

Impact of Seed Germination Data on Genebank Management



UID: 93952



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Introduction

Seed viability data on plant genetic resource accessions in cold storage is critical information that impacts many areas of genebank management. Prior to 2002, little germination testing was conducted at the Plant Genetic Resources Conservation Unit (PGRCU), Griffin, GA. This poster presents the impact that consistent germination testing in the past 13 years has had on genebank management.

Management prior to 2002

Germination testing

- Only 5% of the collection at Griffin had been tested for germination.

Seed storage

- Most seed was stored at 4C.
- No viability testing was conducted on stored seed accessions or inventories.

Selection for regeneration

- Accessions were selected for regeneration based on seed age and number.
- Newly regenerated accessions were not tested for seed viability.

Distribution

- Inventory distributed was solely based on seed age and number.
- Users received seed of unknown viability.

Current Management

Germination testing

- 91% of the collection has been tested for germination.

Seed storage

- 81% of the accessions have most seed stored at -18C.
- Viability testing has been conducted on at least one inventory for 91% of the seeded accessions and on more than one inventory for 36% of accessions.
- A representative sample of distribution inventories are being retested for seed viability every 10 years after initial viability test.

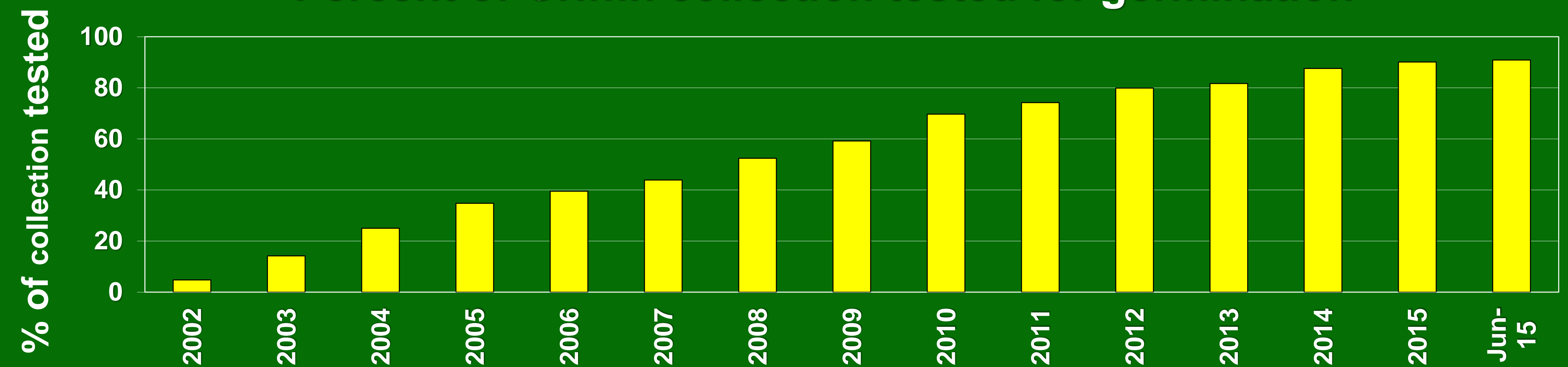
Selection for regeneration

- Accessions are selected for regeneration based on seed viability and number.
- Maximum genetic variability is being retained in each accession by not conducting needless regenerations.
- All newly regenerated accessions are tested for seed viability.

