AFERP & STOLON

International Symposium

Brussels

May 22-24, 2013

VALORIZATION OF THE NUTRIENT-RICH YAM BEAN (*PACHYRHIZUS SP.*) FOR CENTRAL AND WEST AFRICA

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This international and multidisciplinary project aimed at showing that this underutilized and highly nutritious legume root crop, showing a wide adaptation and high yield potential, can lead to greater food supply, more sustainable farming systems and new options for generating income in the rural and urban poor Central and West Africa. During this four-year initiative main results were obtained in: (1) improving the availability of yam bean germplasm for Central and West Africa especially high-yielding genotypes (2) developing the "gari" processing of storage roots (3) studying the chemical content of seeds, pods and leaves in order to provide a diversity of use of these by-products. While yam bean seeds are known to contain a toxic isoflavonoid, different strategies were developed in order to make them usable for consumption in a close future as pods are consumed in Asia. First different genotypes were screened using different kinds of analytical tools as microwave assisted extraction-solid phase extraction-ultra high performance liquid chromatography or near infrared spectroscopy to identify the less toxic ones. Then the feasibility of decreasing the amount of toxic compounds through food processing was studied and, *in vitro* and *in vivo* models were used to test the toxicity of different samples. The influence of the maturity of the seed containing pods was also studied.