

SASA



Detection of *Candidatus* *Liberibacter solanacearum* and survey for carrot psyllids

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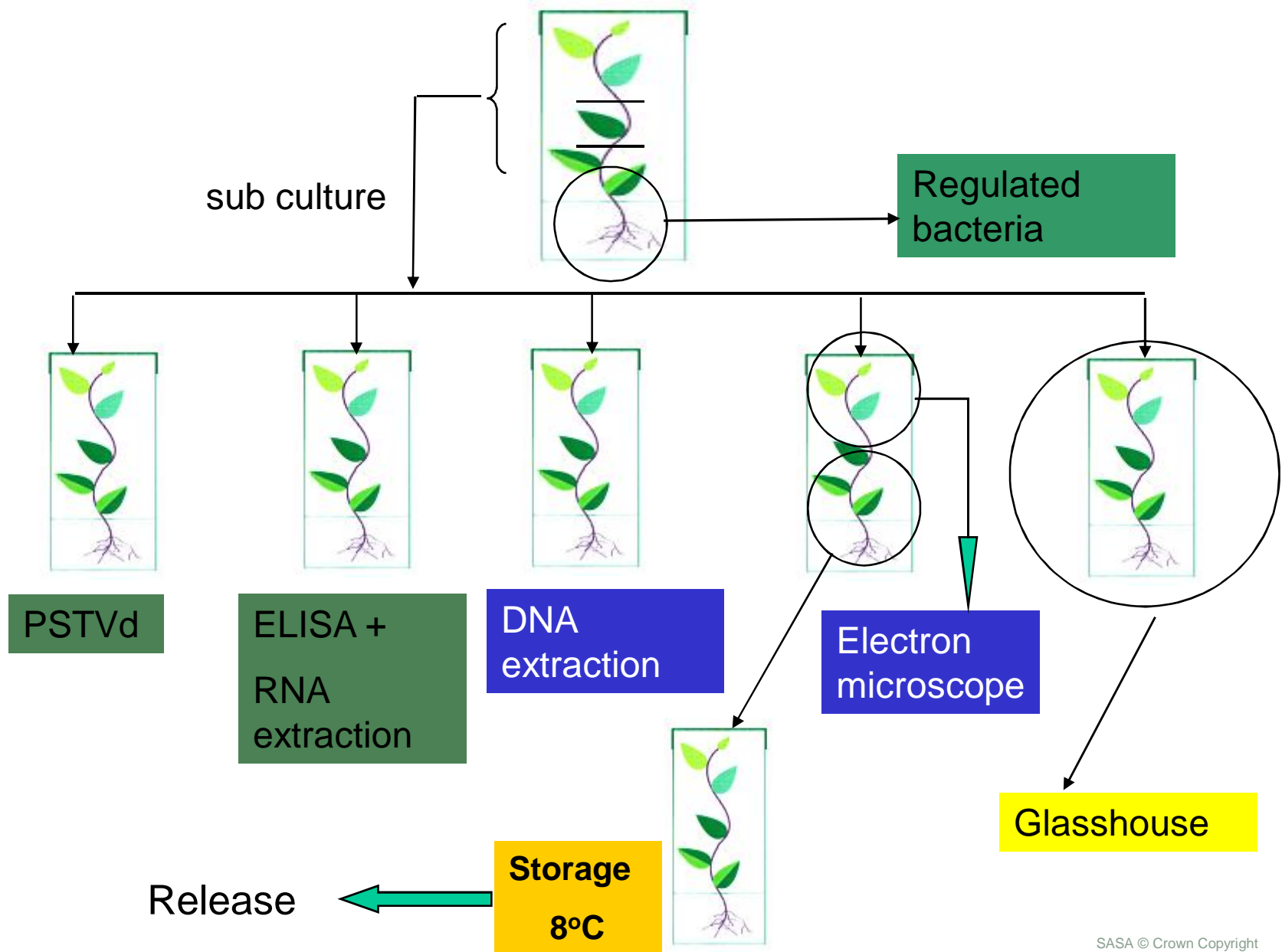


