

Regional Expertise Training Workshop on Pest Surveillance

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Introduction of Surveillance Status and Activities on Fruit-fly in Thailand

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Topics

- Introduction
- Status of Fruit Flies in Thailand
- Integrated fruit flies control in
rose apples orchard for export





- Thailand is the 50th largest country in the world; most nearly in size to Spain.
- Thailand covers 510,890 sq km of land and 2,230 sq km of water.
- Thailand has a tropical climate and temperatures typically range from 19 to 38 degrees C (66-100F).
- The economy of Thailand is reliant on exports, which account for 60% of Thailand's approximately US\$ 200 billion GDP. The economy of Thailand is the 2nd largest in Southeast Asia. Thailand's exports consist primarily of agricultural products including fish and rice, of which it is the largest exporter in the world.

Classification of Fruit Flies

PHYLUM

ARTHROPODA

CLASS

INSECTA

ORDER

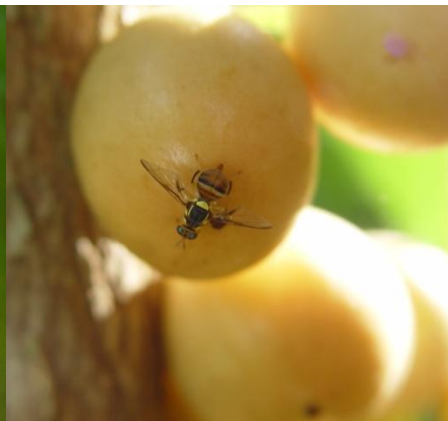
DIPTERA

FAMILY

TEPHRITIDAE

Fruit Flies = 4,000 species (500 genera)

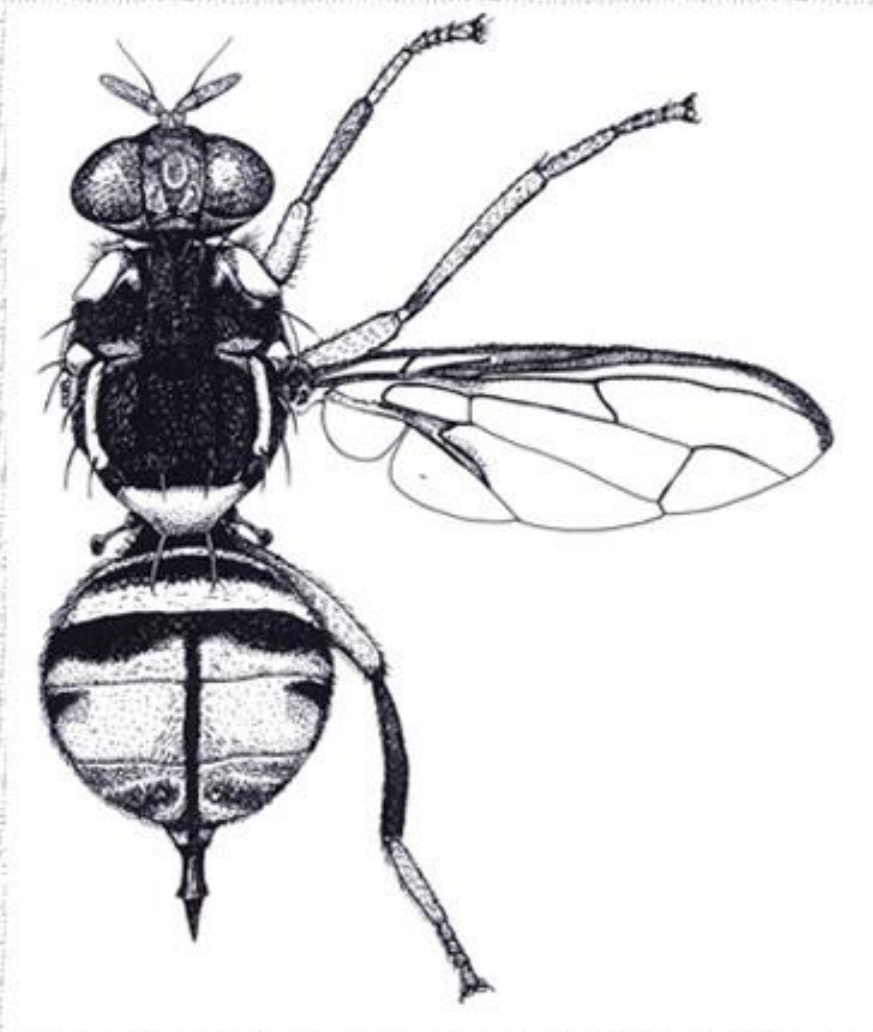
35% or 1,400 species = attack soft fruits



