

# **Internal quality requirements for seed companies including testing and record keeping**

By William Munyao

**KENYA PLANT HEALTH INSPECTORATE  
SERVICE (KEPHIS)**

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# What is Quality?

The extent to which requirements or expectations are met:

- requirements may be stated or implied
- quality refers to products and services

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# What is Quality Management?

## Definition

“Activities aimed at directing and running (controlling) an organisation regarding quality

## Quality plan

- ▶ **Explains how an organisation intends to apply the quality policy, to**
- ▶ **achieve the quality objectives and to meet quality system requirements**

# What is Quality Management?

- ▶ Quality control
- ▶ **Set of activities or techniques to ensure that quality requirements are being met**

Quality improvement

- ▶ **Enhance the capability to fulfil quality requirements**

Quality assurance

- ▶ **Set of activities to demonstrate that an organisation meets**
- ▶ **all quality requirements”**

# Why do seed companies need quality assurance?

- ▶ The bottom line!!

Our customers must have confidence

in the quality of product/service which must be:

- - **Reliable**
- - **Relevant**
- - **Reproducible**

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# Building blocks of a QA system

- ▶ **Q-Manual (Level A)**

Describes the quality system in accordance with the stated quality policy and objectives and the accreditation standard

- ▶ **Documented quality system procedures (Standard operation procedures) (Level B)**

Describes the activities of individual functional units

- ▶ **Other quality documents (Work instructions, forms, reports, etc.) (Level C)**

Consists of detailed work documents

# Seed production work flow

Planting preparation-site selection soil preparation and equipment preparation



Planting and equipment cleaning



Crop husbandry



Harvest and post harvest



Seed processing and storage



Seed sampling

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# Checks needed at every process

- ▶ Analysis of Product Integrity and Control Concerns (*identification of potential risk*).
- ▶ Determine Control Points (*Points to control the potential risk*).
- ▶ Establish Preventative Measures (*activities to manage the risk*).
- ▶ Establish Monitoring Procedures (*verification of implementation actions*).
- ▶ Establish Corrective Measures (*activities to address NCs*).
- ▶ Establish Verification Procedures (*to verify compliance*)
- ▶ Establish Record Keeping and Documentation Procedures



# Planting Preparation

## ▶ Seed source

- Source be authentic source
- Variety maintenance program
- Pedigree records

## ▶ Grower selection

- Criteria
- Contract
  - Training

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# Planting Preparation

- Support
- Communication
- Equipment Preparation and cleaning
- ▶ Map of the farm location

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# Planting

To ensure quality companies should provide a planting guide for the seed crop to the grower

- Time of planting,
- Seed Rate,
- Ratio of Female to Male parent
- Method of sowing,
- Machine cleaning,
- Seed packaging and labels preservation

# Crop husbandry

## ▶ The companies should have:

- Weed, pest and disease control produces
- Crop nutrition program
- Crop descriptors to aid in identification of offtypes
- Guidelines on detasseling
- Field inspection procedures and timing
- Crop standards (higher national standards)
- Records for all operations

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# Harvest and Transport

- ▶ Harvesting mode (machine or hand)
- ▶ Moisture content at harvest
- ▶ Separation of males and females (hybrids)
- ▶ Identification of seed during transport
  - Identification of harvested raw seed
  - Packaging and marking
- ▶ Transport hygiene

# Seed processing

- ▶ Procedures for processing and handling certified seed should be fully described.

This should include following:

- ▶ Seed delivery
- ▶ Drying of unprocessed seed
- ▶ Storing unprocessed seed
- ▶ Storing unprocessed seed
- ▶ Sampling and Uniformity
- ▶ Packaging and labelling

# Seed storage

- ▶ Companies should have program for:

- Control of pests and diseases for seed in store

- Monitoring seed storage conditions

- ▶ Records for all seed lots

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# Seed sampling

- ▶ Seed sampling procedures
  - Should be in accordance to international accepted procedures – ISTA
- ▶ Appropriate sampling tools
- ▶ Calibration requirement and records





# Sampling equipment



**Stick  
or sleeve  
triers**



**Spear or Nobbe triers**

# QA in seed testing

- ▶ Procedures for sample reception
- ▶ Seed testing methods for be in accordance with international protocols -
  - Moisture
  - Purity
  - Germination
- ▶ Storage of sample

# QA in seed testing

- ▶ Integrity of data
- ▶ Equipment
- ▶ Record keeping
- ▶ Record keeping
- ▶ Staff training
- ▶ Membership and participation in PT

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**END**

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**Thank you**

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