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# CROP PROTECTION PLANNING

## THE FRUIT FLY MENACE

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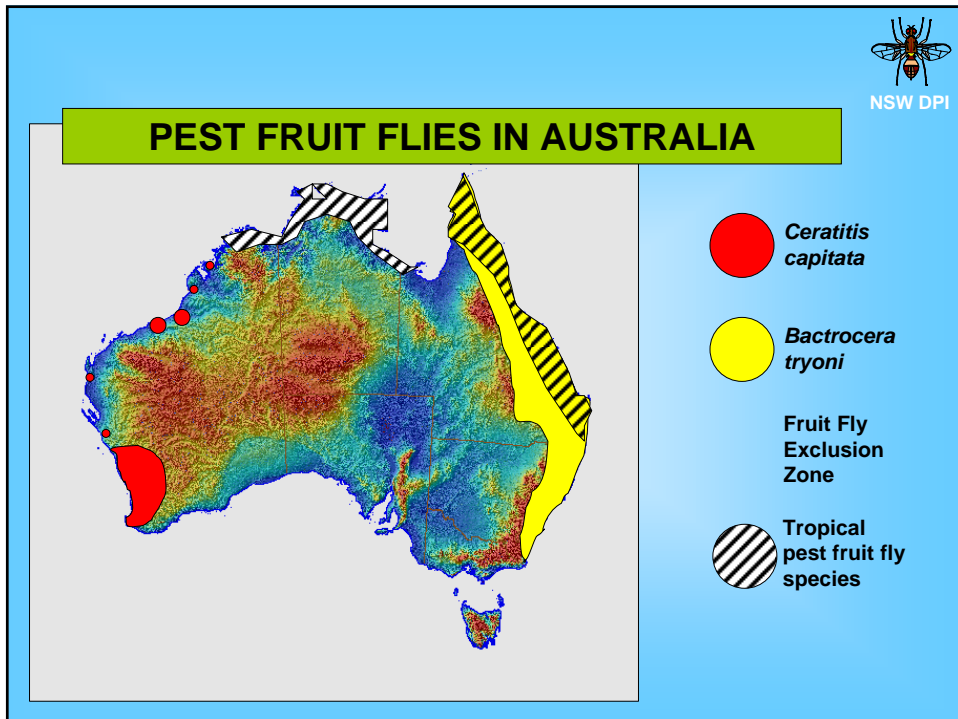


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### **Pest fruit flies in Australia**

- >270 Tephritid fruit flies in Australia (about 80 true fruit flies including 7 pest fruit flies)
- Not all if these pests exist in all production areas in Australia e.g. no Medfly in Eastern Australia and no Queensland fruit fly in WA.

## Australian Pest and Non-Pest fruit fly species





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## Queensland fruit fly life cycle



Queensland fruit fly adult (Male)



