Biosafety News

Issue No. 5

Championing for a Biosafe Nation

NBA is ISO 9001:2015 Certified

In this issue;

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BIOSAFETY NEWS

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Biosafety Kenya @BiosafetyKenya

EDITOR'S NOTE

Dear reader,

I take this unique opportunity to welcome you to the 5th Issue of the Biosafety Newsletter from the National Biosafety Authority. The Biosafety Newsletter is issued twice a year in both print newsletter and soft copy. Since December 2020, when we produced our 4th Issue, a lot has happened.

In the same breath, we are delighted to inform you that, with effect from 1st February 2021, the National Biosafety Authority (NBA) relocated to NACOSTI Building (2nd Floor), Upper Kabete off Waiyaki Way, Nairobi. Our postal address,telephone, and social media contacts remain unchanged.

The National Biosafety Authority (NBA) was established by the Biosafety Act No. 2 of 2009 to exercise general supervision and control over the transfer, handling and use of genetically modified organisms (GMOs) with a view to ensuring safety of human and animal health and provision of an adequate level of protection of the environment. We take this opportunity to update our readers on the essential work that we are doing towards fulfilling our mandates.

In our 5th Issue, we inform you about biosafety frameworks and laws that govern the safe use of biotechnology. We track the genesis of biosafety frameworks from the Convention on Biological Diversity (CBD).

This Issue also highlights the progress that we have attained as an Authority regarding the fulfilment of our mandates. In addition, we shall get updates on Post-Release Monitoring of Genetically Modified Organisms, information on how we are a step closer to Bt Maize (MON 810) commercialization in Kenya, and how the NBA conducted the sensitization workshop at the Namanga One-Stop Border Post.

Likewise, the NBA Board Members undertook a Biosafety Risk Assessment Workshop that equipped them with the knowledge of the regulatory process of genome-edited organisms and products in Kenya.

I now encourage you to discover more in this newsletter. As our esteemed reader, please do not hesitate to share your opinions with us. As usual, your constructive criticism will help us improve, whereas encouragement is always most welcome!

We look forward to seeing and serving you better!

Abook Brian,

Editor

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

As we welcome stakeholders to the 5th Edition of the Biosafety E-newsletter, I would like to take the opportunity to introduce you to the NBA Board of Management.

The Board Chair, Dr Joseph Kithaka Chavutia, was appointed to the by Cabinet Secretary, Ministry of Education through a gazette notice in August 2020. Mr Archibald Munyi, a Board member, was also appointed through the same gazette notice. In addition, the PS, State Department for Crop Development and Agricultural Research, has also appointed Dr Oscar Magenya as his representative to the Board. We take the opportunity to welcome the new Board Members and indeed look forward to working with the Board as the oversight body to ensure that NBA continues to deliver on her mandate as set out in the Biosafety Act., 2009. Over the same period, one of the Board members, Mrs Jane Otado, who has served in the NBA Board with dedication since inception, retired from Public Service.

We indeed wish Mrs Otado well in her next assignment. A brief profile of the Board members is provided in the table below;

In the intervening period since the last newsletter, the Authority has undertaken further discussion with stakeholders on the draft guidelines for low-level presence and adventitious presence of GMOs. This an important document as Kenya progresses towards the adoption of more GM crops as it would facilitate trade among nations while ensuring the safety of approved GM crops. Further discussion is anticipated through engagement with other stakeholders to ensure that the standards set in the document will be facilitative enough to the developers while ensuring that safety is not compromised. We do look forward to your participation when such stakeholder meetings are scheduled.

To the Editorial team, thumps up for delivering the E-newsletter!

Do enjoy the reading and share any views on the newsletter for future improvement!

Prof. Dorington Ogoyi
CEO, NBA

Announcing the New NBA Board Members

The National Biosafety Authority (NBA) is pleased to announce a new board chair and an additional new member to the Board. The new Chairman is Dr. Joseph Kithaka Chavutia and the additional new board member is Mr Archibald Munyi.

According to the amended Biosafety Act 2018, the Authority shall be managed by a Board comprising of nine members as follows:

A Chairperson who shall be an eminent scientist, appointed by the Cabinet Secretary;

i. The Principal Secretary in the Ministry for the time being responsible for Science and Technology or a representative;
ii. The Principal Secretary in the Ministry for the time being responsible for finance or a representative;
iii. The Principal Secretary in the Ministry for the time being responsible for agriculture or a representative;
iv. The Principal Secretary in the Ministry for the time being responsible for health or a representative;
v. Two experts in the biological, environmental and social sciences respectively, appointed by the Cabinet Secretary;
vi. One member with financial expertise, appointed by the Cabinet Secretary; and
vii. The Chief Executive Officer who shall be an ex-officio member.

