

CARDI Barbados

Work Programme Highlights for 2005 - 2007

CARDI's primary hot pepper germplasm development and maintenance centre is in Barbados. Currently, the programme is focused on exploiting the variability within the 'Red Congo' and 'Scotch Bonnet' x 'Bird Pepper' populations. Three outstanding variants (two red and one yellow) from 'Red Congo' and four selections (three red and one yellow) from the 'Scotch Bonnet' x 'Bird Pepper' cross have been selected in the last couple of years for yield trials.

The Unit also produces and maintains Breeder's Seed for our stabilised hot pepper cultivars - Red Congo, Yellow Congo, Scotch Bonnet, Cayenne, Tiger Teeth, CARDI Green, CARDI Red and West Indies Red.

CARDI's commitment to the development of the regional hot pepper industry was further exemplified in Barbados. CARDI Barbados worked closely with a group of farmers, from the supply of seeds through to the provision of production technology and to product development. Some of the products - hot pepper sauces, pepper jams and jellies - were exported to other CARICOM countries.

The impact of virus diseases on pepper production is of major concern to the CARDI Hot Pepper Improvement Programme. In-house capacity for the analysis and identification of viruses was built through collaboration with AVRDC (Taiwan). The acquired skills were used to screen hot pepper fields in the island for Potato Virus Y (PVY) and Cucumber Mosaic Virus (CMV). The results showed that 60% of the samples were positive for CMV and 78% for PVY. A survey of common weeds in the hot pepper fields showed many species testing positive for the viruses. Future studies will investigate weed seeds as sources for transmission of the viruses.

Working with the sugar industry, CARDI developed a strategy which has successfully kept down the damage from the sugarcane moth borer, a major pest. This has involved rearing and releasing biological control agents, *Cotesia flavipes* Cameron and *Lixophaga diatreae* Townsend. Damage from the moth borer has been reduced to well under 5% of the crop which is regarded as the economic threshold level.

Another notable highlight was the provision of technical assistance to the Four Seasons Hotel in Nevis in the management of the coconut lethal yellowing disease.

The search is on in the Caribbean and elsewhere for suitable candidates for bio-fuels, including sugar cane. CARDI tests on three bio-fuel cane varieties showed that two were negative for Ratoon Stunting Disease (RSD), confirming an outstanding trait in prospective accessions for development as bio-fuels.

In sweet potato research and development, meristem tip culture was used by the CARDI laboratory to initiate work towards generating virus-free sweet potato material. This technique has also been used to multiply clean planting material for the farming community.

CARDI Barbados participated in the characterisation exercise for value added products of sweet potato varieties from Barbados, Jamaica, St Kitts/Nevis, St Vincent and the Grenadines and Trinidad and Tobago, funded under the CARICOM/Japan Friendship Agreement Programme. Varieties from Barbados were categorised as follows: suitable for flour, 'Caroline Lee' and suitable for fries 'CBS49'.

The Barbados Blackbelly Sheep is a unique genetic resource for Barbados and the Caribbean as a whole that can be exploited in niche markets. In pursuit of these opportunities, CARDI, The University of the West Indies (UWI) and the Government of Barbados, continue to collaborate on a project to characterise the breed molecularly. Putative unique markers have been identified to confirm individuals as being purebred Barbados Blackbelly sheep. This suggests that given blood sample from any phenotypic Barbados Blackbelly sheep it can be ascertained whether or not it is purebred.