

## **Sustainable African Indigenous Vegetable Production and Market-Chain Development for Improved Health and Nutrition and Income Generation by Smallholder Farmers in Kenya, Tanzania and Zambia.**

**Collaborators:** U.S.: Purdue Univ. and Rutgers Univ., Kenya: AMPATH, Univ. of Eldoret, KARI, Fintrac; Tanzania: AVRDC, Horticulture Research Inst., Sokoine Univ., St. John's Univ.; Zambia: ASNAPP

**Objectives:** Objective 1. Survey Grower Households, AIV Market Chains and Identify Needs for Improvement of the Chain and Program Impacts, Objective 2. Evaluate Agronomic Potential of Improved AIV Germplasm and Develop Improved Production Techniques. Objective 3: Evaluate Best Preparation and Preservation Techniques that will Enhance Micro-nutrient Composition and Retention. Objective 4. Build Capacity of Stakeholders (Farmers, Marketers, Scientists and Graduate students) in the AIV Market Chain

### **Major Accomplishments:**

**Objective 1.** Household surveys conducted in all countries; Market Surveys conducted in Kenya and Tanzania; Consumer Choice Surveys conducted in Kenya for AIVs; value chain connections to supermarkets and hotels/resorts.

**Objective 2.** Agronomic studies in Kenya, Tanzania, Zambia and U.S. investigated improved AIV germplasm performance, cataloged insect, disease and weed pests, soil quality factors, drought tolerance seed production, best seed storage techniques, germination and breeding. Nutritional composition of AIVs is being measured during the growing season. Two lines each of Amaranth, African nightshade and spider plant have been submitted for DUS evaluation in Kenya. Collaboration with Fintrac and HIL seed project.

**Objective 3** Value addition studied new solar drying technologies, recipe preparation, consumer preference and nutrient analysis of dried and prepared AIVs. Collaborative studies with Mace Foods, Eldoret, Kenya and Sylva's Catering, Lusaka, Zambia (processors of dried AIVs) on value addition technologies and providing product nutritional composition levels. Also examining antinutritive content (including alkaloids, oxalic acid).

**Objective 4:** Training on agronomic practices -field preparation, inputs, pest management, seeding, thinning, harvesting, postharvest handling, marketing along with seed fairs and consumer acceptance panels evaluating improved AIV recipe preparations. Training of approximately 1000 farmers and private sector players. An AIV Cookbook is in review. Training 7 graduate students - 4 in Kenya, 1 in Tanzania, 1 PhD each at Purdue and Rutgers. Host country collaborators have attended postharvest training programs and graduate students trained on insect and disease diagnostics.

**Further Activities:** All studies described will result in 15 scientific publications to be submitted by the end of September 30, 2014. Three papers, 2 on the Household survey and 1 on the consumer choice survey have been submitted and papers on agronomic studies, seed production/germination, solar drying techniques, nutrient analysis of fresh and dried materials and the AIV Cookbook are under internal review. We will hold an end of project AIV workshop Symposia in July 2014 in Kenya on our project activities and accomplishments.



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