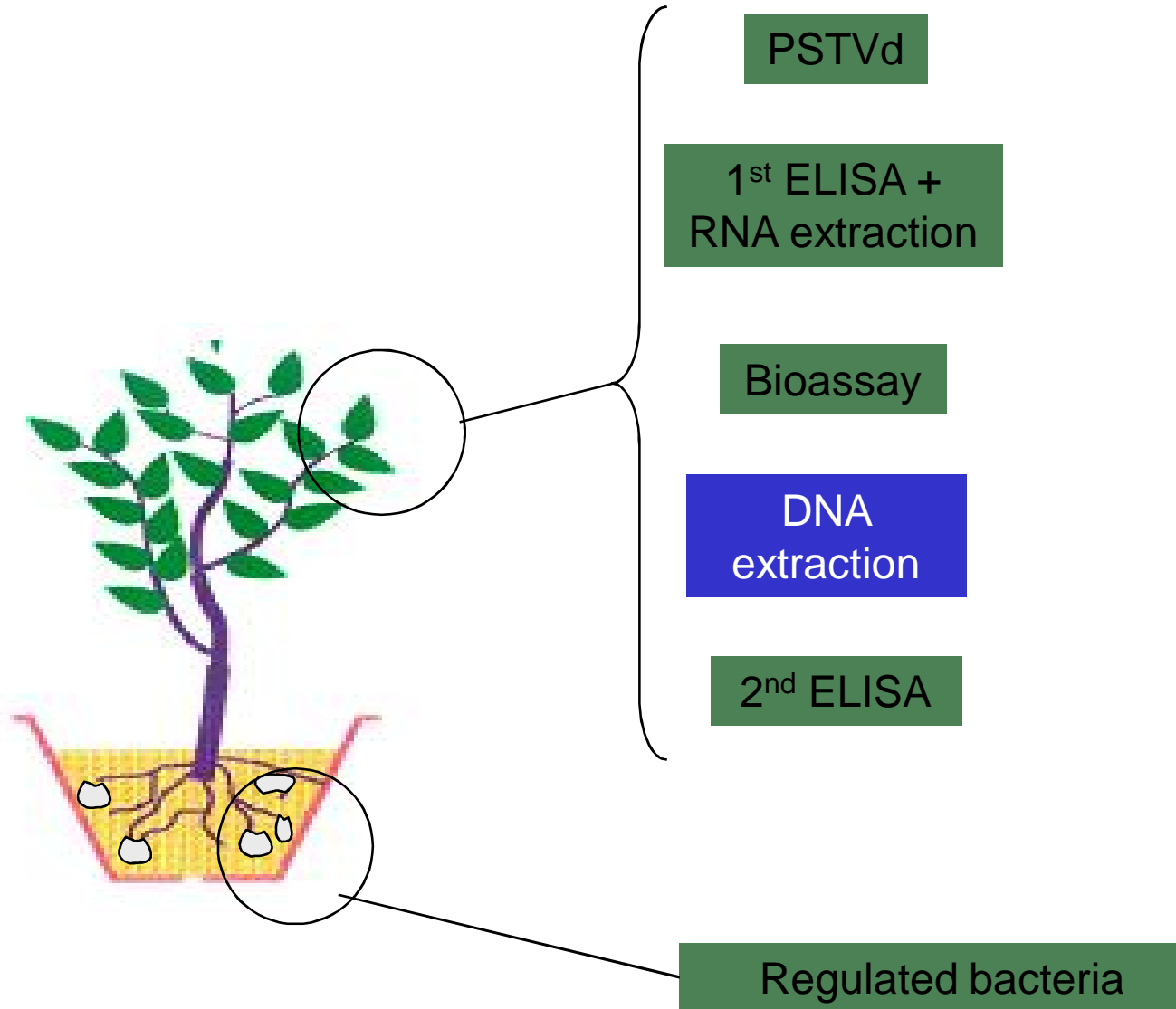
Testing for Lso in post-entry potato quarantine since 2010

2010-2012 Primers of Liefiting (New Zealand)