Below are the present board members and their brief profiles:

Dr. Joseph Kithaka Chavutia
Chairman Board of Directors

Dr Joseph Chavutia is a registered pharmacist and holds a Bachelor of Pharmacy degree and a Post-Graduate Diploma in Education (PGDE) from Moi University. He is the current Head of the Health Sciences Department at the Eldoret National Polytechnic in Eldoret, Kenya. He has held that position since 2006.

Dr Chavutia has worked as an accomplished pharmacist in various organizations in Kenya. His stint as a pharmacist started at Kenyatta National Hospital (KNH) from 1988 to 1989. There, he served as an intern before joining Thika District Hospital as the pharmacist in charge. From 1989 to 1996, he worked as a Pharmaceutical Sales representative at Pfizer Laboratories Ltd. Afterwards, he joined Polymerics Pharmaceuticals and worked as a company pharmacist from 1996 to 1998. He later served as a Manager at Makenson Pharmacy from 1998 to 2006.

Besides his career growth accomplishments, he is a long-serving member of the Pharmaceutical Society of Kenya. Also, he is a Resource Person Pharmacy & Poisons Board, Training and Assessment Committee member. Dr Chavutia has also been a member of the Board of Directors in several institutions.

Announcing the New NBA Board Members

Dr Roselida Owuor,
Rep of PS Science & Technology

Dr Roselida Owuor holds a PhD in Cell and Molecular Biology from Maseno University and an MSc. in Reproductive Biology and Cellular and Applied Physiology from the University of Nairobi. Dr Owuor is a Deputy Director of Research in the Directorate of Research, Science and Technology in the State Department for University Education and Research, Ministry of Education.

She has served at Senior Management Positions in the Public and Private Sector for more than eighteen years. Furthermore, she has been coordinating science, technology and innovation activities at the national, regional and international level. She has served in the Board of Management in certain national institutions and international organizations.

Dr Owuor participated in the drafting of the Biosafety Bill, which was enacted in 2009. She also participated in the drafting of Regulations under the Biosafety Act, 2009. She recently participated in the finalization of the Science, Technology and Innovation Policy

Mr Archibald Munyi,
Board Member

Mr Archibald Munyi is an Advocate of the High Court of Kenya, a Commissioner for Oaths and a Notary Public with over 13 years of civil and commercial practice experience. He is a Certified Arbitrator (ACIArb) with the Chartered Institute of Arbitrators (London). He holds a Bachelor of Laws (LLB) degree from the University of Nairobi, a Post-Graduate Diploma in Law from the Kenya School of Law and a Masters in International Trade and Investment Law from the University of Nairobi. He is also a member of the Law Society of Kenya and the Chartered Institute of Arbitrators (London).

Announcing the New NBA Board Members

Dr. Oscar EV. Magenya holds a PhD in Insect-Viral-Environmental interactions from Wageningen University, The Netherlands and Post-Doctoral work at ICIPE on insect science; MSc in Agricultural Entomology from Kenyatta University. He is an agro-developmental specialist currently working as Director of Research and Innovation, Ministry of Agriculture, Livestock, Fisheries and Cooperatives. Previously, Dr. Magenya was a researcher at the Kenya Agricultural Research Institute and rose through the ranks to the position of Chief Research Administrator.

Dr. Magenya has many and varied skills, capabilities and experiences, which span over 30 years as a research and development manager in government, senior-level policy development and public administration, university-level graduate supervision, agricultural leadership and administration and innovation management to mention but a few. He has over 20 years of research, project management and technology expertise gained from years in Government, International research Organizations and Non-Governmental Organizations. He is currently serving as a member of several National and International Boards, and previously on technical institutions and an advisor to global developmental, non-governmental and multilateral organizations. He is currently the Vice Chair of a Committee reviewing the National Agricultural Research System Policy.