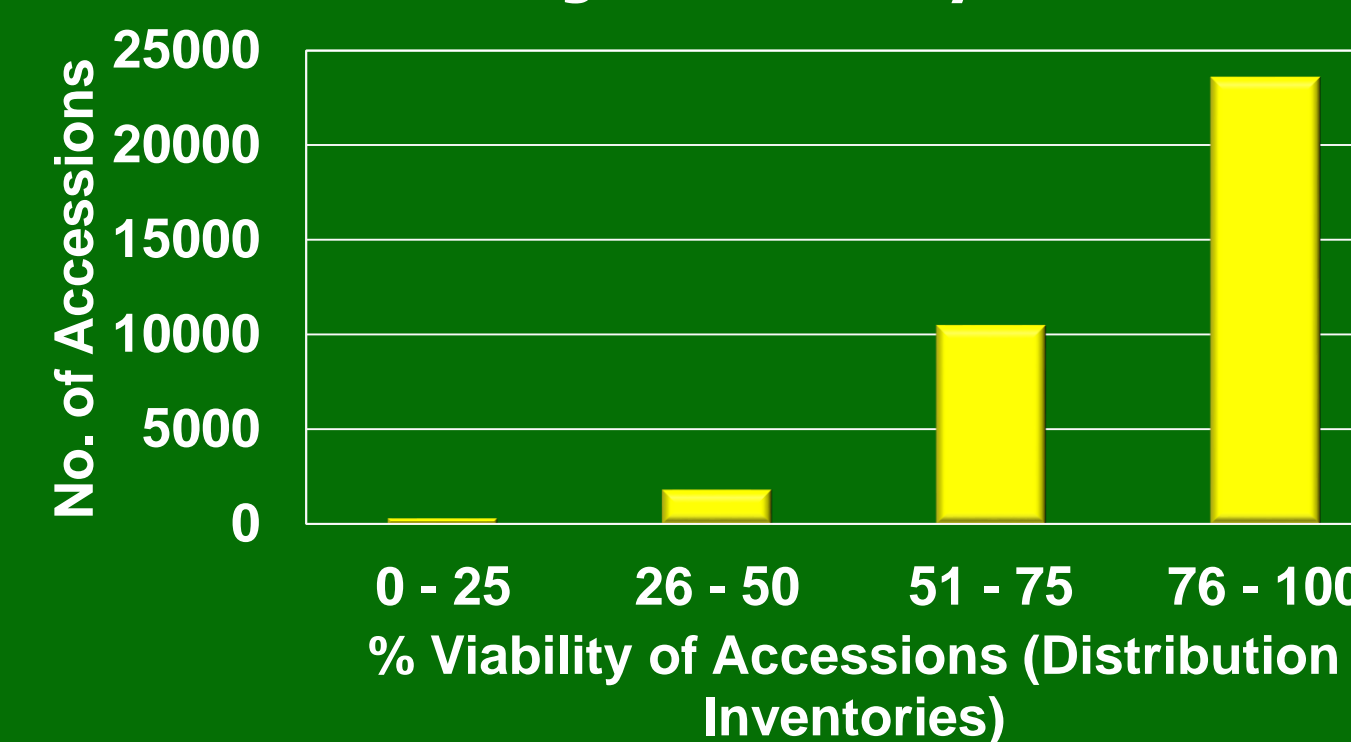
Distribution

- Inventory distributed is based on seed viability and number.
- Users receive seed of the most viable inventory of each accession.

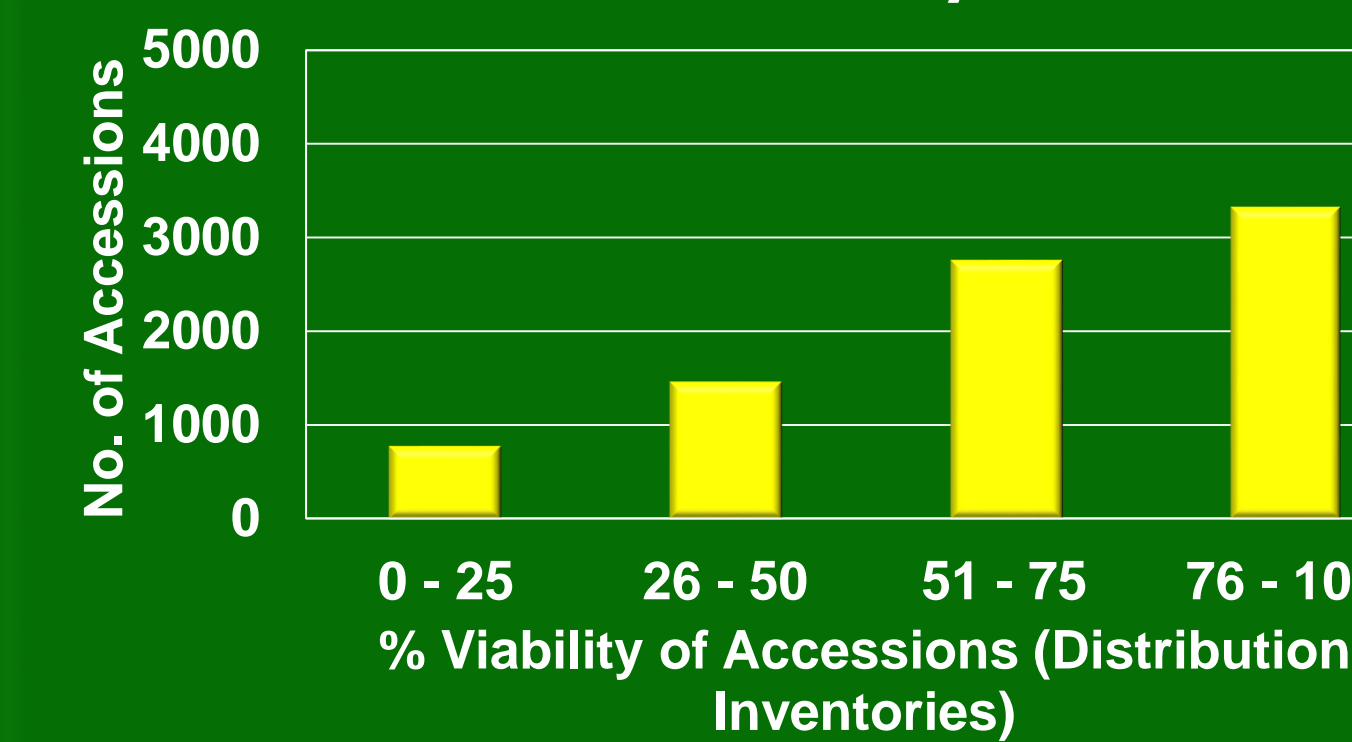
Percent of Griffin collection tested for germination