2012 - Primers of Lie et al (2009)

More sensitive as it is based on the 16S rRNA gene (3 copies) rather than the single copy ribosomal protein gene that the Liefiting assay was designed to



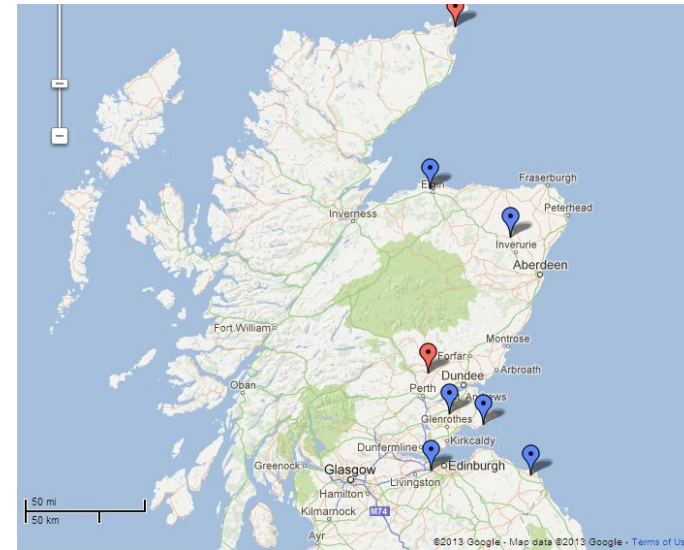


IVIA-Performance test: detection of Lso by real-time PCR using the CaLsoI/100 kit of Plant Print Diagnostics

| Sample no. | Expected result | IVIA Performance study | SASA primers (Li et al 2009) |
|------------|-----------------|------------------------|------------------------------|
| 1 | Positive | Positive | Positive |
| 2 | Negative | Negative | Negative |
| 3 | Negative | Negative | Negative |
| 4 | Positive | Positive | Negative |
| 5 | Positive | Positive | Negative |
| 6 | Negative | Negative | Negative |
| 7 | Positive | Positive | Positive |
| 8 | Negative | Negative | Negative |
| 9 | Positive | Positive | Positive |
| 10 | Negative | Negative | Negative |

2012 Scottish survey for carrot psyllids and symptoms of Lso

- 2500 Ha carrot crops grown in 2011 for human consumption (Scottish Agricultural census data)
- 203 Ha parsnips grown
- Small amount of celery grown (no record in 2011 survey)
- Cow parsley and other weeds from carrot family (Apiceae) common in Scotland
- 8 farmers asked to participate in surveillance (kit sent out)
- 6 participated fully (weekly catches received)

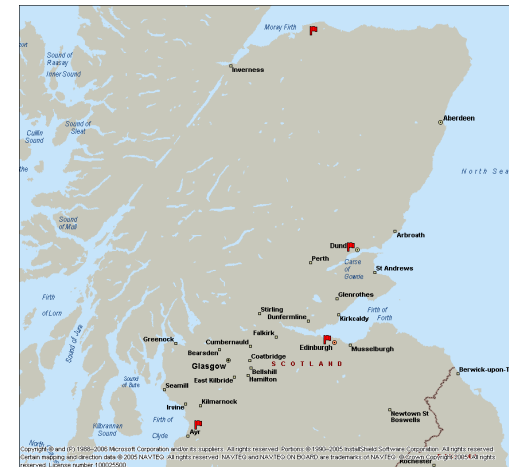


2012 Scottish survey for carrot psyllids and symptoms of Lso

- Scottish growers identified using RESAS Agricultural census data – May 2012
- Growers contacted and willing participants identified – June 2012
- Information on Liberibacter symptoms and psyllid trapping kits sent to participants – June 2012
- Trapping commenced July 2012; completed upon harvest Oct 2012
- NO CARROT PSYLLIDS FOUND IN YELLOW WATER TRAPS DURING 2012
- NO SYMPTOMS OF LIBERIBACTER IDENTIFIED DURING 2012