Dr. Oscar E. V. Magenya
Rep of PS Ministry of Agriculture, Livestock and Fisheries

Susan Koki Mutua
Rep of PS Ministry of Health

Susan Koki Mutua is a Public Health Officer currently deployed as the Acting Head, Department of Public Health in the Ministry of Health - Kenya, where she has been coordinating matters regarding disease prevention and control during this COVID-19 pandemic period. She has had particular interest in Port Health, coordinating personnel activities and logistics to ensure that we are safe within our borders through screening of travellers and coordinating quarantine. She has spearheaded introduction of digital surveillance systems at the Jomo Kenyatta International Airport and Ground crossings, and currently working on expansion of the Airport surveillance system to all other local and international airports within the country. She is also a member of the National Taskforce which has been in place since 2018 in preparation for Ebola and later COVID-19. Prior to secondment to MOH, she was representing Kenya Defense Forces in the taskforce. In KDF she has served as Staff Officer I (SOI) Public Health, deployed at the Defense Headquarters, tasked with matters disease prevention, taking a lead role in Disease Surveillance and control activities, especially with the Dengue Fever outbreaks in the coastal region and Mandera. She was deployed for one year in United Nations Mission in Sudan, where she was tasked with ensuring Hygiene and safety of troops as they fulfilled their mandate of peace keeping.

Susan has a degree in Public Health, Higher National Diploma in Food Science and Inspection, and currently pursuing MSC in Epidemiology.

Prof. Dorington O. Ogoyi,
Chief Executive Officer

He holds a PhD, MSc and BSc (Biochemistry) degrees from the University of Nairobi and an MBA (Strategic Management) from Moi University. He gained his postdoctoral exposure at the Department of Experimental Zoology, the University of Utrecht, Netherlands (1995-1996) and the National Institute of Entomological Sciences (NISES), Tsukuba, Japan (2000-2002). He previously served as an Associate Professor in the Department of Biochemistry and Biotechnology and Director of Research and Development at the Technical University of Kenya. He also taught and carried out research for several years at the Department of Biochemistry, University of Nairobi.

Prof. Ogoyi joined the Authority in 2012 as the inaugural Director, Technical Services, where he was instrumental in establishing a science based, predictable transparent mechanism for review of applications. He was appointed to the current position of Chief Executive Officer in May 2018. He is currently the National Focal point for Cartagena Protocol on Biosafety, the National Focal Point for the GM-Food platform, and represents the African region in the Compliance Committee of the Cartagena Protocol on Biosafety.

As an organization, we wish them all much continued success in the years to come, and thank them sincerely for their contribution and involvement !

BIOSAFETY NEWS

Synopsis of the Biosafety Regulatory framework in Kenya

By Josphat Muchiri

Introduction

The need to have biosafety frameworks and laws to govern the safe use of biotechnology has its genesis in the provisions of the Convention on Biological Diversity (CBD). The CBD is the leading international instrument for addressing biodiversity issues. It was opened for signature during the Earth Summit held in Rio de Janeiro on 5th June 1992 and entered into force on 29th December 1993. The three objectives of the CBD include; conservation of biological diversity, sustainable use of its components and; the fair and equitable sharing of benefits arising from the utilization of genetic resources. Two Articles of the CBD directly addresses issues of biosafety. These are; Article 8 (g) that requires Parties to "Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health". The other Article is Art 19 (3) that states, "Parties shall consider the need for a Protocol setting out appropriate procedures in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology". This Article led to the negotiations and development of a supplementary Protocol - the so-called "The Cartagena Protocol on Biosafety" from 1996 to 2000.

The Cartagena Protocol on Biosafety (CPB) was adopted on 29th January 2000 and entered into force on 11th September 2003. By June 2020, 173 countries had ratified the Protocol, the latest country being Sierra Leone. The objective of the Cartagena Protocol on Biosafety is to contribute to ensuring the safe transfer, handling, and use of living modified organisms (LMOs) that may have adverse effects on the conservation and sustainable use of biological diversity, considering risks to human health.

Kenya ratified the CPB in 2003 and is also in the process of acceding to the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety that entered into force on 5th March 2018.

Domestication of the Cartagena Protocol on Biosafety in Kenya

Kenya was the first country to sign the Protocol in the year 2000, which was later ratified in the year 2003. The National Biosafety Authority (NBA) is the Competent National Authority and Focal Point to the Cartagena Protocol on Biosafety on all matters related to Genetically Modified Organisms in Kenya.

National Biosafety Framework in Kenya

(a) National Biotechnology Development Policy, 2006

In consideration of challenges facing mankind in the fields of health, agriculture industry and environment, the Government of Kenya identified biotechnology as an appropriate tool and vehicle that can deliver economic gains through intellectual property creation to expand entrepreneurial opportunities for industrial growth, reduction of poverty, and improvement of food security, health, and environmental sustainability. The National Biotechnology Development Policy was developed through a consultative process and approved by Cabinet in 2006. The policy provided for the establishment of a legal framework for regulating Genetically Modified Organisms, recognizing their potential benefits while also cognizant of potential risks arising from their utilization. Due to the lack of administrative structures to enforce biosafety laws, the policy also recommended establishing the National Biosafety Authority through an Act of Parliament.

