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1. Quality Assurance

QUALITY ASSURANCE

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QUALITY ASSURANCE

1. **Introduction**

- What is quality assurance?

-**Quality assurance** refers to the processes and procedures that systematically monitor different aspects of a service, process or facility to detect, correct and ensure that quality standards are being met. It uses **process**-driven approach with specific steps to help define and attain goals.

- increase customer confidence,
- company credibility
- improve work processes and efficiency
- enable company to better compete with others

1:2 ISO 9000 Certification

ISO 9000 is an international standard that many companies use to ensure that their quality assurance system is in place and effective. The standard provides a **tried and tested framework** for taking **a systematic approach** to managing an organization's processes so that they consistently turn out product that satisfies customers' expectations.

KEPHIS;

-adopted ISO 9001:2008 to ensure delivery of quality service to clients

-Certification body: Kenya Bureau of Standards (KEBS)

KEPHIS Testing laboratories –ISO/IEC 17025:2005-Seed Testing-ISTA

Analytical Chemistry Lab-SANAS

1:3 Successful introduction of QA will require the following steps:

- Involving all staff in describing the procedures used
- Documenting the procedures
- Making changes where the requirements of the quality system are not met
- Linking documents together into a set of operating

procedures based on client needs

- Monitoring the application of these procedures
- Making changes on a continuous basis

1:4 Main elements of ISO 9001:2008

1. Scope **2. Normative Reference** **3. Terms and Acronyms** **4. Quality Management System** **4.1 General** **4.2 Documentation Requirement**	**7. Product realization** **7.1 Planning of Service Realization** **7.1 Customer Related process** **7.3 Design and Development** **7.4 Purchasing** **7.5 Service Provision** **7.6 Control of Monitoring and measuring Equipment**
5. Management responsibility **5.1 Management commitment** **5.2 Customer focus** **5.3 Quality policy** **5.4 Planning** **5.4.1 Quality Objectives** **5.5 Responsibility, Authorities and communication** **5.6 Management Review**	**8. Measurement, Analysis and Improvement** **8.1 General** **8.2 Monitoring and measurement** **8.2.1 Customer satisfaction** **8.3 Control of non -conforming services** **8.4 Analysis of Data** **8.5 Improvement**
6. Resource Management **6.1 Provision of resources** **6.2 Human Resources** **6.3 Infrastructure** **6.4 Work environment.**	

