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1. Accession 0217018	Agency Identification No. 2. CSREES 3. LA.B	5. Work Unit/Project No. LAB93957	6. Status Annual Report
7. Title Breeding and Genetic Studies of the Sweet Potato			
12. Investigator Name(s) (Last Name and Initials) Labonte, D. R.			
20. Termination Date 09/30/2013		40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011	
Outputs: <p>The primary objective of this project is the development of new sweetpotato varieties. Various advanced lines were trialed in Louisiana, Mississippi, Alabama, Missouri, California, and Arkansas. Results were presented to various grower groups in Louisiana, Mississippi, and California. Results were compiled to adequately describe two advanced lines, 07-146 and 05-111, for release. Patent applications were submitted for both. Efforts were expended to move these new lines into commercial seed production. Research results were published in referred journals.</p>			
Outcomes/Impacts: <p>True seed (20,000) were screened for economic worth. Advanced lines were tested in multiple trials across Louisiana, Mississippi, Alabama, Missouri, California, and Arkansas. Full-season testing reduced the number of advanced lines to five. Outstanding among these lines were 07-146, 05-111, and 06-52. The highest in yield in all plots were from line 07-146. Eating quality and French frying characteristics were good. Disease resistance and overall horticultural characteristics are superior to Beauregard. Line 06-52 performed well in California for a second year. True seeds (119,000) were generated from various nurseries for high yield, rhizopus soft rot resistance, insect resistance, and skinning resistance. Research is on going to characterize storage root development. This work is identifying key genes expressed during storage root formation and environmental factors implicated in suppressing and stimulating storage root formation. Research understanding genetic diversity of orange flesh sweet potato in East Africa and micronutrient variability among East African varieties and genotype by environmental variability was completed this year.</p>			
Publications: <p>LaBonte, D.R., C.A. Clark, T.P. Smith, and A.Q. Villordon. 2011. Bonita Sweet potato. HortScience 46:1-2.</p> <p>Tumwegamire, P.R. Rubaihayo, D.R. LaBonte, F. Diaz, R. Kapinga, R.O.M. Mwanga, and W.J. Gruneberg. 2011. Genetic Diversity in White- and Orange-fleshed Sweet potato Farmer Varieties from East Africa evaluated by Simple Sequence Repeat (SSR) Markers. Crop Science 51:1132-1142.</p> <p>Tumwegamire, S., R. Kapinga, R. Rubaihayo, D.R. LaBonte, W. J. Gruneberg, M. P. Burgos, T. zum Felde and R. Carpio, E. Pawelzik, and R.O.M. Mwanga. 2011. Evaluation of Dry Matter, Protein, Starch, Sucrose, Beta-carotene, Iron, Zinc, Calcium, and Magnesium in East African Sweet potato [Ipomoea batatas (L.) Lam] Germplasm. HortScience 46:348-357.</p>			
Participants: <p>D. R. LaBonte (PI), A. Villordon, T. Smith, C.A. Clark, M. Sistrunk and V. Deshotel, R. Story, N. Baisakh, LSU AgCenter; C.S. Stoddard, Univ. of Calif - Davis; R. Arancibia, Mississippi State Univ.; Arnold Caylor, Auburn Univ.</p>			
Target Audiences:			

Sweet potato breeders, sweet potato producers and sweet potato processors.		
Project Modifications:		
Nothing significant to report during this reporting period.		
Approved (Signature)	Title	Date
		