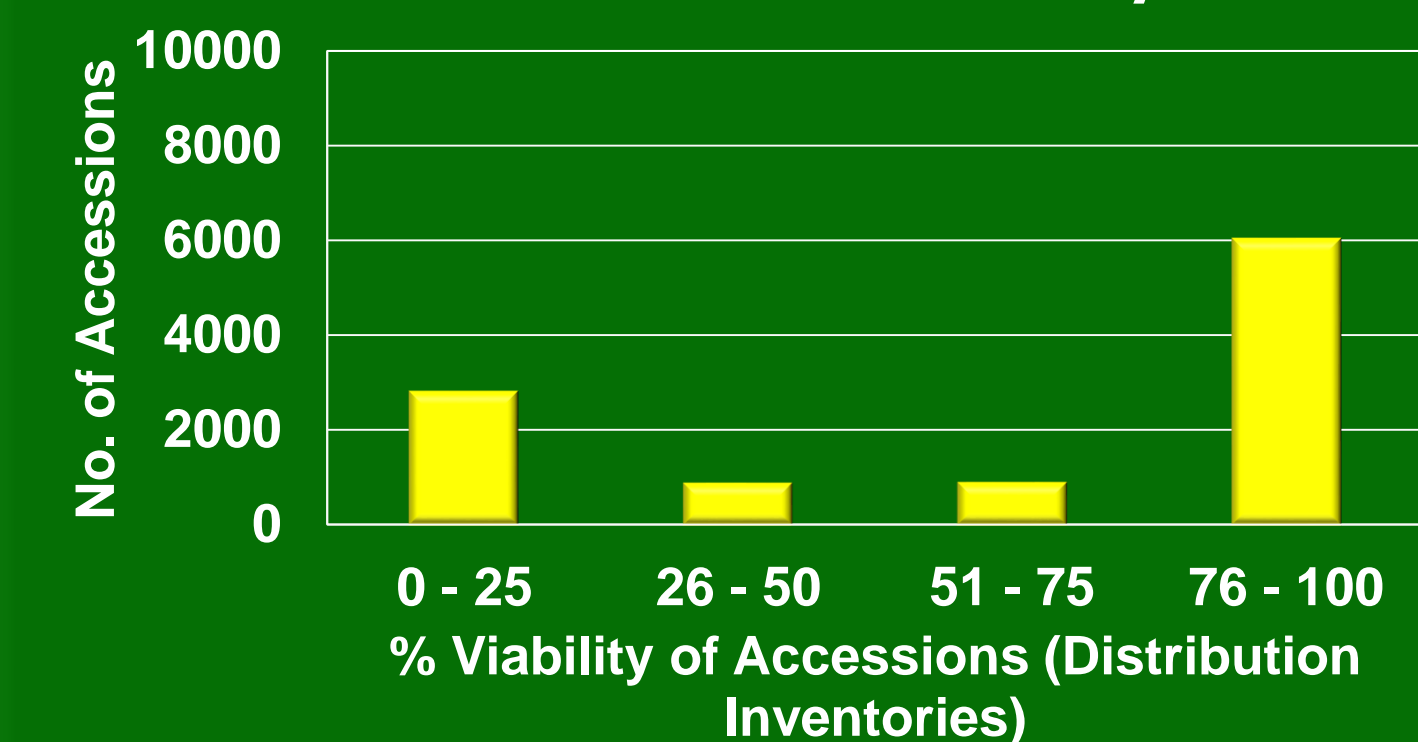
Sorghum Viability



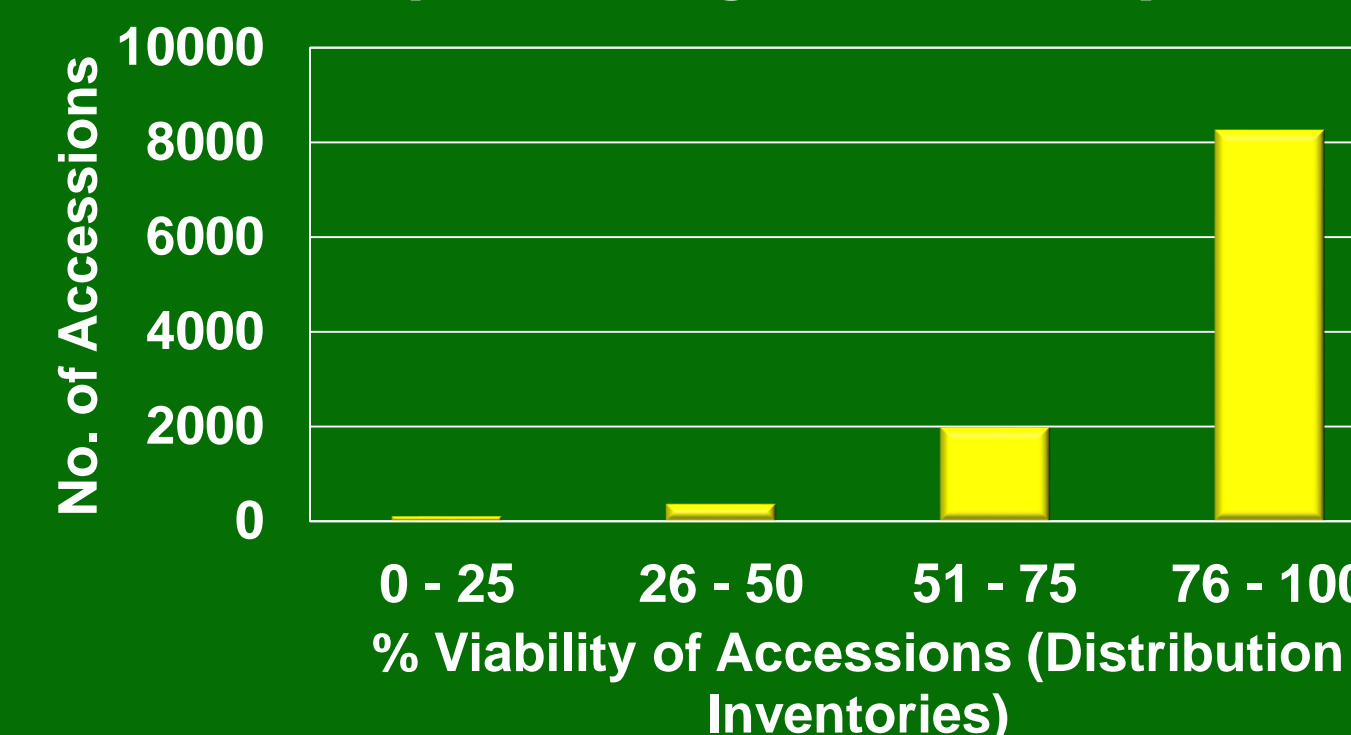
