35th International Vegetable Training Course
"Vegetables: from seed to table and beyond"

World Vegetable Center

Module 1

Development Action Plan (DAP)

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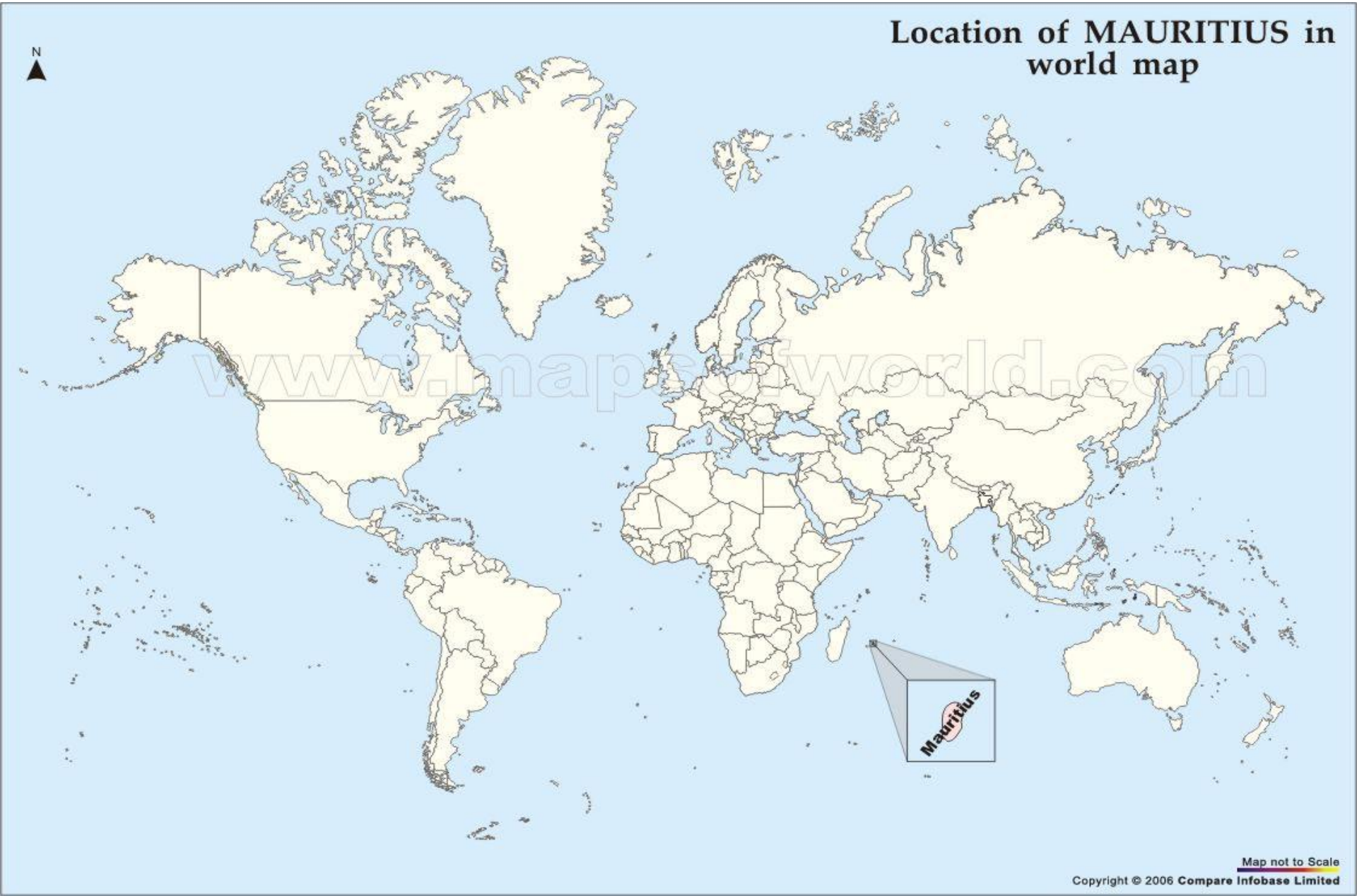
Mauritius

Mauritius


Location of MAURITIUS in world map
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Mauritius
Map not to Scale
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- **Mauritius is situated in the South West Part of the Indian Ocean**

- **Capital: Port Louis**

- **The total land area: 2,040 km² :-**
  - **Agriculture : 46%**
  - **Housing: 20%**
  - **Public infrastructure: 2%**
  - **Other (Forest, Rivers, etc): 32%**

- **The highest point is ‘Piton de la Petite Rivière noire’ which is 828 meters high**

Economy

The Economy of Mauritius has four pillars:

- **Tourist – 54.6%**
- **Services (Finance, ICT)- 23.5%**
- **Manufacturing Industry– 16%**
- **Agriculture - 5.9%**

My Responsibility/Organization/Division

- **Responsibility**

Research Scientist/Senior Research Scientist(Plant Pathology)

- **Organization**

Food and Agricultural Research and Extension Institute, Ministry of Agro-industry , Mauritius

