

Title	Assessing the Potential of <i>Dioscorea praehensilis</i> (bush yam) as a Commercial and Food Security Crop in Ghana
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Purpose	To develop baseline knowledge of and assess the potential of <i>Dioscorea praehensilis</i> (bush yam) as a commercial and food security crop in Ghana.
Project Summary	<p>In Ghana, <i>D. praehensilis</i> (an edible wild yam) largely grows under cocoa plantations and has been an important food and income security crop for cocoa farmers for ages but is currently known to be disappearing. The production, consumption and marketing of <i>D. praehensilis</i> in Ghana are restricted to the cocoa belt largely due to its short postharvest shelf-life. Knowledge and information on <i>D. praehensilis</i> in Ghana is scant. This project therefore seeks to create baseline knowledge on the spatial distribution, diversity and morphological characteristics, and variations in shelf life of <i>D. praehensilis</i> to support scientific exploitation and production as a commercial and food security crop. The production of <i>D. praehensilis</i> has several advantages over the known commercial species of yam. First, there are no known pests yet. Second, it is</p>

	<p>environmentally friendly to cultivate as it does not require elaborate land preparation, agronomic management or additional land as it can grow under established tree crop plantations. Third, <i>D. praehensilis</i>, when mature, can remain wholesome in the soil for several months if not harvested. Fourth, the yield of <i>D. praehensilis</i> is potentially much greater than that of the known commercial species and it is a delicacy or premium yam, preferred to the commercial species, in localities where it is grown. Finally, there is a great diversity to be exploited and it readily flowers and produces seeds profusely, making it amenable to crop improvement through hybridization. The project will involve collection of germplasm from farmers' fields and local markets in the cocoa belt, interviews and on-station observations to capture indigenous knowledge, pest profile and passport data of <i>D. praehensilis</i>, and participatory research methods (involving farmers and other stakeholders in the yam value chain) to select promising accessions of <i>D. praehensilis</i> with superior shelf-life for further exploitation as a potential commercial and food security crop and genetic material for yam improvement. The project will be implemented by the School of Agriculture (University of Cape Coast, Ghana) in collaboration with appropriate stakeholders in the yam value chain.</p> <p>Keywords: Bush yam, <i>Dioscorea praehensilis</i>, food security, shelf-life, Ghana</p>
Country and Specific locations	Ghana, Central region, University of Cape Coast Research Farm
Participating Institutions	<ol style="list-style-type: none"> 1. University of Cape Coast 2. Agric. Extension Division, Ministry of Agriculture
Start Date	1 st July, 2015
End Date	30 th July, 2017
Budget	USD 58,873



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Dr. Jonathan P. Tetteh is a Plant Breeder and an Associate Professor at the School of Agriculture, University of Cape Coast (Ghana). Jonathan holds a PhD in Crop Science (Plant Breeding) from the University of Guelph (Canada), MSc. Plant Science (Crop Improvement) from the McGill University, Montreal, (Canada) and a BSc. in Agricultural Science (Crop Science, Major and Soil Science, Minor) from the Kwame Nkrumah University of Science and Technology in Ghana. Dr. Tetteh has successfully supervised several undergraduate and graduate students. Dr. Tetteh has held a number of positions in the University of Cape Coast including 2 terms as Head of Department of Crop Science and Vice Dean of the School of Agriculture. His research interests are in Plant breeding (variety development) with special interest in root and tuber crops. He was the leader of a team of scientists that developed and released two varieties of cassava in 2005, namely, 'Capevars Bankye' and 'Bankye Botan'. Dr. Tetteh has worked extensively with the Ministry of Food and Agriculture (MOFA) and has served as the coordinator for Research Extension Linkage Committee (South-Western Zone). He has also previously coordinated the Root and Tuber Improvement and Marketing Programme for MOFA. He is a member of the National Variety Release and Registration Committee and is a member of the team that drafted the National Seed Policy for Ghana.

Selected Publications

- Anokye, M., Tetteh, J.P., Otoo, E. (2014). Morphological characterization of some Water Yam (*Dioscorea alata*, L.) germplasm in Ghana. Journal of Agricultural Science and Technology B4. 518-532.
- Teye, E., Amoah, R.S., Tetteh, J.P. (2011). Effect of pre-storage treatments on the storage of TIS 2 sweet potato variety. Jour. of Agricultural and Biological Science, Vol. 6, 4
- Amoah, R.S., Teye, E., Abano, E.E., Tetteh, J.P. (2011). The storage performance of sweet potatoes with different pre-storage treatments in an Evaporative cooling barn. Asian Journal of Agricultural Research, ISSN 1819-1894 / DOI: 10.3923/ajar.2011
- Abano, E.E., Teye, E., Amoah, R.S., Tetteh, J.P. (2011). Design, Construction and Testing of an Evaporative cooling barn for storing sweet potato in the tropics. Asian Journal of Agricultural Research, 5 (2) 115-126.
- Teye, E., Agu-Asare, P., Amoah, R.S., Tetteh, J.P. (2011). Determination of dry matter content of Cassava tubers (*Manihot esculenta* Crantz) in the Coastal Savannah zone of Ghana using specific gravity method. Jour. of Agric. and Biological Science, 6. 11.
- Teye, E., Amoah, R.S., Abano, E.E., Sam-Amoah, L.K., Tetteh, J.P. (2011). Comparison of two storage structures for the storage of sweet potato tuberous roots in the coastal savannah zone of Ghana. Jour. of Agriculture and Food Technology, Vol. 1(6) 81-88.
- Asare-Bediako, E., Opoku-Asiama, Y., Showemimo, F.A., Tetteh, J.P. (2007). Evaluation of different methods of sterilizing sprouting media in the control of minisett rot in white yam (*Dioscorea rotundata* Poir). American Journal of food and Technology 2 (2) 95-99.