Peanut Viability



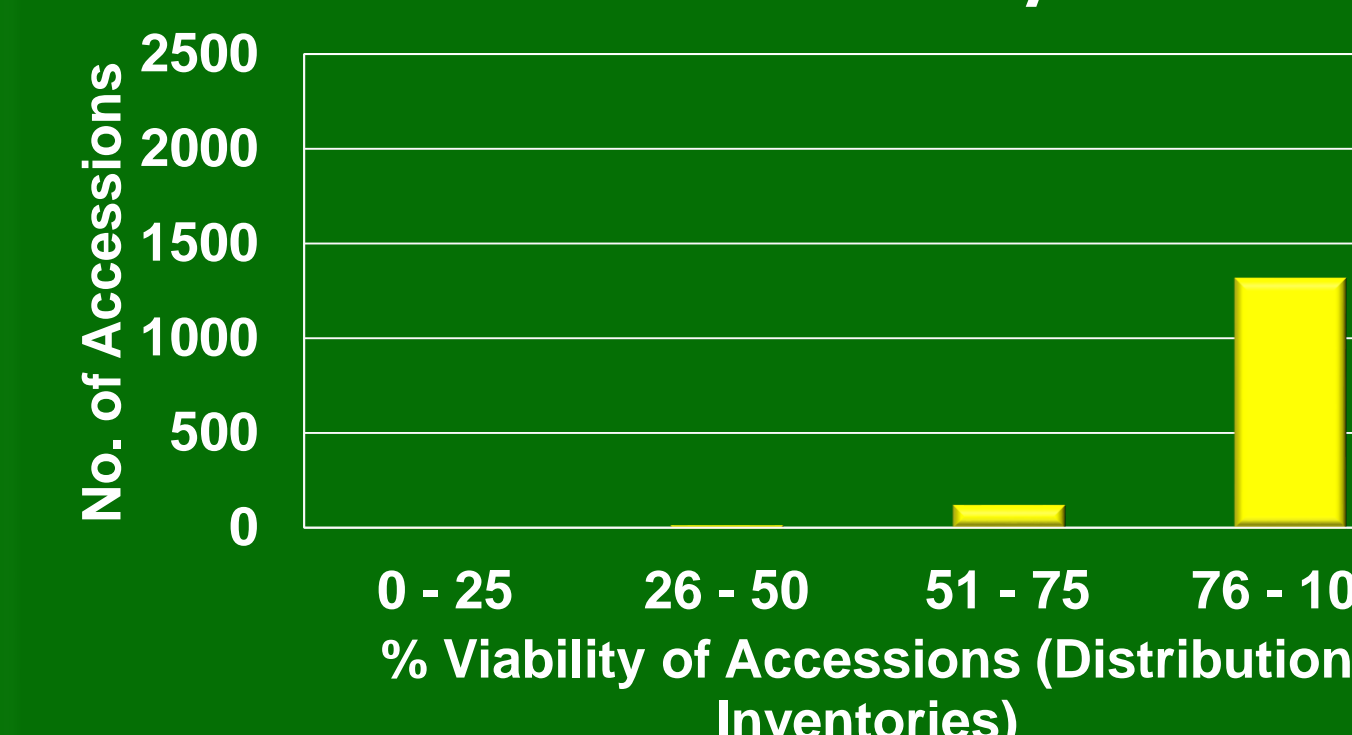
Warm-Season Grass Viability



