazine, fliers and brochures
- Receive 15% discount on fee charged for exhibition for showcasing during National and County Trade Fairs, advertisement on publications
- Members will have access to NPCK database with all subsector statistics, information, publication and innovations.

### B. Silver

A silver member will pay annual subscription of Kshs 50,000. This is a medium level membership with the following entitlements:

- All the benefits of an ordinary member
- Have their logo appear on NPCK website
- Receive 10% discount on advertisement made through NPCK publications and communications channels, such as website, potato variety catalogue, Potato Magazine and fliers/brochures.
- Receive 10% discount on fee charged for exhibition and showcasing during National and County trade fairs.

### C. Bronze

A Bronze member will pay a maximum of Kshs 20,000. This is an ordinary level membership with the following entitlements:

- Assist in input sourcing, marketing and linkages
- Attend subsector meetings
- Forward business challenges for solution search.

**Please pay by cheque, bank transfer or deposit money to the following**

**Account:**

**Name: National Potato Council of Kenya, Bank and branch:**

**NIC Bank, ABC Branch, Account No: 1001574287, Swiftcode: NINCKENA**



# National Potato Council of Kenya

**NARL KARI Campus, Waiyaki way**  
**P.O BOX 29982 00100**  
**Nairobi, Kenya**  
**Tel: 0725 673 745**  
**+254 202411921**

## NPCK MEMBERS/PARTNERS

### Farmers, Farmer groups and Farmer associations

- Eastern Africa farmers' federation (EAFF)
- Kenya National Farmers' Federation (KENAFF)
- Kenya National Potato Farmers (KENAPOFA)
- Farmer groups (Kirimara Potato growers ass, OL Aragwai farmers CO-OP Society LTD, Good times - Nyandarua, Milima mitatu - Nakuru, etc)
- Farmers (Rono, Gitonga, Njomo, etc)
- Rich gardens limited

### Seed potato producers/multipliers

- Kenya Agricultural & Livestock Research Organization (KALRO) Tigoni
- Agrico East Africa
- National Youth Service (NYS Tumaini)
- Kisima farm
- Genetics Technologies international limited.(GTIL)
- Stockman Rozen Farm
- Agricultural Development Corporation (ADC Molo)
- Charvi investment
- Pieper Farms
- Mr. David Maingi
- Syngenta East Africa Ltd

### Traders / Traders association

- Seed Traders Association of Kenya (STAK)
- Ware Potato Traders
- OLX

### Development partners

- United States Agency For International Development (USAID)
- Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)

- Kenya – Netherlands Seed Potato Development Project
- International Fertilizer Development Center (IFDC)
- Food and agriculture organization of the united nations (FAO)
- SYNGENTA foundation
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
- Grow Africa
- SNV Netherlands Development Organization

### Processors

- Tropical heat
- Propack
- Sereni fries
- Rift foods Kenya limited
- Norda industries
- Equitorial nut processors
- Gaea food processors
- Kevian Kenya limited

### Research partners & education institutions

- Kenya Agricultural & livestock research organization (KALRO - Tigoni)
- International Potato centre (CIP)
- Jomo Kenyatta University of Agriculture and Technology (JKUAT)
- University of Nairobi (UON)
- Mount Kenya University (MKU)
- Agri benchmark

### Government and regulatory bodies

- Kenya Bureau of standards (KEBS)
- Kenya Plant health inspectorate services (KEPHIS)
- Ministry of Agriculture livestock and Fisheries (MoALF)
- Agriculture Fisheries and Food Authority (AFFA)

### Input providers

- Syngenta East Africa Ltd
- BAYER Crop Science
- Lanchan Kenya limited
- UPL

### Financial institutions

- EQUITY BANK
- Chase Bank limited

### Affiliated partners

- African Agri Council (AAIL)
- Agricultural Council of Kenya (AgCK)
- Kenya Private Sector Alliance (KEPSA)
- Agricultural Information Network (AIN)

### Gold category members



**Pieper Farms LLC**



**This magazine was made possible by the contribution from the Kenya Market Led Horticulture Program, which is implemented by a consortium led by SNV, the Netherlands Development Organisation.**

# Increase Your Potato Yields

Use Syngenta's proven fungicide solution of Daconil®, Ridomil® and Revus® to increase your potato yield




 **80ml/20ltr**





















 **20ml/20ltr**



 **50g/20ltr**

## Syngenta Potato Spray Program

First Emergence	Early Rosette		Rapid Canopy		Flowering		Canopy Complete			Desiccation		Usage Rate		
												15-20 ltr/ Knapsack sprayer	PHI	Spray interval in days
Weeks	3	4	5	6	7	8	9	10	11	12	13			
• Soil borne pests	 Actara											8gm	7	7
• Leaf miner/mites			 Dynamec									10ml	7	3
• Aphids				 Engeo								8ml	5	7
• Potato tuber moth					 Match							25ml	7	14
• Early & Late Blight	 Daconil											80ml	5	7
			 RidomilGold									50g	7	7
				 Revus								20ml	7	7
					 RidomilGold							50g	7	7
						 Revus						20ml	7	7
							 RidomilGold					50g	7	7
								 Revus					20ml	7

**syngenta®**

To get the Syngenta Spray Program, register by sending a free SMS to 22432 and get to know more on how to grow potatoes the Syngenta way.

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Email: [syngenta.east\\_africa@syngenta.com](mailto:syngenta.east_africa@syngenta.com) | [www.syngenta.co.ke](http://www.syngenta.co.ke)

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