STANDARD OPERATING PROCEDURE (SOP) FOR SEED PROCESSING, SEED INVENTORY AND MANAGEMENT IN CASSAVA

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1. **Introduction**

Cassava is primarily grown via stem cuttings (stakes?), but can also be propagated by seeds. Seed propagation is important to create novel gene combinations and superior cassava varieties. In cassava breeding, "seed processing" refers to the process of preparing harvested seeds, also known as "botanical seed," for sowing, distribution or storage while maintaining their viability and vigor.

2. **Purpose**

The purpose of this document is to describe a step-by-step procedure of botanical seed processing in cassava breeding programme.

3. **Scope**

This document describes the processing and inventory of cassava seeds used by the IITA Cassava Breeding Programme

4. **Definition of terms**

Viability: It is the ability of a seed to germinate and produce a healthy seedling

Vigour: It refers to how quickly seeds germinate

Botanical seed: It is a mature fertilized ovule, which comprises an embryo, food reserves and a seed coat.

5. **Roles and Responsibilities**

**Research Supervisor**: coordinates activities involved in seed processing: shelling, sorting, recording, packaging and labeling of seeds.

**Research Technician/Field worker**: leads the sorting, shelling, recording, packaging of seeds and data entry. He serves as the link between the supervisor and the processing centre and ensures all cassava inventories are updated.

**Data Manager**:
- Ensures all the seeds envelopes are barcoded with the relevant information
● Uploads seed information to Cassavabase

### 6.1 Procedure/Protocols for seed processing and inventory

- Harvest fruits (crosses) from the field with the bag and cross IDs intact.
- Sun dry fruits that are not completely dry.
- Shell - remove seeds from the fruits.
- Transfer shelled seeds into a labeled seed envelope with the correct tag inside. Merge seeds of the same pedigree into a seed envelope. A tag should contain information on the date of pollination, number of pollinated flowers, parent (female and male) clones, and location of the field.
- Sort according to pedigree and locations. Seeds to sow are separated and made ready for sowing.
- Record number of seeds per pedigree as well as the constituting parents (female x male)
- Arrange the seed envelopes in a polythene bag and then transfer them into a seedbox – a seed box carries a label showing information on the crossing block, location, and year of harvesting for easy identification and access.
- The seedbox is then moved to the cold store at 5°C and 60% relative humidity.

### 7. References


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| **Page #** | 4 of 4 | **Last Reviewed/Update Date** | 5/6/2024 |
| **SOP Owner** | Bakare Daniel | **Approval Date** | 5/28/2024 |
8. **Annex: Forms/Templates to be used for monitoring and data collection**

Template used for data collection on seed information from Hybridization process

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