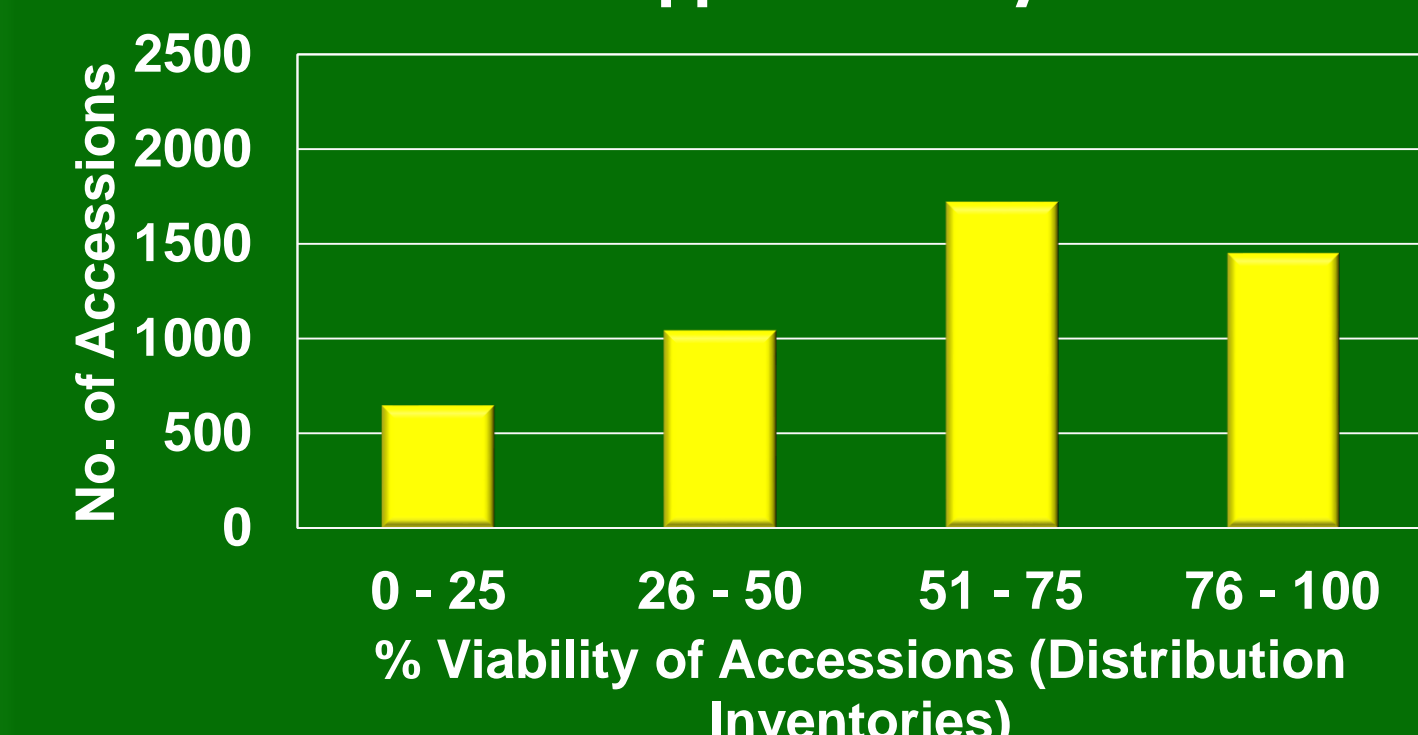
Cowpea & Mung Bean Viability



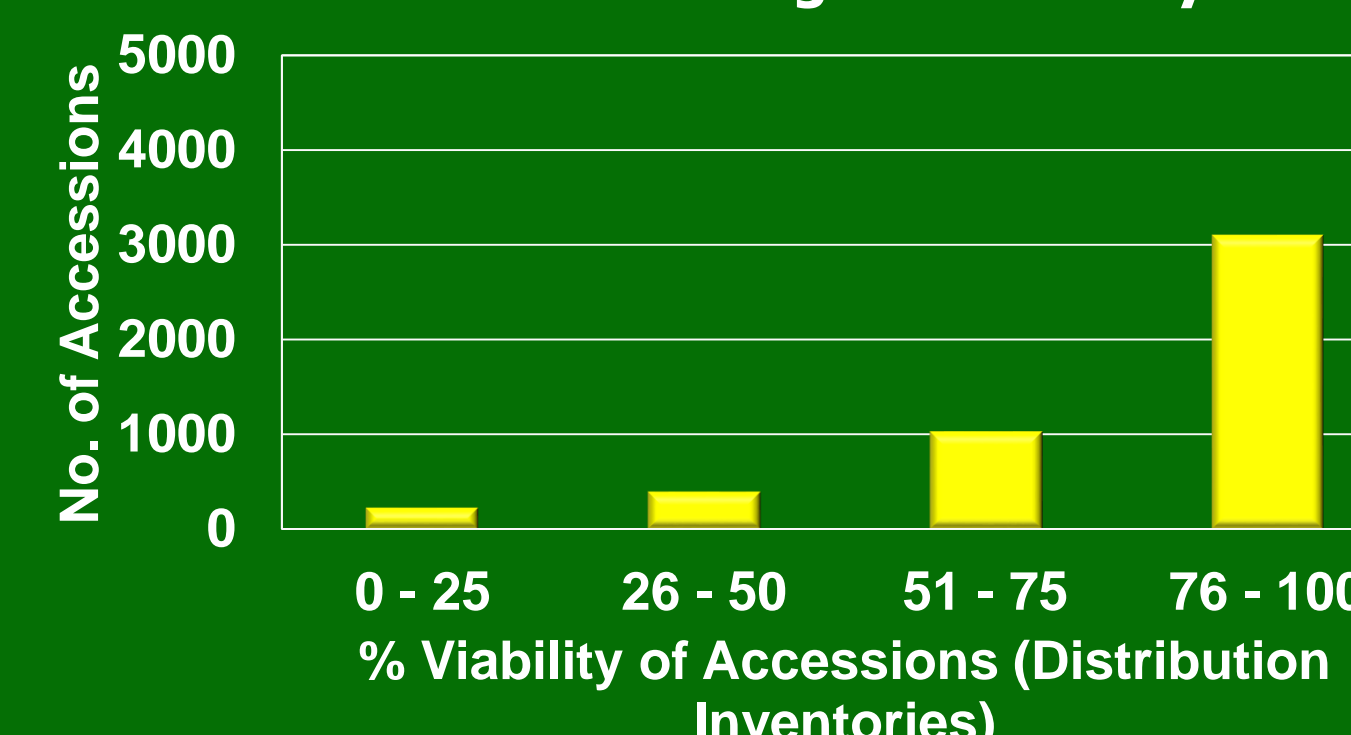
