

Managing within Varietal Variation in the Context of Collection of a Clonally Propagated Crop



The evidence

At least ten studies showing genetic variation *within* varieties having the same name and without evident morphological variation

- Where does intra-varietal variation come from?
- What are the implications for farmers?
- What are the implications for collection?
- What are the implications for genebank management?

Where does intra-varietal variation come from?

Within a farm:

- Selections from seedlings
- Mutation

What are the conditions that favor new on-farm genetic diversity?

Most often associated with more traditional systems, especially *slash and burn*

In Brazil (Sambatii et al. 2001) seedling cassava observed after more than 20 years, after slash and burn



Several studies over the past few decades documenting conscious and unconscious propagation of seedling plants

- Initial selection often unconscious – stakes collected for next planting without regard to performance
- New variants typically given the name of landrace nearest in appearance.

Where does intra-varietal variation come from?

From introductions:

- Introduced variety from neighbors or elsewhere given same name as existing one with similar traits, but genetically different

During exploration and collection

- Be aware of possible small morphological differences within a variety, within a single farmer's field
- Be aware of differences among varieties with the same name, in different farmers' fields
- Collect at least a few plants of each variety and bundle/label the stem pieces separately for each plant origin

“For cassava, in situ conservation provides the only viable option for conserving diversity and the dynamic process that generates, maintains and turns over this diversity.”

Salick et al., 1997, in studies of the cassava production of the Amuesha of the Peruvian Upper Amazon.