STDF | STANDARDS and TRADE DEVELOPMENT FACILITY

Establishing and maintaining fruit fly-free areas in Southern Africa

Jan Hendrik Venter, Director Plant Health, Department of Agriculture, South Africa

Domingos Cugala, Eduardo Mondlane University, Mozambique

Date: 8 April 2025

Project Overview: F3: Fruit Fly Free

Problem

- Presence of fruit flies in horticulture across South Africa & Mozambique
- Inadequate information on the occurrence of fruit flies
- Results in difficulties obtaining and maintaining market access

Project objective

- Develop framework for PFAs and ALPPs

Goal

- Improve market access in the region

Beneficiary countries

- South Africa and Mozambique

Budget

- Value $ 2,893,259
- STDF Contribution $ 721,584

The project targeted 3 types of fruit flies, across South Africa and Mozambique

1

Zeugodacus cucurbitae

(Melon fruit fly)

2

Bactrocera dorsalis

(Oriental fruit fly)

3

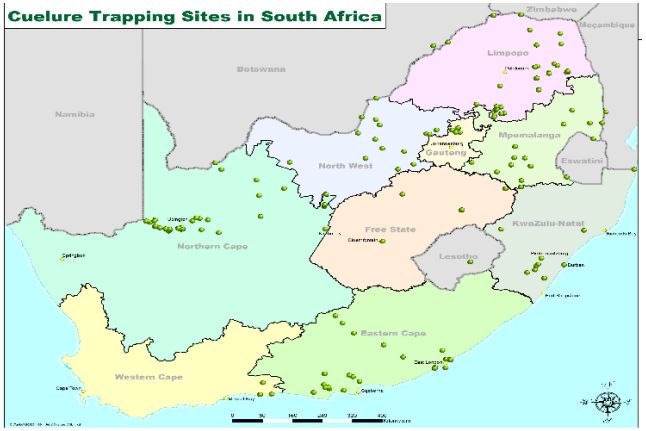
Ceratitis capitata

(Mediterranean fruit fly)

South Africa: Melon Fly & Oriental Fruit Fly

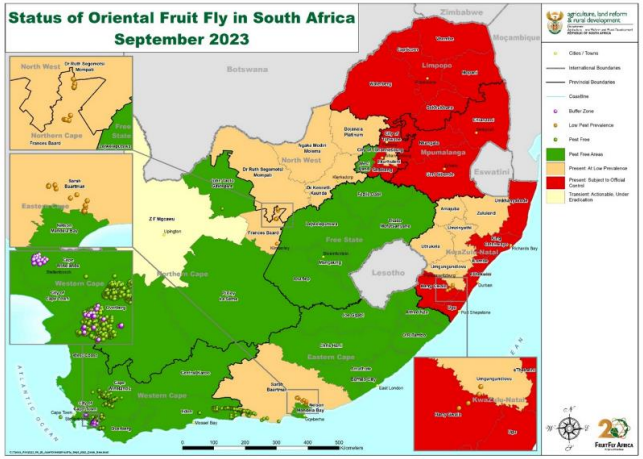
1. Melon Fly

- Surveilled 9 provinces, developing approx. 301 traps
- Objective to ensure whole of SA is PFA
- Action plan developed
- No detections



2. Oriental Fruit Fly: Establishment of PFA's

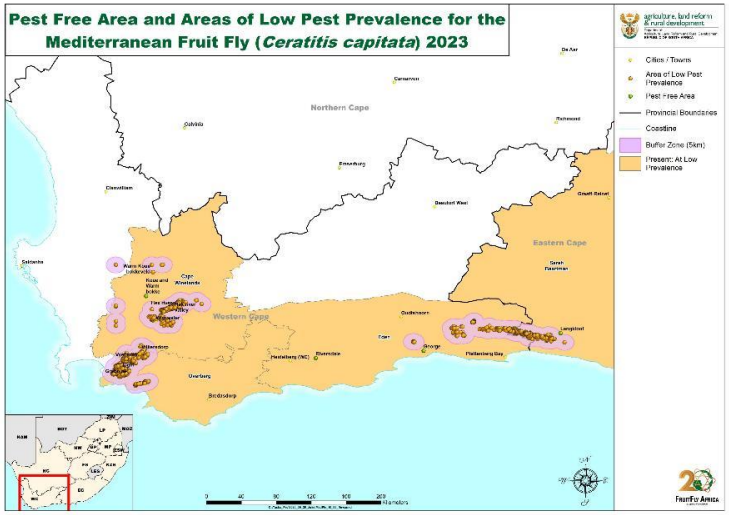
- Start of the project PFAs: Free State, Western Cape, Eastern Cape and Northern Cape provinces
- Isolated incursions, successfully eradicated by cooperation public and private sectors
- Status changed in one area in the Eastern Cape, the Sunday River Valley from PFA to ALPP
- ALPPs Oriental fruit fly numbers never exceeded 1 fly/trap/day in production areas