Watermelon Viability



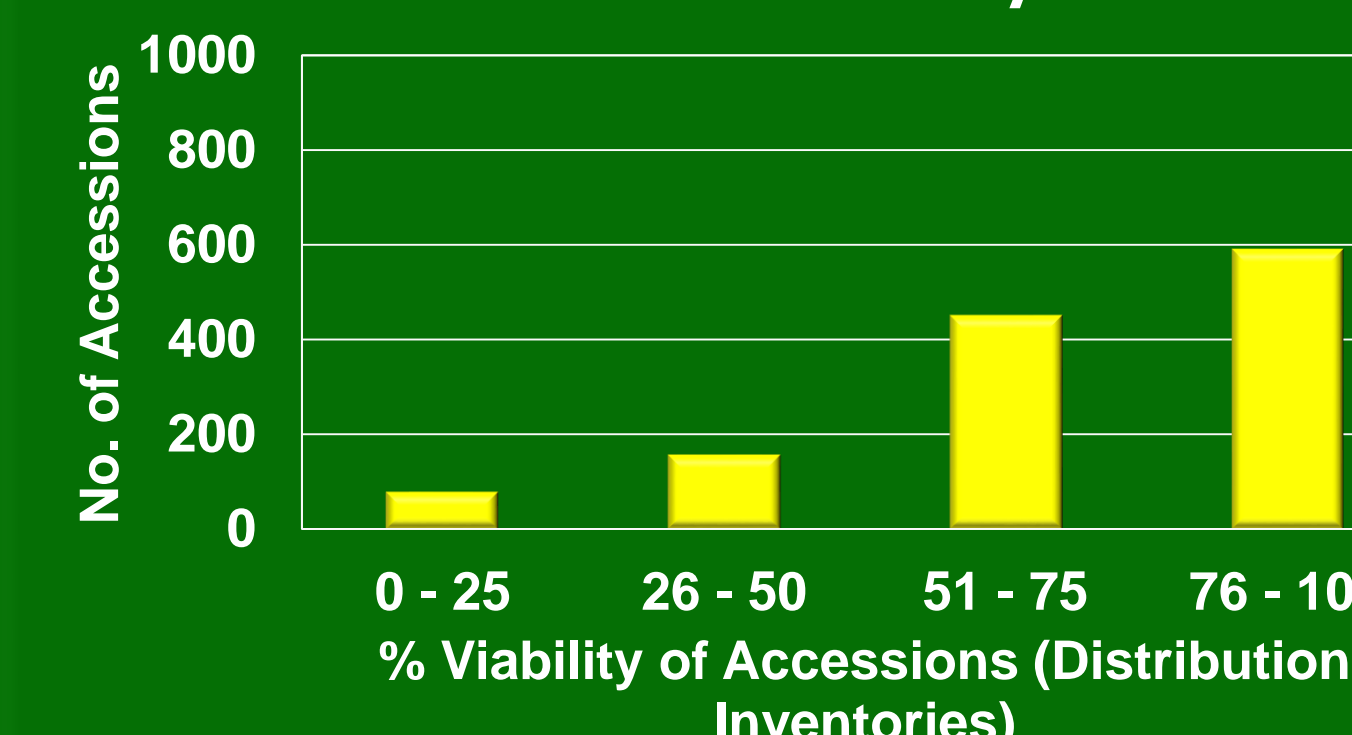
Chili Pepper Viability



Annual Clover & Legume Viability



Pearl Millet Viability



Acknowledgments

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