



NSW DPI

# CROP PROTECTION PLANNING

## THE FRUIT FLY MENACE

Andrew Jessup, Sen. Research Horticulturist, NSW DPI, Gosford

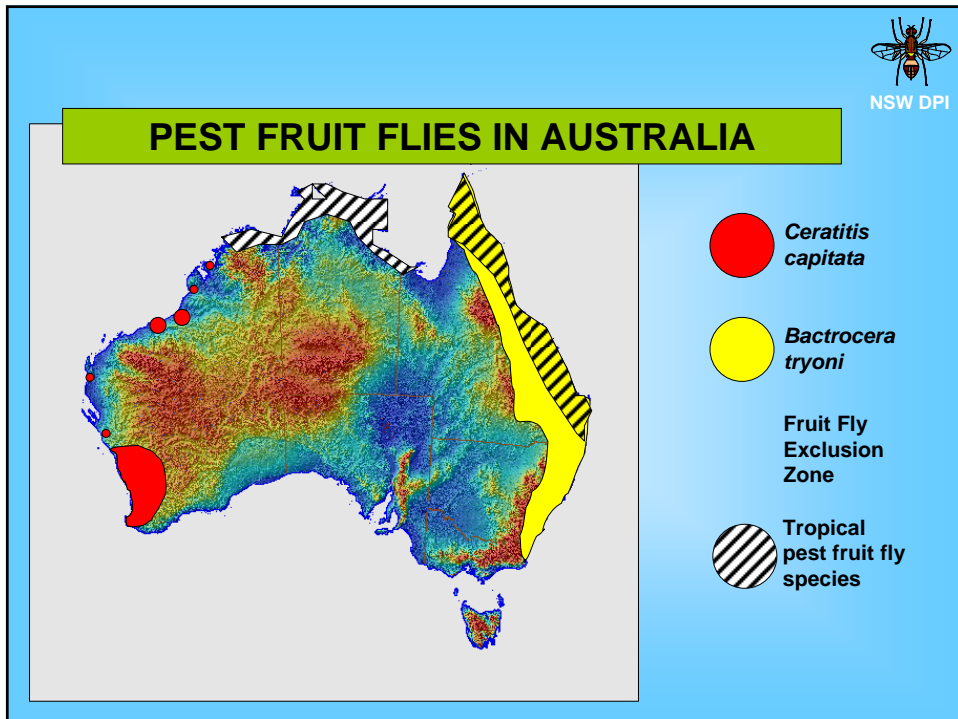


NSW DPI

### **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





NSW DPI

## Queensland fruit fly life cycle



Queensland fruit fly adult (Male)



