



VARIETY MAINTENANCE

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Seed Enterprises Management Institute

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Introduction

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- Access to genetically pure seed-stock allows producers to achieve maximum quality and performance of new and established varieties.
- Breeders seed constitutes the basis for all further seed production
- Unless the breeder's seed is of highest purity and quality the seed multiplied from it cannot be regarded as satisfactory and therefore affect the performance of a variety.

Introduction cont'd...



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- Reducing the contamination and ensuring quality particularly varietal purity and identity is of paramount importance.
- Therefore new lots of breeders seed must be regularly produced to be used to initiate production of later generations thro variety maintenance.
- Variety maintenance may therefore be defined as the perpetuation of a small stock of parental material through repeated multiplication following a precise procedure.

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Objectives of maintenance



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- To maintain genetic purity.
- To maintain the identity of the crop/variety.
- To maintain other good qualities of the seed.
- To maintain seed supply-use continuum

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Selection criteria



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- Trueness to type
- Uniformity
- Diseases
- Off-types/segregation
- Stand performance

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Sources of Seed Contamination

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- Genetic Contamination: this is the residual segregation, spontaneous mutations or undesirable natural out crossing due to inadequate isolation
- Mechanical Contamination: this results from very wide range but mainly due to insufficient cleanliness of field, equipment and inadequate measures to avoid contamination
- Pathological Contamination: occurs thro infections particularly with seed-borne
- Diseases or from pathogens from same variety, other crops or weeds

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Maintenance methods



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- **Purification system:** Used in situations where there is no organized procedure
- **Mass selection:** The individual best typical plants are selected, these individual typical plants are bulk harvested and the rest are discarded. The resultant seed is used for further multiplication.
- **Ear to row:** Considered to be the best method. Single plants typical of variety are selected, harvested and kept separately. These seeds are planted in rows; during production, rows and rows with off-type plants are discarded, conforming off-type rows are bulked for further multiplication.

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Maintenance methods cont'd...



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- Maintenance can also be done for Varieties undergoing tests and have potential for release
- These varieties must have undergone DUS and in 2nd season of NPT.
- Seed is obtainable from the 2nd seasons' test crop.
- Bulking is done at breeder's risk

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Maintenance responsibility

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- It's the responsibility of the maintainer to maintain the parental materials of a released variety.
- A maintainer is a person or organization responsible for maintenance of a bred variety (maintenance of a variety may be shared)
- Under the Kenyan laws, the breeder is the responsible person however he can designate maintainer(s) through licensing. KEPHIS role in this process is to monitor the implementation of procedure, assess variety with breeder, keep records and finally label and seal.
- Large scale commercialization of a variety is linked to effective variety maintenance and seed production continuum.

END



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□ THANK YOU

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