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Standard Operating Procedure (SOP) for Seed Packaging for Planting

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1. Introduction

Seed packaging processes in any breeding program is very important. Seed packaging procedures are fundamental to the long-term, cost effective and efficient conservation of plant genetic resources. This document describes standard operating procedures (SOPs) for implementing seed handling processes. This is a living document subject to update to accommodate current learning and workflows in the breeding cycle.



2. Purpose

The purpose of this SOP is to guide the Seed Processing activities and to outline the roles, responsibilities, and procedures to be followed in conducting seed packaging for planting in maize breeding program.

3. Scope

This SOP contains the Seed Processing procedure required for maize breeding activities. It includes proper packing, sorting, arrangement and labelling of packages.

4. Definition of terms

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5. *Roles and Responsibilities*

All staff involved in implementing breeding activities in the maize program at IITA must follow this SOP. No alteration should be made to the procedures unless approved exceptionally by the program leaders.



Crop Lead (CL) Responsible for the overall management of the trials and for delegating team responsibilities. The CL is the lead breeder and coordinator of Maize Improvement Program at IITA.

Breeder (B): Coordinate the field layout of experiments, planting and checks on the implementation of defined protocols on the different experimental sites. Ensures all trials are established in the on-station and out-stations respectively. This includes trial management and data collection.

Trial Manager (TM): Oversees trial preparations and management protocols, land acquisitions, oversee planting in the outstations. Also supervises planning of inputs and other planting logistics for the various stations.

Research Supervisor (RS): Coordinates the activities of the Research Technician to ensure that assigned tasks are carried out correctly. The RS involves in planting, field management and post-trial management practices as well as coordinates fertilizer application in on station and outstation experimental fields. S/he involves in the Nursery and seed increase protocols as delegated by the CL and B respectively.

Research Technician (RT): The Research Technician performs field tasks as defined in the trial protocols such as field data collection or field management practices. RT's responsibility is to perform assigned tasks including the use of digital tools defined in the protocol for capturing, storing, transmitting, and ensuring quality of data within defined time periods.

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Germplasm Dispatch Assistant (GD): Coordinates Maize germplasm requests (local and international) from collaborators. Oversees maintenance of Maize Germplasm storage system and ensures proper storage of maize seeds in the Cold store. S/he is involved in seed preparation and seed packaging workflows in the Maize program. Maintains the seed inventory for the Unit. Liases with the Genetic Health Unit (GHU) to obtain Phytosanitary certificate and Seed health statement where it is required and import permit for importation of germplasm from countries through the PQS.

6. Procedure

6.1 Entry list and envelope or label printing

Entry list and envelope or label printing

1. Obtain an entry list
2. Check if the seed on the entry is available in the seed store
3. Tick available seed and submit the list
4. Make sure you have the stapler, measuring cups, and seed counter.
5. Layout the bags in new entry order, for easy identification during packing
6. Once the entry list is confirmed, Have the list uploaded in Field book/EBS
7. Randomize the trial, keeping in mind the number of environments
8. Export the planting labels from Field book/EBS
9. Print the information direct on the envelopes
10. Check entry list and envelopes to ensure that you have x amount of entries * y amount of locations* z number of replications = total number of plots.
11. Make sure you put the envelopes according to entry numbers

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12. Put the envelopes to be packaged on top of the corresponding bag of seed.
13. Make sure that the information on the envelope matches the information on the label inside the bag

6.2 Packing and sorting envelopes

1. Before packing make sure the seed is cleaned
2. Make sure all seeds look alike: Remove off-type seeds
3. Count and pack seed in the envelope
4. Make sure to refer to the number of seed per envelope listed on the entry list, fill the proper number of envelopes to total the # of seed per plot listed on the entry list.
5. Once all the envelopes are packed, make sure each envelope is stapled.
6. Start by sorting according to site number, then location number and put them in planting order.
7. Counter check the seed arrangement to make sure you have not missed or left out any envelope
8. Using rubber band tie envelopes together to help in packing in plastic for shipment.
9. Pack in plastic and place boxes, ready for shipping and planting

7. *Appendix*

7.1 Contacts for support

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For Issues relating to seed packaging, you can contact: Ojo Tayo T.Ojo@cgiar.org, Dabo Yinka O.Dabo@cgiar.org, Layi Adeniyi L.Adeniyi@cgiar.org and Jelili Adedoja J.Adedoja@cgiar.org.

8. *References*