Status of Fruit flies in Thailand

1. *Bactrocera (Bactrocera) dorsalis* (Hendel)
2. *Bactrocera (Bactrocera) correcta* (Bezzil)
3. *Bactrocera (Bactrocera) carambolae* Drew and Handcock
4. *Bactrocera (Bactrocera) latifrons* (Hendel)
5. *Bactrocera (Bactrocera) umbrosa* (Fabricius)
6. *Bactrocera (Bactrocera) zonata* (Saunders)
7. *Bactrocera (Zeugodacus) cucurbitae* (Coquillett)
8. *Bactrocera (Zeugodacus) tau* (Walker)





Bactrocera (Bactrocera) dorsalis (Hendel)

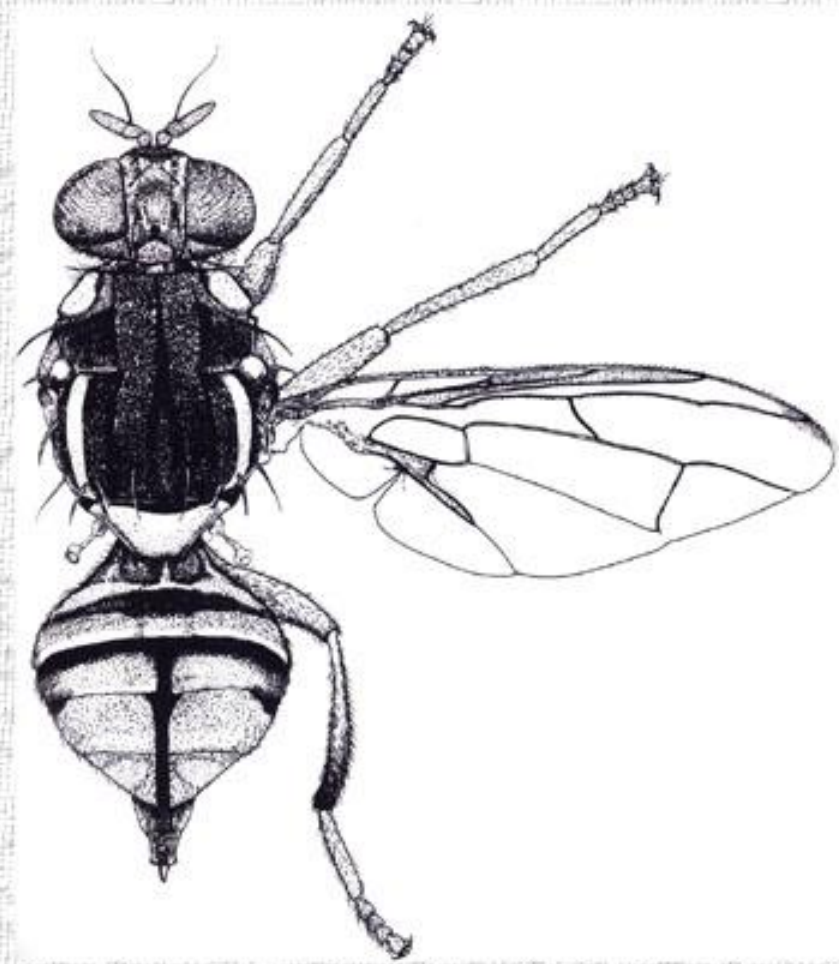


Distribution: cover country

Hosts : 52 sp. (Jirasurat,1994)