Male releasing sex pheromones



NSW DPI



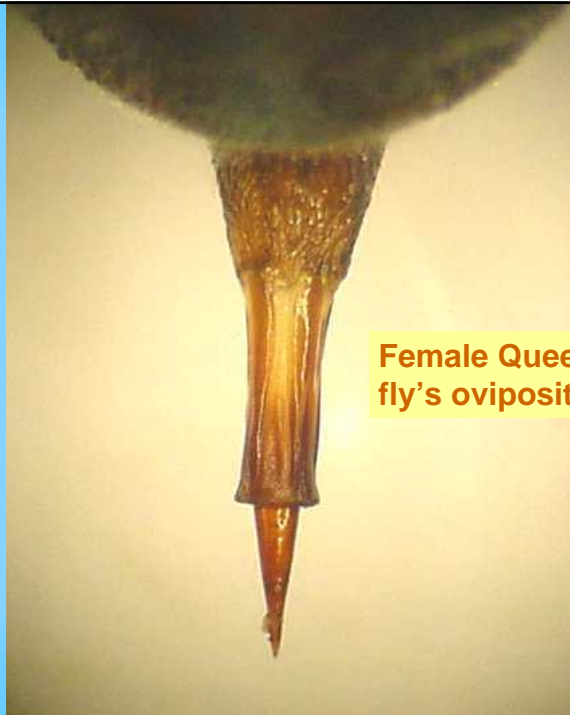
NSW DPI

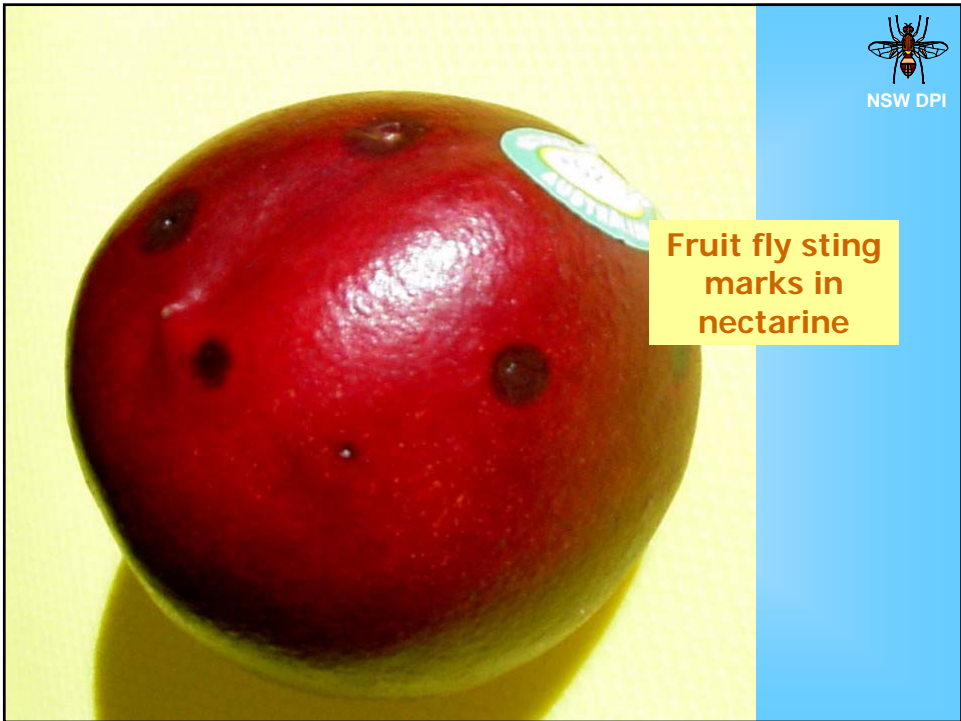
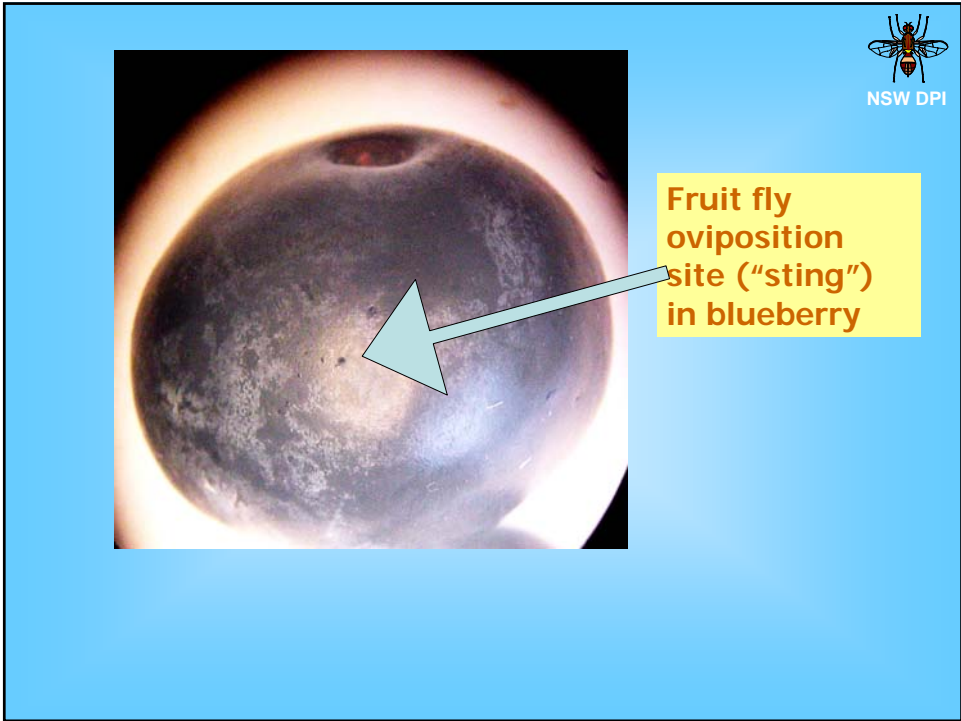
**Female Queensland fruit fly  
laying eggs into a fig**



NSW DPI

**Female Queensland fruit  
fly's ovipositor**









NSW DPI



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





NSW DPI

Peach damaged by Queensland fruit fly



NSW DPI

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

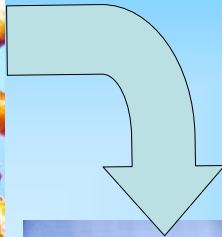


NSW DPI

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



NSW DPI



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
-