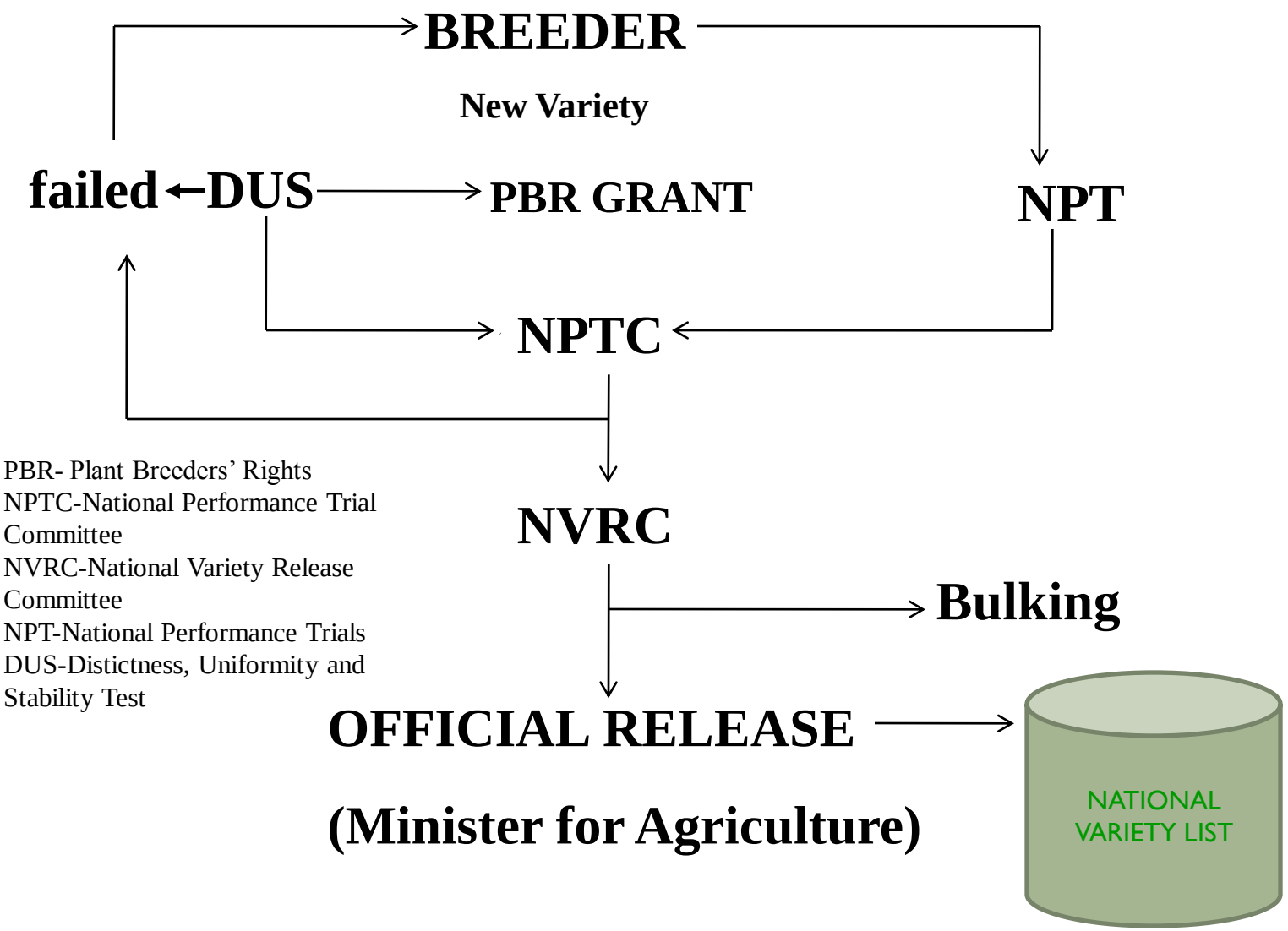
2.Seed Quality Assurance Services

- Objective – To ensure that farmers receive high quality input so as to maximize their crop production.
- Seed Quality Assurance Services operate within the guidelines and procedures stipulated in The Seeds and Plant Varieties Act (Cap 326) of the laws of Kenya.
- Kenya is a member of;
- I)The International Union for Protection of New Plant Varieties (UPOV), 1978 convention.
- II) The International Seed Testing Association (ISTA)

2.1: Quality Assurance: Seed Certification and Plant variety Protection

- Ensure Availability of high yielding varieties
- Ensure that the best quality seeds are produced and sold to farmers
- Prevent the spread of weeds, pests and diseases
- Meet consumer demands for specified qualities
- Comply with mechanization of agriculture
- Provide basis for healthy competition among seed Merchants

2.2 Variety Release Procedure



PBR- Plant Breeders' Rights
NPTC-National Performance Trial Committee
NVRC-National Variety Release Committee
NPT-National Performance Trials
DUS-Distictness, Uniformity and Stability Test

2.3 Quality control during Field Inspection include:

1. Exclusion of noxious weeds
2. Admixtures from other plants of the same species
3. Cross pollination
4. Freedom from diseases/pests
5. Crop is true to type

Category	isolation distances in meters
Basic maize	400
Basic beans	50
Certified seed maize	200
Certified seed beans	25
Isolation by time	

2.4. SEED QUALITY CONTROL DURING PROCESSING -SIZE GRADING

- Involves separation of seed into different sizes eg Maize-

HP-hand plant

MF-Medium flat

LF-Large flat

- Potatoes-

Size 1-28-45 mm

Size 2-46-60mm

2.5. LOT EXAMINATION

Lot examination is carried out to ensure that the seed lots meet processing standards. Maize: No more than 2.5% of cracked, diseased and shriveled seed

Crop	Screens (Bottom sieve) mm	Screening allowed	grades
H. maize	7.8	5	LF,LR,MR, MF,HP
O. Maize	6.75	5	LF,LR,MF, MR,HP
Wheat	2.2	5	-
Barley	2.3	5	-
Oats	2.0	5	-
Potato	28.0-45.0 46.0-60.0	- -	5 tubers per 50 kg bag allowed

2.6. TREATING

Seed treatment refers to the application of fungicide, insecticide, or a combination of both, to seeds.

Benefits of Seed Treatment:

1) Prevents spread of plant diseases
2) Provides protection from storage insects
3) Controls soil insects

2.7. Seed Testing

- All processed seeds must be sampled for laboratory analysis.
- The object of laboratory test is to determine the value of seeds for planting
- Seeds are tested for: -
  - Purity
  - Germination
  - Moisture content
  - Health status

2.8. Post control of seed lots

Objective of post control is to check the accuracy and efficiency of the work in the previous season

Seed lots of Swiss Chard showing mixtures

Fruits from two different seed lots of Tomato reported as the same variety.

2.8. Post control of seed lots

Anomalies noticed during post control of Maize seed lot

Anomalies noticed during lot inspection of Maize seed lot.

Typical maize cobs of the variety are on the left

2.9. PACKAGING AND LOT NUMBERING AND LABELLING

- After the seeds are tested and found to meet the minimum standards they are bagged, labeled and lot numbers printed on the bags
- Packets designed to hold convenient quantity for handling and transportation
- Seed inspector ensures the seed meet the germination and purity standards before Marketing

2.10.POSTCERTIFICATION

Seed Inspectors visit the seed sellers and check for;
-Whether the seed seller is lincensed by KEPHIS
-Storage condition
-Seed Source , packaging and tampering with packet
-Validity of Seed lots

2.11.Seed Import and Export

- Only registered seed merchants are allowed to import or export seed.
- Seed merchants are only allowed to deal in their own seed or seed which they have consent from the breeder.
- Notice to Import/Export form (SR 14) have to be filled
- A seed import /Export Permit – SR 15 is issued specifying the species, variety, class and weight.
- Imported seed shall be accompanied by a phytosanitary certificate and an international orange certificate of the international Seed Testing Association and shall meet Kenyan quarantine requirement as set out in the Plant protection Act (Cap 324)

3.Challenge: MAIZE LETHAL NECROSIS DISEASE (MLND)

- The outbreak of MLND is a serious threat to food security in Kenya. Maize is Kenya's staple food.

Measures taken;

- Farmers are encouraged to use certified seeds and practice crop rotation
- Regular spray of crops with pesticides
- Uprooting and burning infected plants
- Use of Tolerant varieties
- All imported Maize seed must be tested for MLND

3.1.Challenge; Sale of Fake Seed

- Sale of Fake seed undermines crop production
- Sale of fake seed if not addressed, will aggravate yield decline
- Measures taken;
- KEPHIS registers seed merchants & stockists.
- Their stores are inspected regularly
- Awareness creation and trainings among stakeholders
- Encouraging many players to make quality seed available reduces chances of faking as a result of shortages

THANK YOU