

CROPS FOR THE FUTURE RESEARCH CENTRE

PROGRAMME CONCEPT NOTE

STARCHPLUS

Identifying and developing novel sources of starch for food and non-food uses

Problem Statements

- There is a strong and growing demand for starch in South East Asia (SEA) for use in several food and non-food applications, including the manufacture of MSG, glucose and packaging products. Cassava and sago are the two main sources of starch in SEA but their production is in decline as commercial yields cannot compete with that from oil palm on similar land.
- In Malaysia, around 120,000 t a year of cassava roots are imported from the main regional producers (Thailand, Vietnam and Indonesia) for further processing and modification with demand increasing annually at 7.5%. However, due to global demand, it is increasingly difficult to secure sufficient supplies from outside Malaysia to meet national requirements.
- A recent Macro-economic Review of the Malaysian Cassava Industry commissioned by the Government of Malaysia, concluded that there was a need for a comprehensive review of alternatives to cassava starch. CFFRC agreed to complete such a review with the potential to identify alternative starch sources from underutilised species that could be cultivated on land not suited to oil palm e.g. seasonally saturated soils, hillsides and areas too marginal for agriculture.
- The CFFRC review also highlighted the need to identify and develop novel starch modification techniques for underutilised plant sources, technologies to optimise the starch production process and supply chain and operational management processes to meet national and regional starch demands from alternative sources.

Objective

To increase the diversity, functionality and end use of starch sources for food and non-food industries in the ASEAN region on land not currently used for oil palm.

Outcomes

- Reduced reliance on production/importation of cassava starch for non-food and food uses.
- Novel 'high-value' products and uses of starch from a range of currently 'low-value' local and indigenous plant species.
- Income-generating opportunities for rural communities to cultivate and rehabilitate land not suited to oil palm.

Programme Concept

Through systematic review, technical development and implementation phases, to identify, test and develop novel sources of starch that can replace and/or complement cassava starch in a number of food and non-food industrial applications with potential for up scaling beyond Malaysia.

Potential CFFRC partners

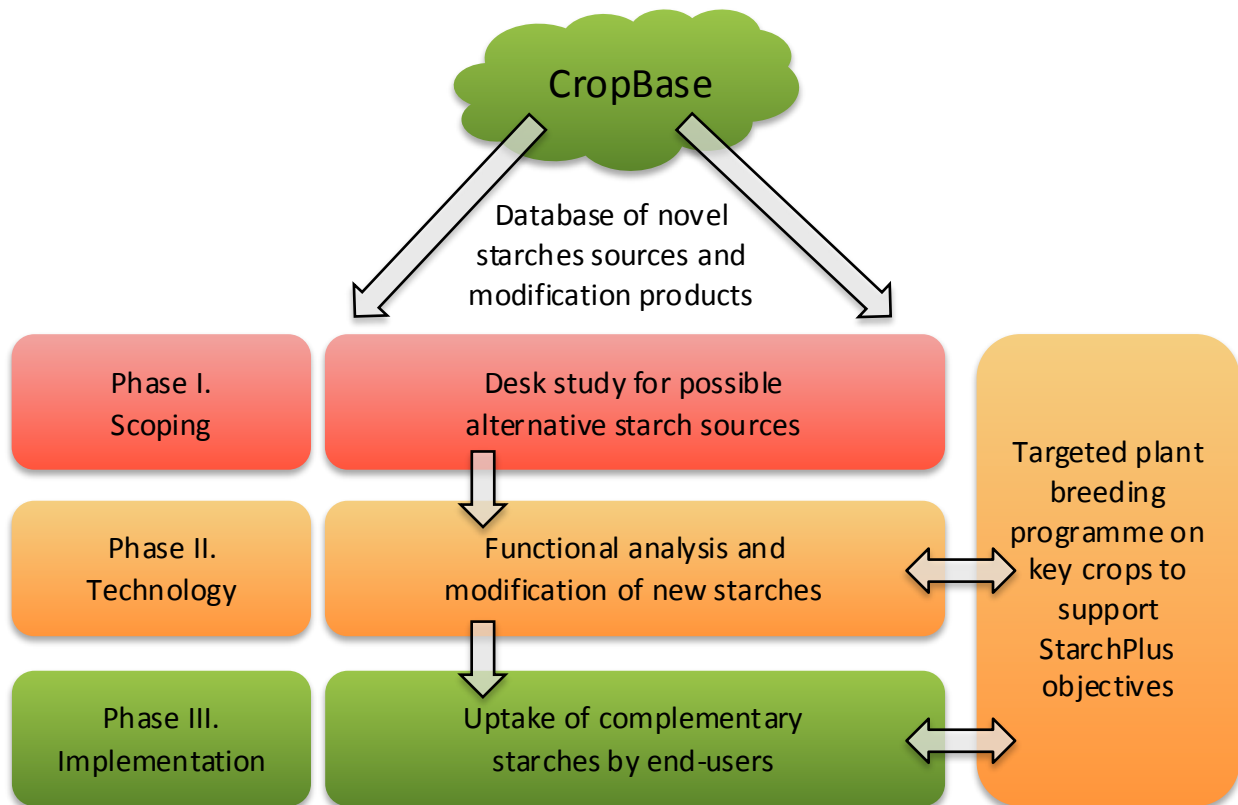
University of Nottingham, international and regional universities including Kasetsart University Thailand, Universiti Kuala Lumpur Malaysia, Bogor University, Indonesia, private sector starch processors and end users.

Programme Activities

StarchPlus is a multidisciplinary and multiagency programme involving scoping, technology and implementation phases supported by a plant breeding and improvement programme on key underutilised crops with potential as novel sources of starch.

Initial activities will focus on the selection of candidate species, technical challenges in the identification, analysis and modification of novel sources of starch, their use in combination and as replacements for conventional starch sources and logistic and supply chain issues for expansion and commercialisation.

The programme will incorporate data into the CFFRC CropBase web-based platform.



CFFRC`250PLUS' Postgraduate Research Studentship Opportunities

Research studentships (PhD and MRes) are available through the CFFRC250PLUS Scholarship Scheme.

Prospective supervisors should consult the Guide for Applicants, available at:

<http://www.nottingham.edu.my/CFFRC/documents/CFFRC250studentGuide.pdf>, and submit a

Studentship Application Proposal, available at:

<http://www.nottingham.edu.my/CFFRC/documents/CFFRC250studentApplication.pdf>.

For this call, completed applications for CFFRC250 Studentships should be submitted by **FRIDAY 1 JUNE 2012** to; Applications@cffresearch.org.

For more information, please contact: Enquiries@cffresearch.org or Crops for the Future Research Centre, c/o University of Nottingham Malaysia Campus, Jalan Broga, 43500 Semenyih, Selangor, Malaysia.