

INTERREGIONAL COOPERATION 2008

NETWORK: The Cassava Molecular Diversity Network
(MOLCAS)

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IPICS grants:	k-SEK
1999	80
2000	160
2001	285
2002	355
2003	383
2004	218
2005	234
2006	161
2007	74
<u>2008</u>	<u>131</u>
Total	2081

SUMMARY OF THE NETWORK

Of all staple crops cassava is the most efficient converter of solar to dietary energy. Due to its high yields and drought tolerance cassava roots are the main staple food for about 400 million

The truly irreducible uncertainties of crop production in Sub-Saharan Africa demands a hardy, low labour and resource input crop, a requirement cassava meets and exceeds. The cassava mol. div. network aims to enhance the undisputed position of cassava as a food security crop and engine of economic development in Sub-Saharan Africa by generating new approaches to cassava germplasm improvement using new tools of molecular genetics, bioinformatics and farmer knowledge of cassava. The strategy combines an assessment of genetic variation in Africa compared to the total available variation in cassava and wild progenitors from South America and a determination of underlying genetic factors in successful cultivars and how to complement them with favourable alleles from other cultivars and wild progenitors. The international nature of cassava germplasm and its usage makes complementary collaborative efforts indispensable to achieve the objective described above. The Network will bring together genetic resources and knowledge of cassava from national and international scientists in Africa, South America, Sweden and Europe. The first year will be spent collecting cassava land races in Uganda and Nigeria, in collaboration with National Scientist from those countries, genotyping them with simple sequence repeat (SSR) markers and analysing genetic diversity. Qualitative anthropological interviews as to the importance of farmer materials, and GIS information will be included to determine underlying factors of farmer preferences. Ongoing and concluded cassava genetic diversity studies, with SSR markers, of South American accessions will be expanded to

obtain a representative estimate of diversity in the crop's centre of diversity. Further collections of wild progenitors of cassava, recently identified in the Southern rim of the Amazonian region will also be added. The second and third year will be spent collecting, genotyping and analysing accessions from Tanzania, Zaire, Ghana and Mozambique. Information derived from this study will be employed to evaluate new approaches to farmer-participatory cassava breeding. A workshop, involving members of the network will be held annually to discuss results, and research findings will be disseminated through a journal, refereed publications, and the cassava genome database.

Key words: Cassava; genetic diversity; molecular markers; Sub-Saharan Africa

Training, Research visits:

Participant (no of months; year)	Home Institute	Host scientist/Host Institute
Elisabeth Okai (6 m, 2002)	Corp Research Inst. Accra, Ghana	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia
Jixin Zhou (7 m, 2004)	Chinese Acad Tropical Agr. Sciences Guangxi, China	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia
Paolo Alfonso (4 m, 2004)	Univ Javariama Bogota, Colombia	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia
Claudio Ferreira (3 m, 2004)	Nat. Fruits and Cassava Research Inst. Cruz das Almas, Brazil	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia
Luis Montes (6 m, 2005)	Univ Guatemala City Guatemala	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia
Elisabeth Okai (6 m, 2006)	Corp Research Inst. Accra, Ghana	Martin Fregene Int'1 Center for Tropical Agriculture Cali, Colombia