STANDARD OPERATING PROCEDURES (SOP) FOR CASSAVA BREEDING PROGRAM AT TARI-TANZANIA

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Parental selection and establishment of the crossing block

- **Define national breeding objectives**
    - CBSD resistant
    - CMD resistant
    - High DMC
    - B-carotene
    - High yield
    - Low cyanide level
- **Assemble breeding germplasm**
    - From existing and exotic sources and evaluate their breeding values.
- **Select parents for breeding**
    - Use phenotypic information for parental selection (i.e. mean performance, stability across environments, flowering/sprouting/seed set ability)
    - Keep pedigree information for diversity maintenance
    - Use genomic information to help in kinship and estimation of Gebvs
- **Establishment crossing block and target environments**
    - Identify mega environments for breeding
    - Characterize target environments
    - Should have suitable weather to help flowering
    - Have irrigation systems for supplementing water
    - Determine the size of land needed based on number of parents and crossing sizes
    - Preparation of land two weeks to planting of parents(plouging/harrowing/ridging)
- **Planting parents and establishing crosses**
    - Identify and retrain an experience crosser(s)
    - Determine the field design and layout
    - Define planting spacing (1 x 1 m), number of plant per genotype (i.e. 40), time of planting (i.e. November-December)

- Define the time of making crosses (i.e. Mid-day) and time for collecting pollen from male parents (i.e. morning)
- Assemble materials needed during crossing (i.e. pollination bags, labels, marker pen, log book etc.)
- Define management activities in the crossing bock (i.e. weeding, irrigation etc.) and appropriate time of doing it (i.e. weeding after every two weeks)

- **Monitoring successful crosses, seed collection, seed processing and seed storage**
  - Identify experienced individual
  - Define time period for monitoring successful crosses after pollination (i.e. one week after pollination).
  - Define signs for fruit maturity to avoid seed lost through shuttering
  - Define time period for seed collection (i.e. Daily after the onset of fruit maturation)
  - Assemble materials for keeping the seeds (i.e. envelope)
  - Define procedure during seed processing to avoid seed mixing
  - Define storage conditions of seeds after processing