Strategies to develop effective, innovative and practical approaches to protect major European fruit crops from pests and pathogens

Neil Audsley

- DROPSA is a 4-year project involving 26 partners
  - Europe, Asia, New Zealand and North America

- It has focused on the fruit fly, ***Drosophila suzukii***, and the bacterial pathogens ***Pseudomonas syringae*** **pv.** ***actinidiae*** **(Psa),** ***Xanthomonas fragariae*** **(Xf)** and ***X. arboricola*** **pv.** ***pruni*** **(Xap) .**

Drosophila suzukii

Rationale

- *Drosophila suzukii* and bacterial pathogens (Psa, Xf and Xap) are a **major concern and challenge** to fruit production and cause significant losses.
- Since there introduction ***D. suzukii*** **and bacterial pathogens have continued to spread in Europe unabated**, so there is a pressing need for effective, innovative and practical control solutions.
- **Eradication or containment is no longer possible**, hence the development of targeted integrated pest management is vital to minimise their economic impact on European fruit producers.
- The invasion of, and damage by new exotic pests and pathogens, is likely to increase with intensification of trade and **climate change**.
- To develop IPM strategies able to guarantee high yields, high fruit quality and fruits free of pest, diseases and pesticides.

What we hoped to achieve

The principal objective

To develop reliable, robust and cost-effective approaches to protect the major European fruit crops from *D. suzukii* and bacterial pathogens

Advances made by the DROPSA project

- Extensive evaluation of the biology of *D. suzukii* and pathogens
- Effective and innovative solutions for their control
- Practical and integrated pest management solutions for fruit crops based on economic sustainability
- Strategies/recommendations for preventative strategies against the introduction of other dangerous fruit pests/pathogens into the EU
- The potential transfer of technology and control strategies to other pests and diseases

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Welcome to Dropsa

Fruit crops account for 17% of the value of the EU's agricultural production and the fruit and vegetables supply chain has an estimated turnover of more than €120 billion with over 550,000 employees and around 1.4 million growers.
It is estimated that insect pests destroy approximately 14% of all potential food production globally. Therefore it is reasonable to estimate that fruit losses from pests and pathogens accounts for over €10 billion in revenue and 3 million tonnes of produce to the EU fruit industry.

New pests and pathogens

New and emerging pests (Drosophila suzukii), and quarantine pathogens such as Pseudomonas syringae pv. actinidiae, Xanthomonas fragariae and Xanthomonas arboricola pv. pruni have been identified as major phytosanitary risks and pose a major challenge to fruit production. Drosophila suzukii infestations have resulted in losses over €8 million in fruit crops in Northern Italy in 2010 and 2011 and more than €1.5 million for French strawberries in 2011. Further revenue losses of over €40 million have also been reported for Pseudomonas syringae damage to kiwifruit in Italy.
These pests and diseases are also a major concern in counties outside Europe. In the Pacific fruit growing regions of the USA, the estimated damage due to Drosophila suzukii has been over €400 million/year. In New Zealand Pseudomonas syringae is expected to cost the kiwifruit industry over €250 million over the next 5 years.

- >50 peered-reviewed scientific publications
- >40 publications in grower's magazines
- >60 presentations at International conferences
- >100 stakeholder meetings/workshops

dropsa@fera.co.uk

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DROPSA partners