African Indigenous Vegetables Tested

- **Kenya**: AIV Seed Evaluation Trials.
- **Zambia**: ASNAPP.
- **Tanzania**: A VRDC, Horticulture Research Institute, Sokoine University, St. John’s University.

African Indigenous Vegetables Tested

- 3 species of African indigenous vegetables: African nightshade (**Solanum scrupulum**), Spider plant (**Amaranthus cruentus**), and Amaranth (**Amaranthus cruentus**).

African Indigenous Vegetables Tested

- Conducted in 2013 at the Kenya Agricultural Research Institute (KARI) in Alupe.
- Spider plant, 35 days (AC-45) to 98 days (AC-38), African nightshade 48 days.

Information on seed germination obtained at University of Eldoret.

Key Findings of Household Survey in Kenya

- **Amaranth**: high preference, especially in the Rift valley and western regions.
- **Spider Plant**: moderate preference.
- **African Nightshade**: low preference.

Objective 1. Market Survey Results

- **Objective 1**: Evaluate Local Scientific and Farmer Capacity for Increased Small Producers’ Participation in African Indigenous Vegetable Markets

- **Objective 2**: Evaluate Agronomic Potential of Improved AIV Germplasm and Develop Improved Production Techniques

- **Objective 3**: Evaluate Root Preparation and Preservation Techniques that will Enhance Micro-nutrient Composition and Retention.

- **Objective 6**: Build Capacity of Stakeholders (Farmers, Marketers, Scientists and Graduate students) in the AIV Market Chain

Two Goals: Build Local Scientific and Farmer Capacity For Increased Small Producers’ Participation in African Indigenous Vegetable Markets

- **Goal 1**: Evaluate the status of the Growers, AIV Market Chain and Identify the Needs for Improvement of the Chain and Program Impact

- **Goal 2**: Establish Local Scientific and Farmer Capacity to participate in African Indigenous Vegetable Market Development

- **Goal 3**: Evaluate Root Preparation and Preservation Techniques that will Enhance Micro-nutrient Composition and Retention.

- **Goal 6**: Build Capacity of Stakeholders (Farmers, Marketers, Scientists and Graduate students) in the AIV Market Chain

AIV Seed Evaluation Trials

- **Amaranth**:
  - Three varieties (BG16 and Ex-Hai), Amaranth (AC-38 and Ex-Zim) and Spider plant (PS and ML-SF-29).
  - Submitted for Kenyan DUS tests and eventual commercial release.

Objective 2: Evaluate Agronomic Potential Of Improved AIV Germplasm and Develop Improved Production Techniques

Impact of Fertilization on African Indigenous Vegetables, conducted in Kenya, Tanzania, and Zambia

- **African nightshade**: 35 days (BG-16) to 98 days (AC-38), for African nightshade were 48 days.

- **Spider plant**: 2 varieties each of African nightshade (BG16 and Ex-Hai), Amaranth (AC-38 and Ex-Zim) and Spider plant (PS and ML-SF-29).

- **Ex-Hai** and **AC-38** were submitted for Kenyan DUS tests and eventual commercial release.

- **Training Courses in Tanzania**
  - HIL-Project on AIV seed storage using neolite beads.
  - 2 trainings for farmers and staff.
  - Objectives:
    - How to determine the weight of seeds and beads using the drying bead calculator.
    - How to dry seeds to required moisture levels.
    - How to measure moisture absorption capacity of the beads.
    - Trials of seed storage using drying beads being implemented by KARI.

Objective 3. Value Addition - Drying Vegetables and Nutrient Composition and Quality of Dried AIVs

- **Solar Dryer**: modified design from UC Davis (Mike Reid).

- **Recipe preparation and utilization of AIVs**.

- **Nutrient Composition and Quality of Dried AIVs**
  - African nightshade, spider plant, and amaranth.

- **Sorghum**
  - 100.0

- **Beans**
  - 60.0

- **Insects Diseases**
  - *Agrotis A, N, S*, *Myzus sp*, *Phytophthora sp*, *Bagrada bugs*.

Objective 4. AIV Outreach, Training and Capacity Building

- **Steps in AIV Harvest and Handling**
  - Training on harvesting during the cooler times of the day in the early morning or at night when possible.
  - Use of shade after harvest.
  - Cold AIVs after harvest.
  - Cold chain development.
  - Soluble development in Zambia.

- **Collaborative Agreements**
  - The HIL-AIV project partnered with four groups of fifteen to twenty farmers in western Kenya associated with the USAID-KHCP, to introduce groups to AIVs and train them on an average of 6 days per group.
  - Among the types of vegetables that were originated from AIVs.

- **Adoption of AIVs in Western Kenya**
  - Data collection on AIVs, production leaflets for amaranth, nutrient content and antioxidant activity for each of their packaged AIVs.
  - Sensory evaluations conducted in Kenya and Tanzania (pictures at KARI in Kenya).

- **Nutrient Composition of Dried AIVs from Kenya and Zambia**
  - Amaranth, Spider plant, and African nightshade.

- **Evaluate Oganoleptic, Vitamin Retention and Micronutrient Bioavailability in Improved AIV Recipes**
  - A comparison of vegetables from AIVs for nutrition and health.

- **Collaboration Agreements**
  - The HIL AIV project partnered with four groups of fifteen to twenty farmers in western Kenya associated with the USAID-KHCP, to introduce groups to AIVs and train them on an average of 6 days per group.
  - Among the types of vegetables that were originated from AIVs.