(b) Biosafety Act, 2009

The Biosafety Act was enacted in February 2009 with the following objectives.

a) To facilitate responsible research and minimize risks that may be posed by genetically modified organisms;

b) To ensure adequate level of protection in the development, transfer, handling and use of genetically modified organisms that may have an adverse effect on the health of the people and the environment; and

c) To establish a transparent, science-based and predictable process for reviewing and making decisions on the development, transfer, handling and use of genetically modified organisms and related activities.

(c) Establishment of the National Biosafety Authority

Following the approval by the Cabinet of the National Biotechnology Development Policy and enactment of the Biosafety Act, the Government of Kenya established the National Biosafety Authority in October 2010 with the overall mandate to regulate all activities involving genetically modified organisms (GMOs) in food, feed, research, industry, trade and environmental release with a view to ensure the safety of humans, animals and protection of the environment. The functions of the Authority include;

a) Consider and determine applications for approval for the development, transfer, handling and use of genetically modified organisms and related activities following the provisions of the Biosafety Act;

b) Coordinate, monitor, and assess activities relating to the safe development, transfer, handling and use of genetically modified organisms to ensure that such activities do not have an adverse effect on human health and the environment;

c) Co-ordinate research and surveys in matters relating to the safe development, transfer, handling and use of genetically modified organisms, and to collect, collate and disseminate information about the findings of such research, investigation or survey;

d) Identify national requirements for manpower development and capacity building in biosafety;

e) Advise the Government on legislative and other measures relating to the safe development, transfer, handling and use of genetically

modified organisms;
f) Promote awareness and education among the general public in matters relating to biosafety;
g) Establish and maintain a Biosafety clearing house (BCH) to serve as a means through which information is made available to facilitate the exchange of scientific, technical, environmental and legal information on, and experience with, genetically modified organisms; and
h) To exercise and perform all other functions and powers conferred on by the Act

(d) Biosafety Regulations

Kenya has so far published four biosafety regulations to support the implementation of the Biosafety Act. These include;

(i) Biosafety (Contained Use) Regulations, 2011
These regulations cover activities on GMO while still in laboratory, greenhouse, growth chambers and confined field trials. The objective of these Regulations is to ensure that potentially adverse effects of genetically modified organisms are addressed to protect human health and the environment when conducting research.
A person shall not undertake research on GMOs without prior written approval from the Authority.

(ii) Biosafety (Import, Export and Transit) Regulations, 2011

The regulations aim at ensuring the safe movement of GMOs and/or derived products into, across and out of Kenya while protecting human and animal health and the environment.

(iii) Biosafety (Environmental Release) Regulations, 2011

These regulations cover activities involving the release of GMOs into the environment i.e. allowing farmers to grow them and their sale in the market. The objective of these regulations is to ensure that GMOs' potential adverse effects are addressed to protect human health and the environment before their placement in the market.