Establishing and maintaining fruit fly-free areas in South Africa

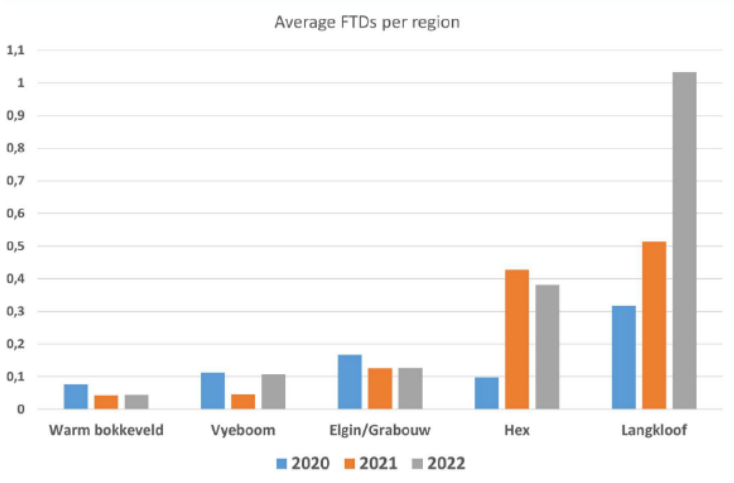
OFF Areas of Low Pest Prevalence

- The Richmond area in the Kwazulu Natal Province
- Addo area in Eastern Cape
- Specific production areas in Freestate Province
- Jan Kempdorp area in Northern Cape
- Ixopo (KZN), Mpumalanga high production areas, North West Province, Orange river area may be included also



Establishing Approved Low Pest Prevalance Areas in South Africa for the Mediterranean fruit fly

- Western and Eastern Cape
- Monitoring data for Mediterranean fruit fly (Hexrivier, Warm Bokkeveld, Elgin/Grabouw, Vyeboom, Langkloof) mostly not exceed 1 FTD



Mozambique: Oriental Fruit Fly & Melon Fruit Fly

Two invasive fruit fly in Mozambique:

1. Bactrocera dorsalis (Oriental Fruit Fly)
2. Zeugodacus cucurbitae (Melon Fruit Fly)

Surveillance conducted:

- 8 provinces – 214 traps
- Southern part (Maputo, Gaza and Inhambane) = PFA
- Buffer zone
- Action plan
- Pest notification on IPP

Mozambique: Impact of fruit fly presence on trade

Bactrocera dorsalis

(Oriental fruit fly)

- Damage level of 94.0 %+ of mango fruits reported in the North Mozambique
- Resulted in temporary ban on fresh fruit exports, resulting in US$2.5 million of losses due to presence of oriental fruit fly
- Suspension and reduction of investments and exports of fruit and vegetable, resulting in severe financial annual losses of US$23 million to producers

Zeugodacus cucurbitae

(Melon fruit fly)

- The melon fruit fly (*Zeugodacus cucurbitae*) is a major global pest of cucurbit fruits.
- In Mozambique, it was first recorded in 2013 in Mocímboa da Praia and Palma, Cabo Delgado Province.

Mozambique: Mitigation strategies

Bactrocera dorsalis

(Oriental fruit fly)

- Collaborative efforts by government authorities and the private sector led to a reduction in *B. dorsalis* (Oriental fruit fly) populations in some areas.
- However, achieving and maintaining ALPP status required systematic data collection and official monitoring.

Zeugodacus cucurbitae

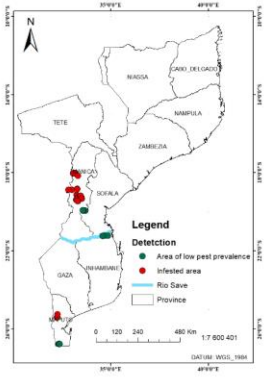
(Melon fruit fly)

- To assess current distribution and pest status, Cuelure-baited traps were deployed in all provinces.
- Since 2021, monthly surveys have been carried out to support the establishment of Pest Free Areas (PFA) for *Z. cucurbitae*.
- 232 cuelure-baited traps were placed in all provinces of Mozambique resulting in no melon fly species being detected in the southern part of Mozambique.

Mozambique: Outcome

Bactrocera dorsalis

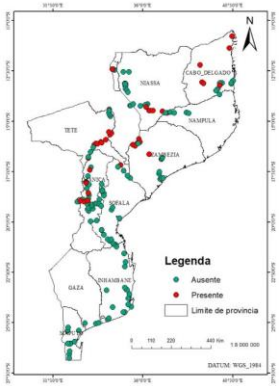
(Oriental fruit fly)



- To support ongoing exports, a national monitoring program was reinitiated in 2021 with funding from the STDF.
- As part of this program, 74 ME-baited traps with DDVP were deployed across key locations.
- Currently, are three ALPPs: 3 rios (Catuane), Jabi-Agri (Govuro) and Gan-el (Dombe)

Zeugodacus cucurbitae

(Melon fruit fly)



- No Z. cucurbitae specimens were collected in the Southern provinces (Inhambane, Gaza and Maputo)
- Therefore, the Southern region Mozambique was considered a PFA for Z. cucurbitae

Lessons learned from both projects:

1. Prevention and Early Detection: Most cost-effective strategy for managing invasive fruit flies.
2. Proactive Surveillance: Essential for minimizing economic losses and protecting agriculture.
3. Impact on Horticulture: Presence of invasive species affects market access; effective trap thresholds are crucial.
4. Trade Facilitation: Identifying PFAs and ALPPs ensures compliance with export standards.
5. Technological Advancements: Mobile apps and smart traps improve species identification and surveillance accuracy.
6. Public-Private Partnerships: Collaboration leads to timely responses and reduced pesticide use.
7. Collaborative Efforts: Successful partnerships enhance capacity building and resilience.
8. Regional Cooperation: Mozambique and South Africa's collaboration strengthens biosecurity measures.