Economic pest status:

A major pest species



Bactrocera (Bactrocera) correcta (Bezzi)

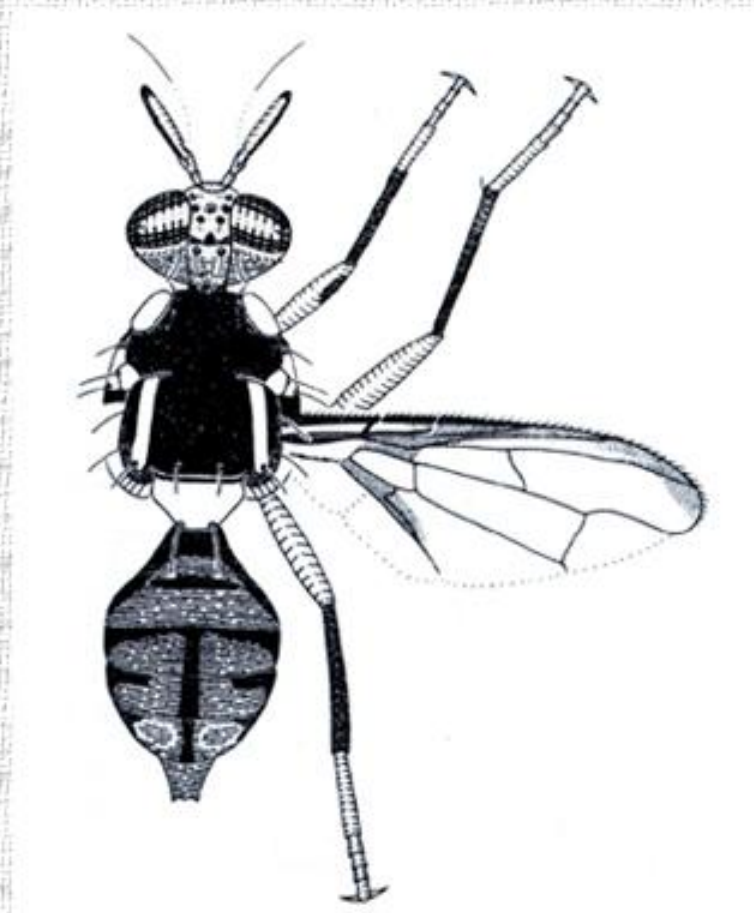


Distribution: cover country

Hosts: 36 sp. (Jirasurat, 1994)

Economic pest status:

A major pest species



***Bactrocera (Bactrocera) carambolae* Drew & Hancock**

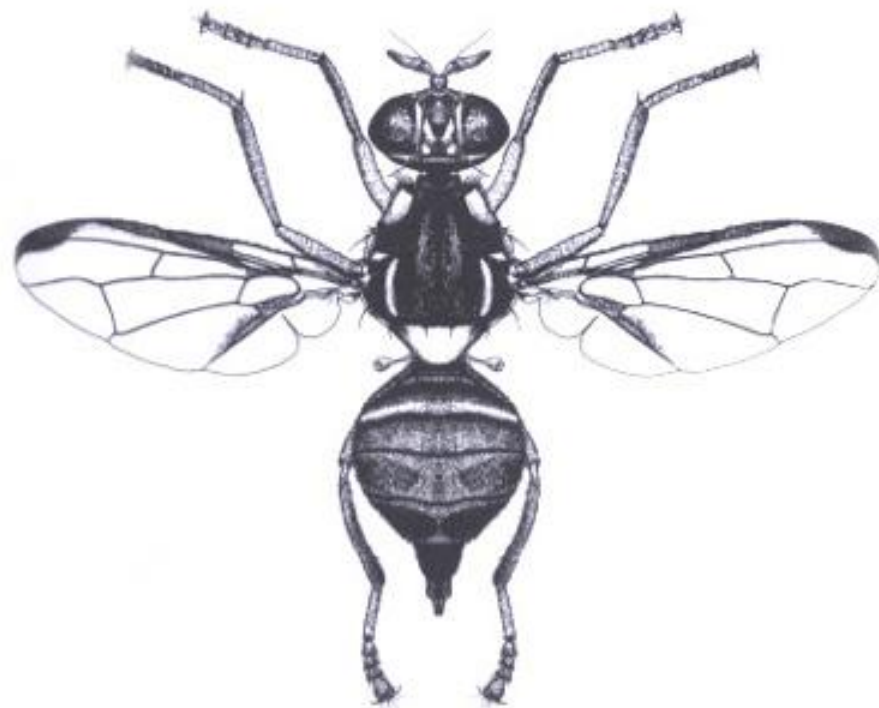


Distribution: south part of Thailand

Hosts: 6 sp. (Jirasurat, 1994)

Economic pest status:

A major pest species



Bactrocera (Bactrocera) latifrons (Hendel)

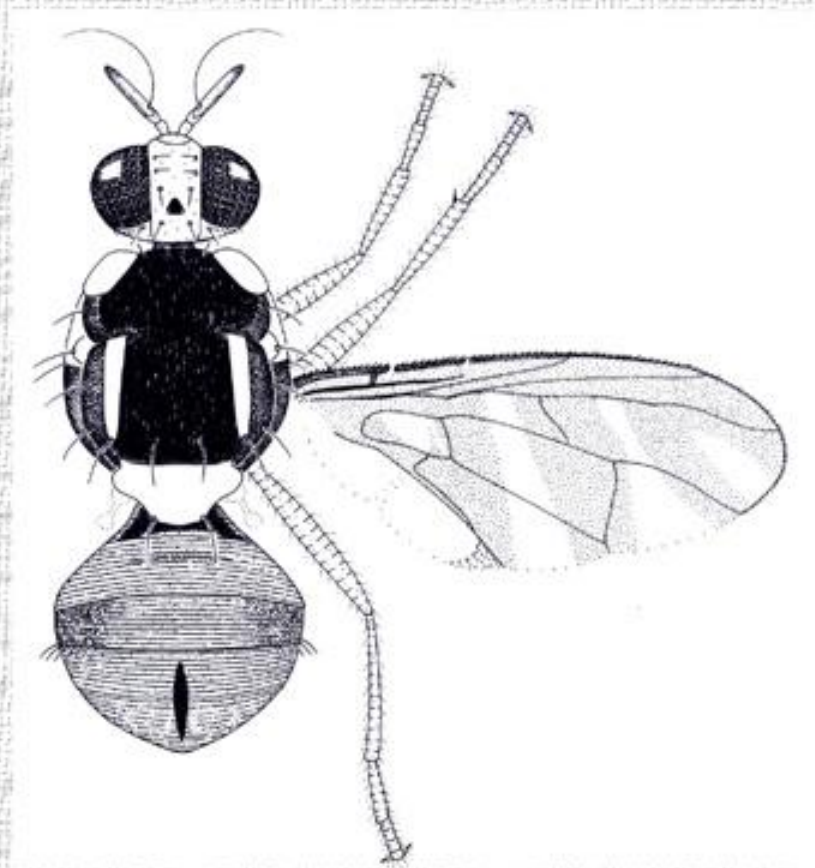


Distribution: cover country

Hosts: Solanaceae (9 sp.)(Jirasurat,1994)

Economic pest status:

A medium level pest species



Bactrocera (Bactrocera) umbrosa (Fabricius)



Distribution: cover country

Hosts: Moraceae (3 sp.) (Jirasurat, 1994)

Economic pest status:

A low level pest species



Bactrocera (Bactrocera) zonata (Saunders)