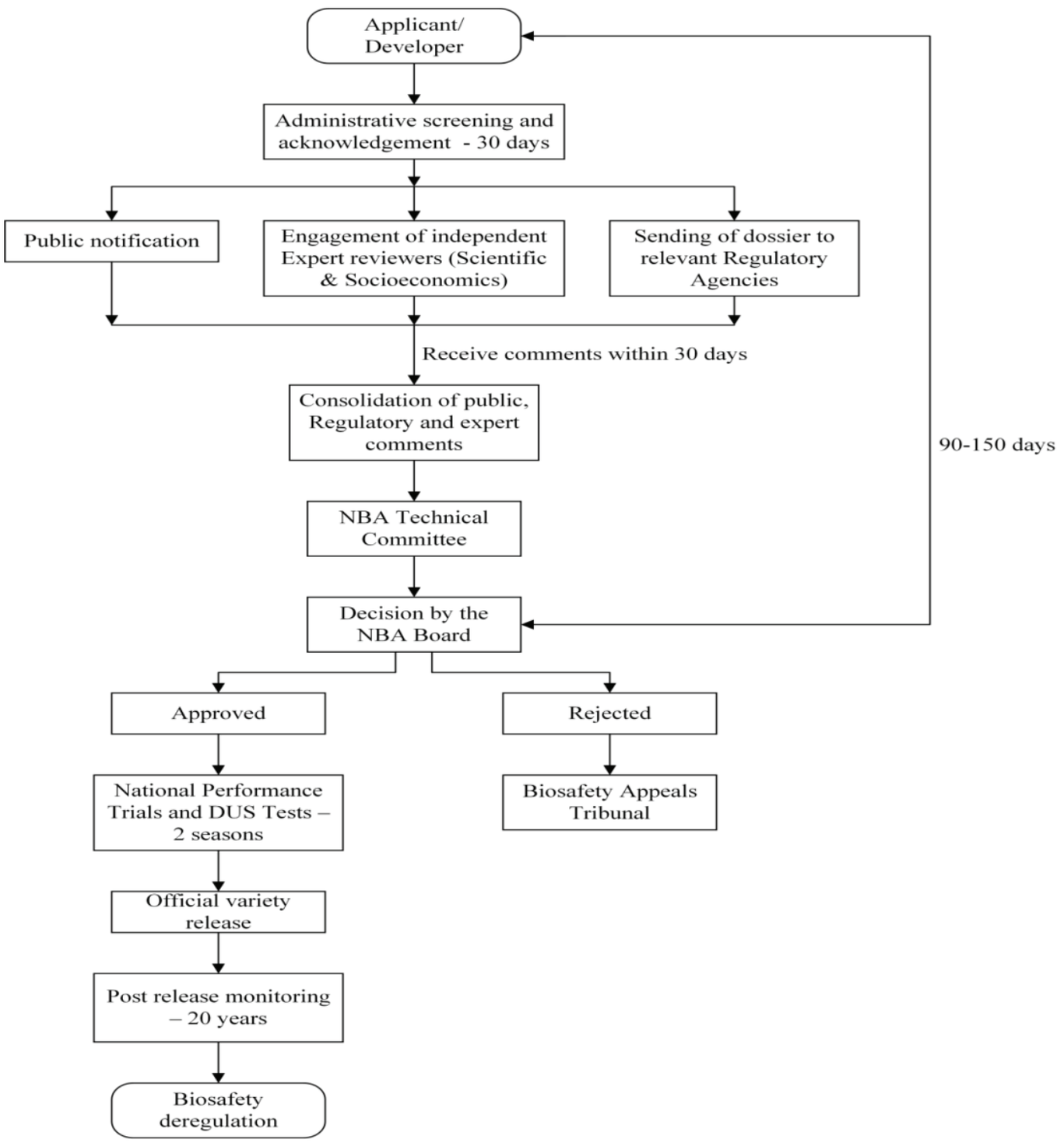
(iv) Biosafety (Labelling) Regulations, 2012

The essence of these regulations is to ensure that all GMOs or products containing 1% GMO materials are labelled while in the market. The objective of the Regulations is a consumer information and to provide a traceability mechanism for GMOs and derived products while they are in the market.
These four regulations have been instrumental in the conduct of genetic engineering research at laboratory and field trials, import-export, transit cultivation and placing on the market of GMOs in the country. To date, 33 contained use projects, 14 confined field trials have been approved and are at different levels of research in the country. Additionally, Bt cotton and Bt maize have been approved for National Performance Trials, with Bt cotton being commercialized in January 2020.

Decision-making Process for Environmental Release Applications

The decision-making process for environmental release applications entails the following steps: (1) the Applicant/developer fills a prescribed form and submits it to the National Biosafety Authority accompanied by applicable fees;
(2) the application is screened for administrative completeness and acknowledged within 30 days;
(3) engagement of independent biosafety experts to review food/feed safety, environmental and ecological safety as well as socio-economic data on the application;
(4) review of the application by other relevant Government bodies;
(5) Public notice of non-confidential information of the application;
(6) consolidation of public and expert's review comments by the NBA Secretariat; and
(7) review of the application by NBA Board Technical Committee and finally a decision by NBA Full Boar

Flowchart for the processing of environmental release GMO Applications



Status of Environmental Release Applications

The NBA has processed and concluded three environmental release applications while one application is under review, as summarized below.

S/No	Event	Trait(s)	Status
1.	**Bt Cotton**	Insect Resistance	Approved for commercialization in January 2020
2.	***Bt* Maize**	Insect Resistance	Undergoing National performance Trials (NPTs) in various regions in Kenya
3.	**Gypsophila**	Modified flower Color	Request Declined
4.	**Virus Resistant Cassava Event 4046 (VIRCA)**	Virus resistance	Approved for NPTs

Status of GMO Applications in Kenya

By Ann Muia

Presently, the National Biosafety Authority receives two main types of GMO applications: Contained-use (Research) and Environmental Release. In Kenya, GMO research includes activities conducted in the Laboratory, Greenhouse or Confined Field Trials (CFTs). Any research involving GMOs is undertaken in registered research institutions either inside a Biosafety level II containment facility (Laboratory and Greenhouse), or within a field that is appropriately controlled by specific measures such as physical barriers and isolation distances- to ensure safety for humans, animals and the environment. At the level of GMO research, the focus on biosafety is in ensuring the research materials are contained in the research facili

Status	Contained use (Lab / Greenhouse)	Contained use (CFTs)
Approved	35	14
Rejected/ Withdrawn	0	0
Pending	2	0
Total	37	14

ties; that is, entry of research materials into the food chain or environment is prevented.

