Sustainable Strategies to Enhance Sweet Potato Yields and Minimise Losses to Pests and Diseases in the Caribbean
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STATUS OF PEST AND DISEASE MANAGEMENT OF SWEET POTATO IN THE CARIBBEAN

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Outline

- Introduction
- Challenges facing sweet potato industry development
- Initiatives to address the issue of pests
- Current status
- Moving forward
Introduction

- Globally, Sweet potato (*Ipomoea batatas*) is among the most important food crops and the most popular root crop produced and consumed in developing countries.
- A priority commodity for the Caribbean Community (CARICOM).
- A nontraditional crop which Governments of the region consider a vital component in the region’s thrust in food and nutrition security.
Introduction

- Under the CARICOM Regional Transformation Programme for Agriculture, **CARDI** has led responsibility for the development of the regional sweet potato industry.
- **CARDI** has spearheaded research and development efforts to enhance the sweet potato industry in the Caribbean through a value chain approach.
Challenges

Some constraints to sweet potato production:

- Improper matching of varieties with production areas
- Poor yields associated with poor agronomic practices
- Inconsistent quality
- High incidence of pests and diseases
- Inappropriate post harvest handling
Interventions

Through collaborative initiatives, actions along the value chain have included:

- Characterisation of sweet potato varieties found in various countries for production, productivity, climate resilience and value addition
- Multiplication and distribution of disease-free planting material to farmers
- Development and transfer of production technologies
- Identification and transfer of low resource and cost effective post harvest techniques
- Development of investment profiles

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Interventions

- Introduction of high yielding cultivars
- Studies/analyses including:
  - Agronomic studies in varying agroecological zones
  - Evaluation of Integrated Pest Management (IPM) and post-harvest management tactics
  - Biochemical analyses of various varieties/accessions
  - Standardization of the multiple varieties/accessions in the region through morphological studies
Interventions

- Capacity building among stakeholders of sweet potato in:
  - Integrated Pest Management (IPM)
  - Good Agricultural Practices and post-harvest management
  - Crop modelling
  - Professional development in the areas of weed management and virology through graduate studies, workshops and short courses

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Interventions

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**Key Initiatives - Integrated Pest Management Collaborative Research Support Program (IPMCRSP)**

- The global project, was managed by Virginia Tech and hosted in the Caribbean by CARDI. Funding: United States Agency for International Development (USAID)

- To develop IPM packages for the Caribbean and regionalise the the IPM technologies developed

- Collaboration was fostered among local, regional and some 13 US organizations/institutions resulting in complementary research efforts and exchange

- **Screening of multiple pest resistant sweet potato lines for resistance to major pests**

- **Evaluation of biorationals as safer alternatives**

- **Dissemination of IPM technology**

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Key Initiatives- Increased Production of Root and Tuber Crops in the Caribbean through the introduction of improved marketing and production technologies

- The project, was executed by CARDI. Funding: Common Fund for Commodities (CFC) and European Union (EU).
- To support the development of a commercially viable and sustainable regional root and tuber crop industry that facilitates the improvement of livelihoods and overall food security/sovereignty

- Component 1: Planting material
- Component 2: Production Technologies and Practices
- Component 3: Fresh and value added product development
- Component 4: Group/cluster development
- Component 5: Technology transfer
Key Initiatives - Increased Production of Root and Tuber Crops in the Caribbean through the introduction of improved marketing and production technologies

- Component 1. Planting material
  - Establishment/refurbishment of plant propagation facilities (tissue culture labs, hardening and multiplication facilities)
  - Conservation of germplasm (market acceptable varieties)
  - Training of key personnel in conservation and mass propagation

- Component 2: Production Technologies and Practices including
  - High yielding varieties
  - IPM strategies
  - Nutrient and water management techniques
  - Soil fertility

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Key Initiatives: Increased Production of Root and Tuber Crops in the Caribbean through the introduction of improved marketing and production technologies

Component 5: Technology Transfer
- Training sessions in Integrated Crop Management practices
- Demonstration plots on farms and on stations
- Information/training on product development and utilization
Key Initiatives

- Under Intra-ACP Agriculture Policy Programme (APP) which was executed in the Caribbean by the Inter-American Institute for Cooperation of Agriculture (IICA). Funding from the European Union (EU). Component 2 of the project was implemented by CARDI.

- To Increase productivity and production of roots and tubers from validated/demonstrated and economic technologies

- Demonstration plots were established and training was provided to farmers with special thrust to engage youth and women.

- Training sessions on Integrated Pest Management (IPM)
  - Pest identification (economically important pests of sweet potato)
  - Biological, cultural and chemical methods of managing these major pests
  - Field scouting for pests
  - Construction and use of Sweet potato weevil pheromone traps

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Current Status

- CDB/FAO study of 2019 highlighted major challenges to the agri-sector sector, namely
  - Weak market linkages,
  - Underdeveloped value chains
  - Low agricultural productivity

- Despite the foregoing initiatives, major gaps remain and the identified challenges persist in the sweet potato industry

- Technology adoption and adaptation are below expectation, which speaks to the need for improved information dissemination methods, aided by modern ICTs, especially given declining resources in traditional extension services
Current Status

- Under an FAO global project for the ‘Identification of a strategy and related framework for promotion of alternatives to carbofuran and carbosulfan,’ a survey (n=1572) 28% of farmers (AB, DOM, JAM, SVG, SKN, TT) indicated that sweet potato was their most important crop.

- Only 21.3% of respondents had received IPM training (most commonly diamond back moth, cabbage and sweet potato weevil) although many had heard of IPM.

- 39%-72 %, by country, saved planting material from their best plants to replant their root and tuber crops.
Next steps

CARDI is implementing the CDB Regional Sweet Potato Value Chain Enhancement and Technology Transfer - Antigua and Barbuda, Barbados, Guyana and Saint Vincent and the Grenadines (USD 810,000)

- **Component 1:** Sweet Potato Value Chain Analysis, Market Assessment and Business Case Study/Investment Profiles. -to develop recommendations for strengthening the Regional sweet potato value chain, improve market linkages and highlight opportunities for investments

- **Component 2:** Market-Preferred Sweet Potato Varieties Research - to improve the availability of market preferred and climate-resilient sweet potato varieties/genotypes and enhance production and processing

- **Component 3:** Technology Transfer/Adoption - to improve the availability and accessibility of information on sweet potato production, processing and consumption by farmers and value chain actors in BMCs
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