

Regional Workshop for the Global Review of Phytosanitary Surveillance in the Context of the IPPC Standard (ISPM 6) – Identification of Challenges and Best Practices

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Outline

- About Fiji
- Agriculture in Fiji
- Pest Surveillance in Fiji
 - (i) Specific Survey
 - (ii) General Surveillance
- Pest Surveillance Methods
- Challenges
- Best Practices

About Fiji

- Fiji covers about 1.3 million square kilometers of the South Pacific Ocean.
- Total land area is 18,333 square kilometers.
- There are two major islands - Viti Levu which is 10,429 square kilometers and Vanua Levu 5,556 square kilometers.
- Other main islands are Taveuni (470 sq km), Kadavu (411 sq km), Gau (140 sq km) and Koro (104 sq km).
- 87.9% of land is owned by indigenous Fijians while 3.9% is State land. Freehold land comprises 7.9% and Rotuman land is 0.3%.
- The capital of Fiji is Suva, located in Viti Levu



Agriculture in Fiji

- Agricultural land = 285 ha; Taro, cassava, leafy vegetables and fruits, rice and sugarcane.
- Exports: Taro, Cassava, Yams, Leafy vegetables, Papaya, Mango, Eggplant, Breadfruit and other agricultural products to AUS, NZ, Canada, USA, Japan and other Pacific Island states.

Pest Surveillance in Fiji

- Government Agencies, Institutes and NGO's – PPS, BAF, Dept of Forestry, USP, SPC and NGO's.
- Not conducted by one(1) agency
- More General Surveillance
- Specific survey's targets high value crops
- Specialists exists across different sectors

Pest Surveillance Methods

◉ Insect Pests

- Field collections using aspirators, nets and removal of host plants
- Adults are freeze-killed and relaxed (mild steaming) before pinning
- Nymphs and larvae are preserved in alcohol
- Specimens are kept at BAF, PPS, USP, SPC and Dept. of Forestry



Pest Surveillance Methods

◉ Plant Diseases

- Field collection into small ice-box
- Laboratory preparations
- Isolation of infected plant
- Fungus and bacteria are cultured
- Cultures sent to SPC/CABI for identification
- Virus Indexing done at SPC (Technical assistance)

Pest Surveillance Methods

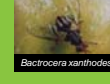
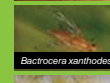
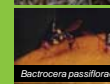
◉ Weed Surveillance

- Field collections
- Specimens are pressed for preservation
- Identification by Curator, USP and Weed Specialist at Plant Protection Services, Research Station.



(i) Specific Survey

- ◉ Fruit Fly Surveillance-established
 - *Bactrocera passiflorae*
 - *Bactrocera xanthodes*
 - *Bactrocera kirki* (only in Rotuma)
- ◉ Lures – ME, CUE and Trimed
- ◉ Un-established fruit flies
- ◉ Modified Steiner traps
- ◉ 2 weekly collection
- ◉ Done is collaboration between BAF /PPS
- ◉ Recording



<i>B. atramentata</i>	Cue-lure	Papua New Guinea
<i>B. striatellus</i>	No male lure	Papua New Guinea
<i>B. brevicauda</i>	Cue-lure	Australia, Papua New Guinea
<i>B. cucurbitae</i> (melon fly)	Cue-lure	Papua New Guinea, Solomon Islands, Guam, CHMI, Hawaii
<i>B. curculionis</i>	Methyl eugenol	Papua New Guinea
<i>B. curtipalpi</i>	Cue-lure	New Caledonia
<i>B. decussatus</i> (pumpkin fly)	No male lure	Papua New Guinea
<i>B. dorsalis</i> (Oriental fruit fly)	Methyl eugenol	French Polynesia, Hawaii
<i>B. dorsalis</i>	Cue-lure	Tonga
<i>B. dorsalis</i> (mango fly)	Cue-lure	Papua New Guinea, Solomon Islands, Palau, Federated States of Micronesia, Marshall Islands, Kiribati, Niue
<i>B. kirki</i>	Cue-lure	Tonga, Samoa, American Samoa, Niue, Wallis and Futuna, French Polynesia, Fiji Islands (Rotuma only)
<i>B. litorea</i>	Cue-lure	Papua New Guinea
<i>B. melanocera</i>	Cue-lure	Cook Islands
<i>B. melanocera</i>	Cue-lure	PIG, Solomon Islands
<i>B. minor</i> (Banana fly)	Methyl eugenol	Australia, Papua New Guinea
<i>B. neohumeralis</i>	Cue-lure	Australia, Papua New Guinea
<i>B. oblique</i>	No male lure	Papua New Guinea
<i>B. occipitalis</i>	Methyl eugenol	Palau
<i>B. papayae</i> (Asian papaya fruit fly)	Methyl eugenol	Papua New Guinea
<i>B. philippinensis</i>	Methyl eugenol	Palau
<i>B. pomonae</i>	Cue-lure	New Caledonia
<i>B. stratiotae</i>	Cue-lure	Papua New Guinea
<i>B. trifurcata</i>	Cue-lure	Vanuatu
<i>B. tritarsis</i>	Cue-lure	Papua New Guinea
<i>B. tryoni</i> (Queensland fruit fly)	Cue-lure	Australia, New Caledonia, French Polynesia, Pitcairn
<i>B. umbrosa</i> (breadfruit fly)	Methyl eugenol	Papua New Guinea, Solomon Islands, Vanuatu, New Caledonia, Palau
<i>Dacus areolaris</i>	Cue-lure	Papua New Guinea, Australia
<i>Dacus solomonensis</i>	Cue-lure	Papua New Guinea (Bougainville), Solomon Islands

(Source SPC, 2000)

(i) Specific Survey

◉ Host Fruit Survey/Whole Fruit Rearing

- Collection of fruits; cultivated and wild from tree and fallen
- Rearing at Fruit Fly lab
- Fruit fly emergence recorded



(ii) General survey

► General Pest and Disease Survey

(a) Field surveys – due to farmer report

- Specimen bottles
- Aspirators
- Nets
- knives, spades, forks
- Log book
- Labels

◉ (b) BAF/Dept. of Forestry – Wharf surveillance through beetle traps and sentinels.

- Using static traps
- Collection every week
- Identification at Forestry Lab or DPI Queensland (J. King and R. Wiley)
- Beetle resource with Dept. Forestry



► (b) General Surveys- Lau Group, Yasawa Group and Vanua Levu

- Survey of isolated areas
- Insect pest and plant disease
- Specialists across agencies; BAF, PPS, SPC



Other Pest Surveillance

- Delimiting Chilli Pod rot, Vitilevu & Vanua Levu
- Papaya disorder- once off (Volivoli and Dawasamu)
- Potato Bacterial wilt – Sigatoka Valley
- Rhino beetle
- Taro beetle
- Stick insect

Challenges

- ◉ Lack of essential equipment
- ◉ Lack of latest technology pest surveillance equipment – specific pests
- ◉ Lack of diagnostic facilities within Fiji
- ◉ Lack of adequate budget to carry out more specific surveys annually.
- ◉ Lack of training

Thank You