Upon successful completion of research, a project can progress from contained use to environmental release. Key considerations used for environmental release include: Food safety (uses data generated according to Codex, OECD guidelines); Environmental safety (uses data generated according to Annex III of Cartagena Protocol on Biosafety) Socio-Economic parameters relevant to Kenya regarding the release of the GMO. Decision making considers Information submitted by the applicant; Risk assessment Report; Comments from Expert reviewers and Regulatory agencies and Relevant submissions by members of the public (public participation).

Some projects that have progressed to Environmental release are as summarized below:

Application/Project	Status
Bt maize	NPT stage
Bt Cotton	Commercialized
Modified colour Gypsophila flower	Rejected
Virus resistant Cassava	Approved for NPTs

The Authority received from the Kenya Agricultural and Livestock Research Organization (KALRO) and African Agricultural Technology Foundation (AATF) an application for environmental release, cultivation and placing on the market of insect protected MON 810 maize and its varietal derivatives in Kenya on 18th June 2015. Prior to making the environmental release application, KALRO had conducted three seasons of CFTs at KALRO – Kiboko in Makueni County from 2013 to 2014.

The Application was assessed and approved for conducting National Performance Trials (NPTs) on 28th January 2016. The sites for the NPTs were identified in 2016, and Environmental Impact Assessment (EIA) commissioned, with the report being submitted to the National Environmental Authority (NEMA) in 2016. An EIA license from NEMA was received in November 2019, allowing for the NPTs to be conducted. Six sites: Mwea, Embu, Kandara, Kibos, Alupe and Kakamega, were inspected and verified by NBA and KEPHIS in February 2020. Planting of the NPT sites was scheduled to commence with the April/May 2020 showers of rain, but plans were suspended due to Covid-19. The NPTs started later that year, in October 2020, under the supervision of NBA and KEPHIS Inspectors.

Post-Release Monitoring of Genetically Modified Organisms

- By Ann Muia

Figure: MON810 Maize crop at Embu

Genetically modified organisms (GMOs) have been cultivated and consumed for over two decades in many parts of the world. Even though GMOs are still rigorously regulated in most countries, to date, no harm, either to human health or the environment, attributable to GMOs has been substantiated. Notwithstanding that hundreds of GM crops are as safe as their non-GM counterparts; post-release monitoring remains a requirement in Kenya's regulatory decision-making for environmental release. This is the monitoring following approval for open cultivation and placing on the market.

The Biosafety (Environmental Release) Regulations, 2011, requires post-release monitoring of GMOs for 20 years. Following this period, if the Authority establishes that the GMO poses no risk to human health and the environment, the GMO may continue to be released to the environment or placed on the market without further monitoring requirements.

Post-release monitoring of GMOs could help identify new, unanticipated risks resulting from the interaction of the GMO with a complex environment over a large expanse of agricultural land over an extended period. It can also help inform decisions on similar applications in the future. Post-release monitoring of GMOs is the responsibility of the developer working together with the National Biosafety Authority and the relevant regulatory agencies.

Two approaches have been proposed in different regions/ countries:

i.General surveillance for unanticipated adverse effects

ii. Case-specific monitoring to detect direct and indirect effects which have been identified in the environmental risk assessment

In general surveillance, GMOs can be monitored using measurable variables based on baselines previously established from existing

biodiversity surveys data, data from current cultivation sites and scientific literature. General surveillance can also use actual damage alerts associated with GMOs as an indicator of possible harm. The second option allows for valuable contribution by technology users, both direct and indirect. Both systems require a well-built information network with accessible and appropriate communication tools.

Globally, case-specific monitoring has rarely been required. This is because only GMOs that have undergone extensive environmental impact assessment and found to pose negligible risks are usually approved for environmental release. However, if harm associated with a GMO is reported during the general surveillance, it could trigger case-specific monitoring. If a GMO with supposed non-negligible risks were to be approved for environmental release, case-specific monitoring would be done to ensure proposed mitigation measures are implemented and effective.