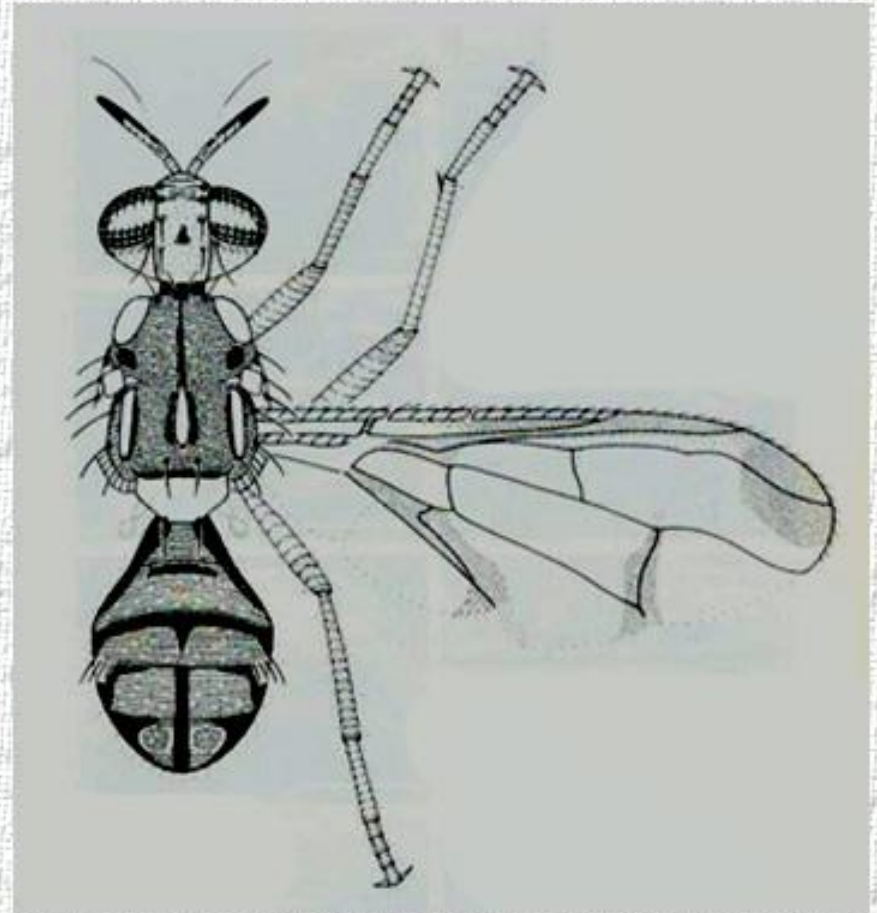


Distribution: north part of Thailand

Hosts : 2 sp. (Jirasurat,1994)

Economic pest status:

A medium level pest species



Bactrocera (Zeugodacus) cucurbitae (Coquillett)



Distribution: cover country

Hosts : 21 sp. (Jirasurat,1994)

Economic pest status:

A major pest species



Bactrocera (Zeugodacus) tau (Walker)



Distribution: cover country

Hosts : 11 sp. (Jirasurat,1994)

Economic pest status:

A low level pest species

Integrated fruit flies control in Rose Apples orchard for export



In Thailand: 3 species of fruit flies infested in rose apples



B. dorsalis was a primary pest



Integrated Pest Management Fruit flies in rose apples

Recommendation

- Sanitizing
- Monitoring
- Using protein bait
- Bagging

1. Sanitizing

- pruning the canopy



1. Sanitizing

- removing infested fruits from orchards



2. Monitoring

The population survey of fruit flies

- use Steiner's trap (20 traps per acre)

methyl eugenol + malathion 57% EC

control method needed when >1 FF/trap/day





Modified trap



Steiner's trap



Modified trap

3. Using protein bait

- 200 ml protein hydrolysate
- 10 ml malathion 57% EC
- 5 liters of water



3. Using protein bait

- spot spraying



4. Bagging

- white plastic bag size 8x16 inch and thickness 12.5-20 microns .
- 4 fruits per bunch
- at 14 days after fruit setting



at 14 days after stamens fell off



Conclusion

Integrated Fruit flies control in Orchard:

- Sanitizing
- Monitoring
- Using protein bait
- Bagging

Thank you for your attention

