HORTICULTURE DIVISION

Divisional Scientific Officer: Mr. N.Gopaul

1.0 Introduction

The Horticulture Division continued with its long standing activities in the fields of vegetable seed production, plant propagation and plant genetic resource (PGR) conservation aimed at:
1. Ensuring an adequate and timely supply of quality vegetable seeds and other planting materials to the planting community and public.
2. Conserving crop genetic resources for sustainable use.

2.0 Activities

2.1 Seed production

At Barkly ES (BES), 9 different crops were grown on some 3.0 ha for the production of seeds whilst at Roches Brunes Seed Production Centre (RBSPC) 7.15 ha were planted to 13 crops for the same purpose.

About 28 tonnes of harvested materials and 15,400 fruits of more than 40 varieties and types of vegetable crops grown on a total area of 26.0 ha on different stations of Horticulture and Agronomy Divisions were received at BES for seed processing.

Moreover 23,489 fruits and 627kg of fruits were processed at BES for plant propagation.

In respect to the Quality Declared Seeds (QDS) programme, 26916 fruits were received for processing at BES.

The quantity of seed issued by the Seed Processing Unit (SPU) amounted to 5,600 kg.

A total of 1262 germination tests and 179 analysis of moisture content were carried out.

The amount of seeds disposed by the Division amounted to 2,550 kg which represents 73% of the set target of 3,500 kg for the reporting year.

2.2 Plant propagation

2.2.1 Activities undertaken by Plant Propagation Unit (PPU)

At the Plant Propagation Unit (PPU), 36,583 plants of different fruit and ornamental species were produced as follows:

(i) Breadfruit: 657
(ii) Citrus grafts: 8793
(iii) Mango grafts: 945
(iv) Misc. grafts (Jujube, Atemoya, etc.): 98
(v) Litchi layers: 3132
(vi) Coconut seedlings: 1372
(vii) Pawpaw: 4584
(viii) Misc Fruit trees: 15448
(ix) Misc Ornamental/Spices/Medicinal plants: 1554
(x)
2.2.2 Production by Tissue culture

A total of 10,107 tissue-cultured plants were produced. These comprises of
(i) Orchids : 7,057  
(ii) Banana : 2,201  
(iii) Anthurium:  513  
(iv) African violet (336 plants).
The number of plants sold was 49,333 which represented 110% of the year’s target of 45,000.

2.3 Conservation of plant genetic resources (PGR)

2.3.1 Seed Genebank Activities

At the Seed Gene Bank of Plant Genetic Resource Unit (PGRU) following activities were carried out:
- 39 accessions were sent for regeneration
- One hundred and fifty (150) germination tests
- 46 moisture content tests
- 31 accessions were packed for long term conservation

2.3.2 Field Genebank Activities

(a) Conservation and Maintenance
One hundred and two (102) accessions including root crops and fruit plants were maintained and conserved at the Field Gene Bank located at Nouvelle Découverte Plant Genetic Resource Unit (NDPGRU). Other commodities like Rose (Root stocks), Fern, Dwarf Bamboo and strawberry were maintained for propagation. Endangered endemic species (Albizia vaughanii, Badula reticulata and Elaeocarpus bojeri) rescued by the PGR Unit of the division were maintained at NDPGRU to provide material for other possible modes of propagation.

(b) Regeneration/Multiplication/Selection/Characterisation
Accessions of maize, amaranthus, bean, lettuce, chilly, cauliflower, nightshade and winged bean were grown for regeneration and multiplication.
Pumpkin, bottlegourd and cucumber were grown for characterisation and selection exercises.

2.3.3 Development and Scientific activities

(a) Rescue of Mango Germplasm
Sixteen (16) mango germplasm collected at Plaisance ES were successfully propagated for conservation and ultimate utilisation.

(b) Collection of germplasm
Three accessions namely, garlic, lettuce (collected at Creve Coeur) and a lima bean collected from planter in market and regenerated at Roche Brunes SPC were sent to the Seed genebank for conservation.
(c) Activities on traits identification and selection exercise within accessions

Work was initiated on the characterisation of accessions of bean, bottle gourd, chilly, cucumber and garlic at RBSPC and NDPGRU and on the identification of several types in bottle gourd var. Natale at Richelieu ES and Plaisance ES (PES).

1. Five types of bottle gourd (as per shape) were identified in seed production field (from PES).
2. Two types of cucumber were identified within the accession under study at Nouvelle Decouverte PGRU
3. One chilly accession with low germination percentage was rescued.
4. Data input of garlic accessions was ongoing at Nouvelle Decouverte PGRU.
5. The data on fruit traits and yield assessment of bottle gourd were collected.

2.3.4 Expert visits in connection with PGR activities

Two experts from the SADC Plant Genetic Resource Centre (SPGRC) based in Lusaka, Zambia, namely Mr. L. Qhobela (Senior Programme Officer, ex-situ conservation) and Mrs T. Lupupa (Senior Programme Officer, in-situ conservation) visited the island from the 1st to 4th and from 21st to 27th August 2011 respectively, to monitor progress made by Mauritius in the conservation of PGR.

They had in-depth discussions with officers responsible for the subject of PGR and attended field visits organised in relation thereto.

Reports encompassing their recommendations were received at the Division and would be considered in the preparation of the programme of work of 2012.

2.4 Quality Declared Seeds Projects (QDS)

Ten growers were involved in seed production of cucumber under the QDS project for the Ministry. Three plantations (1.2 arp) severely affected by drought and pests were not retained for seed production. The remaining seven growers produced 224.2 kg of seeds from a total acreage of 8.65 arpents.

Five contractors signed the agreement for seed production of squash under the QDS project. Only three contractors implemented the plantations. However, all the plantations were not retained for seed production due to severe viral infection.

2.5 Trials on squash

Two trials were on-going at BES and NDPGRU on squash respectively to:

1. Assess development and maturation of seeds.
2. Study the effects of fruit size, number of fruits per plant) and plant density on the yield and quality.

2.6 Other activities

2.6.1 Consolidation of the Seed Bill and Plant Breeders’ Rights Bill

At the request of Management, two bills namely the Seed Bill and Plant Breeders’ Rights Bill were consolidated into one as both dealt with several cross-cutting issues including the designation of a common office for their administration. The new version was discussed with
and approved by concerned stakeholders prior to submission in June 2011 to the office of the Permanent Secretary.

2.6.2 IRACC project

The Division formed part of a national platform set up in the wake of the implementation of a regional agro-ecology project (Initiative Régionale Agroécologie Changement Climatique, IRACC) by the Indian Ocean Commission. The objective was to adopt relevant technologies available regionally to help small farmers in the islands of the south-west Indian Ocean adapt to prevailing climate changes.