An effective monitoring system should achieve the intended results of ensuring food and environmental safety with reasonable use of resources and creating an enabling environment for developers, both local and international.

NATIONAL PERFORMANCE TRIALS

A Step Closer Towards the Commercialization of Bt Maize (MON 810) in Kenya

- By Julia Njagi and Ruth Okongó

The Kenya Agricultural and Livestock Research Organization (KALRO), through its Institutional Biosafety Committee (IBC), submitted an application to the National Biosafety Authority (NBA) in 2010 to conduct confined field trials (CFTs) of MON 810 maize, containing cry1Ab gene (Bt maize) against stem borer pests in Kenya. The application was reviewed and approved in 2011. Following successful completion of the CFTs, application for environmental release, cultivation and placing in the market of the event MON 810 was submitted by KALRO, who is the main applicant and AATF is a co-applicant in 2015 to the NBA.

A review was done, and a limited approval for National Performance Trials (NPTs), subject to the applicant conducting an environmental impact assessment (EIA), was granted in 2016. The sites for the NPTs were identified in 2016, and EIA commissioned, and consequently, the EIA report was submitted to the National Envi-

Data Collection on the extent of damage by the Stem borers in one of the NPT Sites

ronmental Authority (NEMA) in 2016. In November 2019, the applicants received the much-awaited EIA license from NEMA, allowing for the NPTs to be conducted.

The conduct of the NPTs is a responsibility of the Kenya Plant Health Inspectorate Service (KEPHIS), which serves as a requirement for evaluating the event's performance before a variety is released. The NBA and KEPHIS jointly supervise NPT sites to check the site's suitability for the activity, planting, and harvesting until post-harvest monitoring. Six (6) KALRO sites, i.e. Kandara, Mwea, Embu, Kibos, Kakamega and Alupe, were identified for the one season NPTs since the maize candidates proposed to be evaluated were Essentially Derived Varieties (EDVs), meaning that they have already been released as conventional varieties hence the need not to undergo two testing seasons. Verification of the sites was jointly done by KEPHIS, NBA and TELA project team (KALRO, CIMMYT, AATF, BAYER, and MOALF) in January 2020. Preparation of the six sites commenced, followed by planting, which was done on the 26th – 28th August 2020 in the Western Kenya Region and 20th – 22nd October 2020 in the Eastern Kenya Region, based on the short rain timelines in the different regions.

Harvesting and data collection at one of the six NPT sites Jointly Supervised by NBA and KEPHIS

Following a successful one season NPTs, the harvesting in all of the six sites was conducted between January-March 2021 under the supervision of NBA, KEPHIS, KALRO staff, and the TELA Kenya team. The sites are to be monitored post-harvesting for three months, after which they will be released for other activities.

GENOME TRAINING

Board Members undertake Biosafety Risk Assessment Workshop

- By Nehemia Ng'etich and Abook Brian

NBA and KEPHIS Board members and CEOs at a photo session during the Biosafety Risk Assessment and Genome Editing Technologies Workshop in Nairobi. The two-day workshop equipped them with the knowledge of the regulatory process of genome-edited organisms and products in Kenya.

The National Biosafety Authority (NBA) and the Kenya Plant Health Inspectorate Service (KEPHIS) conducted a Biosafety Risk Assessment Workshop on 4th – 5th March 2021 at the Movenpick Hotel in Nairobi. The training familiarized the board members of NBA and KEPHIS to the critical areas of consideration that form part of the decision-making process during the approval of Genetically Modified Organisms (GMO) applications.

During the two-day workshop, the board members got trained on the Biosafety assessment and genome editing technologies.

The National Biosafety Authority (NBA) was established pursuant to the Biosafety Act No. 2 of 2009 following the ratification of the Cartagena Protocol on Biosafety. The overarching mandate of the NBA is to exercise general supervision and control over the development, transfer, handling, and use of GMOs to ensure the safety of human and animal health and provide adequate protection of the environment.

In implementing the Biosafety law, the NBA collaborates with eight (8) other regulatory agencies in the Biosafety Act. These agencies include the Department of Public Health, Department of Veterinary Services (DVS), Kenya Bureau of Standards (KEBS), Pest Control Products Board (PCPB), Kenya Plant Health Inspectorate Service (KEPHIS), National Environmental Management Authority (NEMA), Kenya Wildlife Service (KWS) and the Kenya Industrial Property Institute (KIPI).

