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Improving lives through agricultural research

CARDI ST. LUCIA UNIT BRIEF

March 2012

The Caribbean Agricultural Research and Development Institute (CARDI), continues to play a major research and development role in St. Lucia. The CARDI Unit in St. Lucia is located in the Mabouya Valley at La Resource in Dennery and has developed appropriate technological packages, trained Extension Officers of the Ministry of Agriculture and farmers, provided agricultural information and much needed planting material to farmers for increasing sustainable food crop production. Such initiatives have complemented the Ministry of Agriculture crop diversification programme.

The CARDI UNIT BRIEF is an attempt to sensitise CARDI's stakeholders on a monthly basis over the next five months of some of the Units activities and their impact on the agricultural sector. This month Brief focuses on jelly coconut (water nut) and pineapple maturity.

REVITALISATION OF THE COCONUT INDUSTRY

For a number of years, coconut in St. Lucia was cultivated primarily for the production of copra (shelled and dry coconut) which was produced on a relatively large scale. The copra was processed to produce mainly coconut oil and other by-products on a small scale (e.g. margarine, cosmetics). However, since the 1980's, coconut production has continued to decline primarily as a result of aged trees that are low yielding, abandoned banana farms that were inter-planted with coconuts, mite infestation (Plate 1) and the general lack of management practices.

Generally yields are low averaging at about 1-2 metric tonnes per hectare from mature and old bearing trees. However, the strong and growing popularity and demand for fresh water nuts (jelly nuts) which continues to fetch an attractive price (EC$2.00 per nut) on the local market, have increased the potential of a viable water nut industry in St. Lucia (Plate 2). Over the last three years, IICA under the CARDI/IICA Cooperative Agreement and the Ministry of Agriculture

Plate 1 Mite infestation

Plate 2 Coconut vendor

Through its crop diversification programme, jointly funded a Coconut Revitalisation project with Technical Assistance provided by CARDI to reverse this trend and to revitalise the coconut industry by expanding acreages and crop performance. Emphasis was placed mainly on the cultivation of local dwarf improved cultivars (Malayan Dwarf or crosses of Malayan Dwarf and Panama Tall) for increasing water nut production (Plate 3).

During the period, over 8,000 dwarf coconut seedlings were produced at the CARDI Demonstration and Training Centre (DTC) in La Resource, Dennery (Plate 4) and were distributed to 110 farmers for the planting of 50 hectares. Distribution of seedlings (Plate 5) was carried under strict recommendations and approval of Extension Officers of the Ministry of Agriculture (MOA). Accompanying the seedling distribution to farmers was a "Coconut Production Factsheet" prepared by the CARDI Unit which contained information on the agronomic practices to be adopted by farmers in coconut cultivation. Coconut seedling establishment on farmers holdings (Plate 6) were supervised by Extension Officers of the MOA.

Plate 6 Farmer planting coconut seedlings

Plate 3 Malayan Dwarf coconut plant

Plate 4 Coconut nursery at CARDI DTC

Plate 5 Distribution of coconut seedlings

ASSESSMENT OF PINEAPPLE MATURITY

CARDI provided technical assistance to the Banana Industry Trust (BIT) under an European Union Funded project in conducting research and providing registered pineapple farmers and related stakeholders with information that would assist them in the determination of maturity indices for the main pineapple varieties (Victoria Sweet, Antigua Black, Boutielle, and Smooth Cayenne) grown commercially in St. Lucia. Farmers have in the past harvested pineapple fruits at a very advanced stage of maturity (Plate 7) that are poor in quality; have a short shelf-life which resulted in high post harvest losses and loss of income to farmers.

Plate 7 Fruit at an advance d stage of maturity

CARDI conducted field research and identified five stages of fruit maturity (Plate 8) based on skin colour listed below:

- Maturity Stage 1 (MS1) – 0 % skin coloured (skin green)
- Maturity Stage 2 (MS2) – 25 % skin coloured
- Maturity Stage 3 (MS3) – 50 % skin coloured
- Maturity Stage 4 (MS4) – 75% skin coloured
- Maturity Stage 5 (MS5) – 100 % skin coloured

Fruit maturity indicators were then established for each variety by correlating relationships of skin colour with internal fruit attributes (flesh colour, flesh translucency, sugar content (^{0}Brix) and acidity) for maturity stages for each cultivar in arriving at the optimum harvest maturity stage for the various market outlets (Plate 9).

Pictorial descriptors (Plate 10) in the form of posters were produced to guide farmers in determining pineapple maturity stages for each variety. Also a workshop was conducted in collaboration with the Ministry of Agriculture (Plate 11), to sensitise 40 registered pineapple growers belonging to Pineapple Producers Cooperative Society (PPCS) and other related stakeholders including Extension Officers of MOA in determining the correct harvest maturity stages required by the main market outlets.

Recommendations:

- The market should determine the maturity stage at which fruits are harvested.
- Maturity stages MS1, MS2 and MS3 are most suitable for markets that require fruits that will be stored for an extended period in hotels and supermarkets (over 3 days).
- The more advanced maturity stages MS4 and MS5 are desirable for fruits that will be consumed right away (between 1-2 Days).
- Fruits that are immature should not be harvested as they do not develop good flavour, are low in sugar (Total Soluble Solids) and are more susceptible to chilling injury.

Plate 8 Five stages of fruit maturity for Antigua Black variety based on skin clour

Plate 9 Correlation of skin and flesh colour for different maturity stages for Antigua Black pineapple variety

Plate 10 Pictorial descriptors for pineapple maturity stages

Plate11 CARDI facilitator Mr. Ronnie Pilgrim explaining pineapple maturity indices at workshop

CARDI is the leading Agricultural Research and Development organization in the Caribbean. It was established in 1975 to serve the agricultural and development needs of the member states of CARICOM. CARDI is governed by the Ministers of Agriculture of CARICOM Member States. This body approves the budget and provides the Board of Directors with general guidelines concerning policy and programmes. The Board of Directors is composed of representatives of Member States, Universities of the West Indies and Guyana, the Caribbean Development Bank, the Food and Agriculture Organization of the United Nations, Inter-American Institute for Cooperation on Agriculture and CARICOM Secretariat.

CARDI Mission

To contribute to the sustainable development of Caribbean people by the generation, transfer and application of appropriate technologies through agricultural research for development.

Website: www.cardi.org