Male releasing sex pheromones



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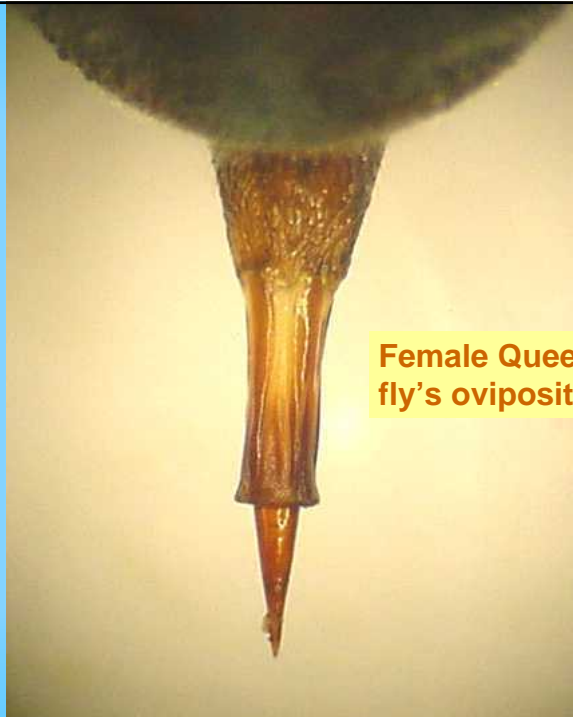
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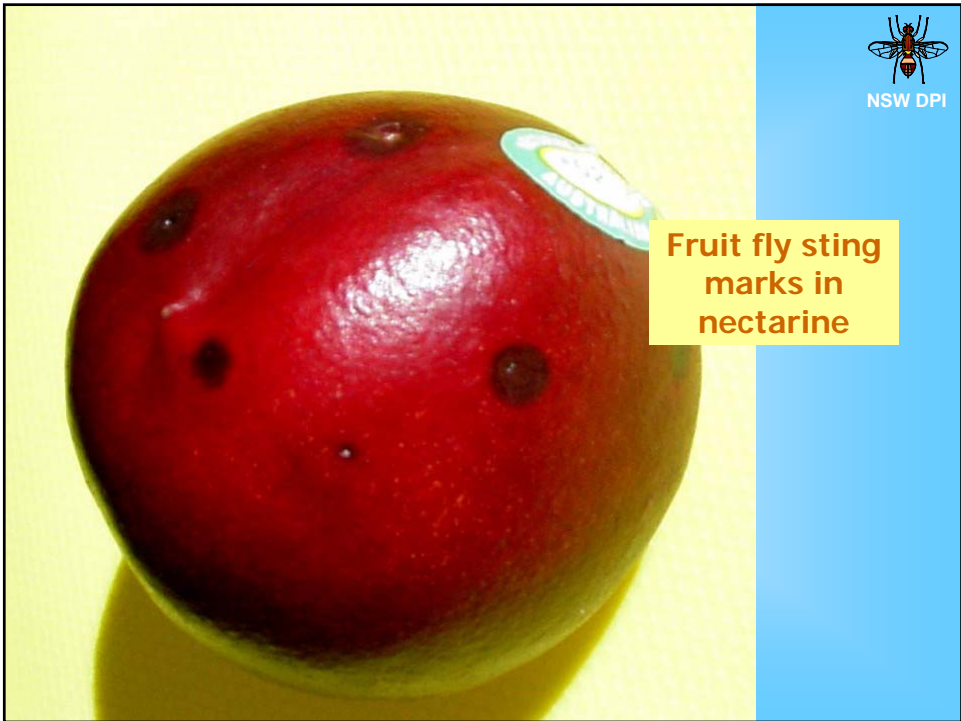
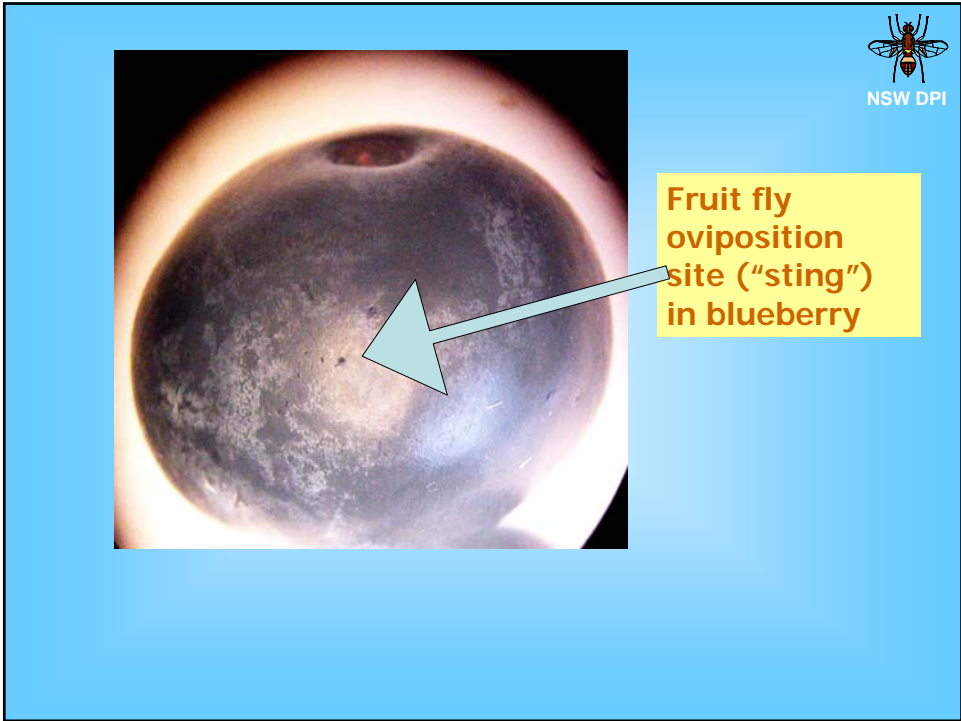
**Female Queensland fruit fly  
laying eggs into a fig**



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**Female Queensland fruit  
fly's ovipositor**







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Eggs hatch within 24 to 48 hours



Larvae grow from 2mm to 10mm in fruit within 7 to 14 days and then jump out of the fruit





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Peach damaged by Queensland fruit fly



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After leaving the fruit the larvae become pupae and stay in the ground



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External damage to peach caused by Queensland fruit fly leaving fruit to pupate



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After about 10 to 20 days the adult fly emerges from the pupal case. It takes about a week for the flies to mature, mate and lay more eggs.



## Fruit fly ecology



- Endemic or established populations
- New incursions
- New, more attractive crops
- Poor orchard, garden, council hygiene
- Feral, untended hosts
- Fertilizer use (?)
- Climate change (?)

## Geography and Climate



- Coast vs Inland
- North vs South
- Daily temperatures
- Frosts
- Rain and drought

## A Crop Protection Plan against Fruit Flies



- Year round plan may reduce the number of cover sprays needed
- Baits, male annihilation blocks, traps - applied early in the season and after harvest
- Orchard hygiene – feral, untended hosts, fallen fruit, unharvested fruit
- COSTS compared with BENEFITS

## Food based traps capture both male and female flies



## Commercial para-pheromone blocks and traps



Bugs for Bugs®

Amulet C-L®

Wild May®

## SUMMARY



- Understanding of the pest
  - Knowledge of crop characteristics
  - District geography and climate
  - Baits, traps, male annihilation blocks, cover sprays
  - Orchard hygiene
  - Cost: Benefit
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