Regarding all crop-related applications, NBA works with KEPHIS in reviewing the applications and inspecting the facility before the commencement of the work. They also work together in the inspection and monitoring within the course of the project. Although the NBA uses external professional reviewers to assess biotechnology applications, the NBA Board is the final and legally obligated decision entity before any approval of GMOs in Kenya.

NBA Conducts Sensitization Workshop at the Namanga One-Stop Border Post

- By Alex Ng'etich

The National Biosafety Authority (NBA) held a sensitization workshop for its stakeholders situated at the Namanga One-stop Border Post. The workshop offered a chance to sensitize the NBA stakeholders on; GMO surveillance, Mandates of the Authority, Safe handling of GMO related matters within the border, the GMO import or export requirements in Kenya, the penalties in case of contradicting the conditions and the updates on the GMO approval in Kenya.

During the workshop, Biosafety Officers further demystified the myth that GMOs are distinguishable from non-GMOs through the naked eye. The participants were informed that a GMO product is only identifiable by molecular or protein detection in the laboratory. It is impossible to determine a GMO product by the naked eye or other physical features such as size and colour.

A total of 28 participants from various agencies and local authorities within the border post attended the workshop. Among them was Mr Stephen Komora, the Assistant County Commissioner, Ololilai Sub-County- Namanga Division. While addressing the participants in the closing session, he appreciated the initiative and added that the NBA had set a good precedent by creating awareness of its mandate and its role in addressing food safety and security.

According to the provisions of the Biosafety Act No. 2 of 2009, the mandate of the NBA is to exercise general supervision and control over the development, transfer, handling and use of genetically modified organisms (GMOs) to ensure the safety of human and animal health and provide adequate protection of the environment.

A group photo of the participants after the sensitization workshop in Namanga One-stop Border Post. The workshop took place on 25th March 2021

PHOTO GALLERY

Amb. Simon Nabukwesi PS, State Department for UniversityEducation & Research (3rd Right) having a photo session with the CEOs of the State Agencies based at NACOSTI building. On his left is Prof. Dorington O. Ogoyi, the Chief Executive Officer, National Biosafety Authority

National Biosafety Authority (NBA) Board members in a group photo with the NBA top management team

Prof. Dorington Ogoyi, the Chief Executive Officer, National Biosafety Authority (2nd Left, seated) in a group photo during the NPT field rials for TELA maize at KALRO, Kandara

Prof. Dorington Ogoyi, the Chief Executive Officer, National Biosafety Authority (2nd Right) during the NPT field trials for TELA maize at KALRO

LAST WORD

Decide To Act Now

- By Moipei Mike Mareru and Sheewa Saikah

The human species was the luckiest of all creation. Theologians will tell you that man is the only of God's creation with free will-freedom of choice-that means every day you wake up; you have the choice to do absolutely what you want. In the back of my mind, every day when I wake up, I can either choose to be good or bad. However, when I came to Nairobi, someone strongly advised me against the former for reasons not relevant. Free will is a priceless gift given to humanity; in retrospect, so much civilization came about by this, including feminism (ha-ha).

Sadly, free will also is a curse. Free will gives you freedom of choice which in turn gives you a decision. Decisions we make determine who we become in this life; all small and big decisions you ever made or failed to make in your life made you who you are now. This fact bothers me, and it should bother you too. Decisions we make now makes us who we are later, but it doesn't just stop there. There is acting on those decisions. Chronologically, make a choice, decide and act on it. I'm here to say choose to act now.

Sensational ideas are lying dead in graveyards; exceptional potentials not realized because the instigators of those ideas chose to procrastinate the action part, and they were caught up with time. Wondering why people stalled their actions on their decisions? Well, biggest culprits will be lack of confidence, fear, laziness and a bunch of other excuses like readiness.' I can't do it now coz I have a young family, 'until I'm financially stable, I'm not starting that', 'women are not supposed to do that anyway', are some of the excuses you hear folk make. Well, I have news for you, Mrs./Mr. Deferment, if you want an extraordinary life, you better start working on those dreams right now, start that company, take that higher education program and most importantly, stop those excuses and shun that fear. Someone said start, and if you fail, next time you start, you won't be starting from scratch, but it will be from experience.

You don't need to get ready; you are good enough now, you know enough now what you don't know, you will learn along the way, a failure is an event that leads to learning, so don't fear anything. This is your moment. The stage is set, the pieces are in place, no ifs or maybes, don't hesitate and go-ahead Act
The biggest regret you will have later in life is not taking the actions you know you should have taken and what could have been.

BIOSAFETY NEWS

Figure: MON810 Maize crop at Embu

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