- **Division**

Plant Pathology Division

Food and Agricultural Research and Extension Institute(FAREI)

- **The FAREI operates under the aegis of the Ministry of Agro-Industry and Food Security**
- **It is responsible to conduct research in non-sugarcane crops, livestock and to provide an extension service to farmers:**

- **Research Divisions –Agronomy, Vegetable and Ornamental (VOD), Fruit , Entomology, Plant Pathology and Livestock**
- **Extension (Crop and livestock) , Training units**

Plant Pathology Division- Research projects/ Activities

1. Detection, identification of plant diseases and formulation of sustainable management strategies

Detection of seed borne viruses in cucurbits in Mauritius

- Screening of seed borne viruses in cucurbits varieties by serological method (ELISA) e.g: Squash Mosaic Virus
- Review of existing seed borne viruses in cucurbits

2. Evaluation of germplasm against major diseases

- Screening of tolerant varieties against diseases (TYLCV)

3. Disease surveillance

- Surveillance against existing and new diseases(Begomoviruses)

Plant Pathology Division: Research projects/ Activities (2)

4. Evaluation of the efficacy of new fungicides and Biofungicides

- Screening of fungicides and bio-fungicides against diseases of economic importance

5. Management of soil borne pathogens at Nursery level

- Treatment of seedlings against soil borne pathogens

6. Potato – Seed Production

- Virus indexing through ELISA
- Active Growth Inspection

7. Assist farmers in production of Quality Declared Seeds (QDS)

Constraints to Vegetable production in Mauritius

- **Vegetable growers face problems of insect pest and diseases**
- **Major diseases of food crops during unfavorable climatic conditions – Lots of pesticides application**
- **Soil borne diseases**
- **Emerging diseases- Begomoviruses eg TYLCV on tomato**
- **Emerging insect pests**

How to solve the problems of growers?

Through Quality research, diagnosis and giving appropriate recommendation to growers

Objectives of Research works and activities at the Plant Pathology Division

- **To solve food crop growers (customers) problems with relation to above mentioned constraints and give appropriate management practices of diseases:**

- **Introduction of tolerant varieties**
- **Evaluation of novel pesticides including Biofungicides**
- **Disease surveillance-detection of new diseases**
- **Implementations of Integrated Disease Management strategies**
- **Diagnosis and recommendations**

Note : The Plant Pathology Division has a ISO/IEC 17025: 2005 accredited laboratory which also offers a diagnosis facility to customers

Importance of the training course with respect to the objectives set up at Plant Pathology and Development Action Plan

Seedling management and seed health testing

- Theoretical and practical training on production of quality seedlings – Important for research trials

- Detection of seed borne disease using different techniques (eg Agar and between papers) and seed treatment (HWT/DHT)

Objectives:

- Production of quality seedlings in research trials

- Diagnosis of seed-borne diseases from seeds, give appropriate treatment and supply quality seeds to growers

Seedling management and seed health testing(continue)

- Detection of seed borne virus(es) in cucurbits using protocol obtained from the training course:

- Objective is to set up appropriate management practices through detection of seed borne viruses (existing and emerging viruses) e.g. Squash Mosaic Virus

Note: Virus disease of cucurbits is of major economic importance in Mauritius

Experimental design, analysis and interpretation of data

- Use of knowledge gained on the lecture on experimental design for analysis and interpretation of data

- Use of **Star 2.0.1** software

  Objective: For analysis of data and it is also a useful software for different types of experimental designs

Identification/Diagnosis of Nematodes

- Presently I am involved in diagnosis and research works related to diseases of Viral, fungal and bacterial etiologies

- Theoretical and practical knowledge gained during the training course will help me in identification and diagnosis of plant pathogenic Nematodes and give appropriate recommendations on management practices to the farming community

Introduction and Evaluation of Germplasms

Introduction and evaluation of germplasm from Word Vegetable Centre to screen against major diseases of food crops. For e.g against TYLCV which is a major constraint to tomato production in Mauritius

Overall gain from the training course

- Refresher course- many aspects of plant pathology covered during the training
- New techniques and knowledge gained and mentioned in previous slides
- New skills acquired on vegetable grafting techniques and is important in disease management strategies

Personnel and Time frame for implementation of activities

- **Personnel:** Myself and collaborators (researchers) at the Plant Pathology Division

- **Time frame:** As from October 2016 for ongoing projects/activities:

-Detection of seed borne diseases of cucurbits

-Data analysis and interpretation using **Star 2.0.1** software

-Diagnosis of plant pathogenic nematodes infecting vegetables

Challenges

- No major challenges…however:

- Introduced varieties many not show tolerance to existing strains of plant pathogens in Mauritius

- Acceptance by farmers/consumers?

Acknowledgement

- World Vegetable Centre: Management Team
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- FAREI management and the Principal Research Scientist (PRS) of Plant Pathology Division for selecting me for the training course
- The ministry of Agro-industry, Mauritius for giving me release to attend the training course
- All participants in the training course


Eat more vegetables

Thank you