



Deutscher Tropentag, October 8-10, 2003, Göttingen

“Technological and Institutional Innovations  
for Sustainable Rural Development”

## Status of Under-Utilised Tuber Legumes Yam Bean and Wild Cow Pea in Indonesia

AGUNG KARUNIAWAN<sup>1</sup>, ISWANDI ANAS<sup>2</sup>, PIETER KALE<sup>3</sup>, JÖRG HEINZEMANN<sup>4</sup>, HEIKO C.  
BECKER<sup>1</sup>, WOLFGANG J. GRÜNEBERG<sup>1</sup>

<sup>1</sup>Georg-August-Universität Göttingen, Institute of Agronomy and Plant Breeding, Germany

<sup>2</sup>Bogor Agricultural University (IPB), Department of Soil Sciences, Indonesia

<sup>3</sup>Georg-August-Universität Göttingen, Institute of Agricultural Chemistry, Germany

<sup>4</sup>Georg-August-Universität Göttingen, Institute for Agricultural Technology, Germany

### Abstract

The yam bean (*Pachyrhizus* spp.) was introduced to South East Asia in 16<sup>th</sup> century from America. It has received more interest since the Amazonian yam bean Chuin has been found which is used and processed like cassava. The wild cow pea (*Vigna vexillata*) is used in Asia, Africa and Central America for its tuberous roots. The objectives of this study were to record the cultivation status as well as the use and processing knowledge of these species in Indonesia. In a collection trip a questionnaire was used to record these information. 110 yam bean (*P. erosus*) and four cultivated *V. vexillata* accessions were collected. The yam bean — local names: *Bengkuan*, *Uas* or *Bose* — is cultivated on all major Indonesian islands. Cultivated *Vigna vexillata* — local names: *Jempirang* — has been found only in Bali. Personal communications indicated that there is also cultivation in Timor and Papua. The yam bean is known as vegetable crop rather than as root crop. It is consumed raw as salad or as refreshing tuber fruit. The *Jempirang* is considered as a root crop-tubers and is always steamed or boiled before consumed and seeds are additionally used. Yam bean yields are 10 to 70 t ha<sup>-1</sup> in West Indonesia (Sumatra and Java) compared to 10 to 50 t ha<sup>-1</sup> in East Indonesia (Sulawesi, Timor, Flores and Sumba). In East Indonesia it is predominantly intercropped with maize and cassava due to poor soil conditions. The *Jempirang* yields are 20 to 30 t ha<sup>-1</sup>. It is cultivated after rice (*Oryza sativa*) in the dry season. In conclusion the *Jempirang* should consider more attention as a legume root crop and merits further investigations e.g. crossings with *V. vexillata* var. *lobatifolia* from the Namibian drylands. Furthermore, the yam bean should be considered as an additional option for intercropping systems. A higher dry matter Amazonian yam bean — so called Chuins — are lending themselves as a protein rich starchy stable as well as incorporation of high dry matter into the South East Asian yam bean gene pool. The differences between these gene pools are currently under investigation.

**Keywords:** Neglected crops, legume root crops, yam bean, *Pachyrhizus*, wild cowpea, *Vigna vexillata*