Other Scottish material available

- SASA operates 4 12.2m high insect suction traps in Scotland
- Trapping occurs all year round
- Historical catches are available from 1980
- Psyllids, including *Trioza spp.* identified within Scottish suction trap samples for 2012
- Samples collected and briefly looked at, but identification work not yet started



Diagnostic training – Montpellier 1-5 Oct 2012

- COST action 0807 – Psyllids and Phytoplasmas
- Training on molecular tools and taxonomy for the identification of Psyllids
- Opportunity to learn taxonomy and molecular techniques from experts in this field
- Opportunity to develop a network of contacts for collaborative/comparative work



2012 survey for psyllids conducted by Fera

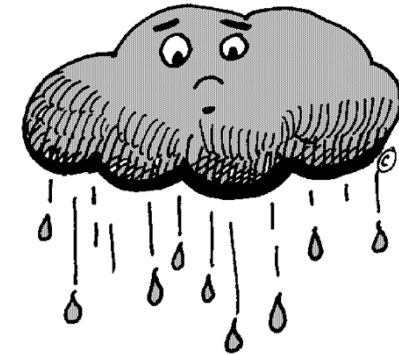
Carrot fields

289

Potato and salad fields

1114

42 samples
contained 53
psyllids



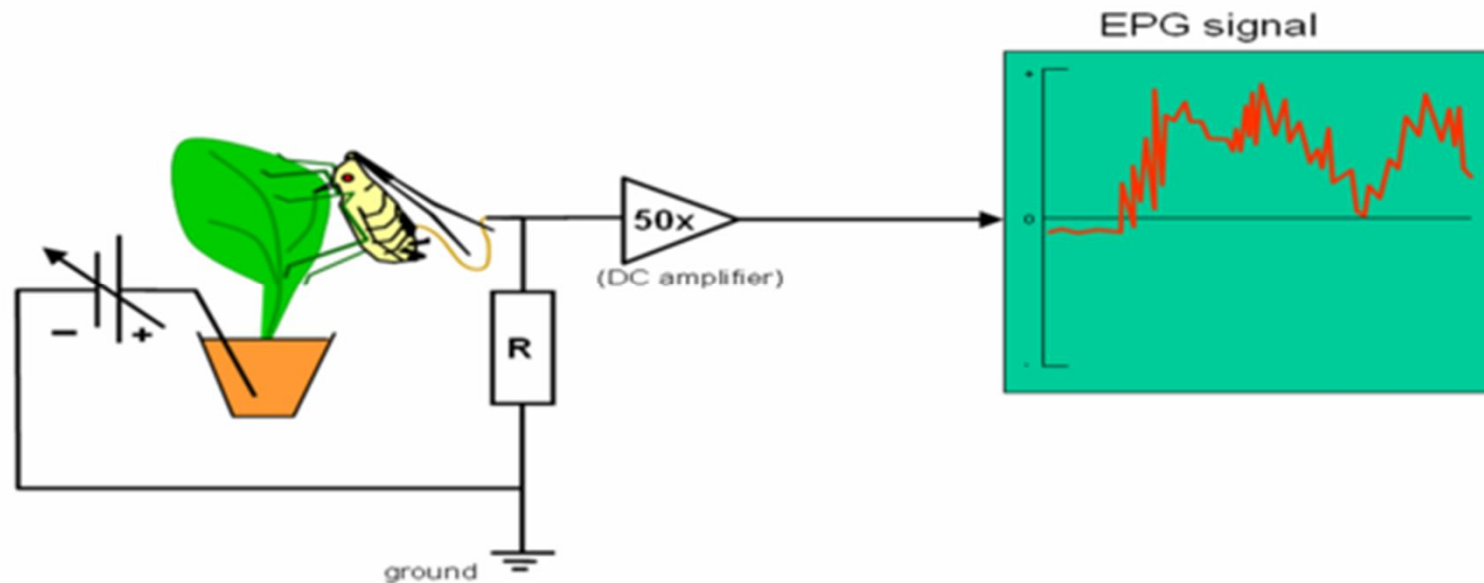
Number of samples



Some were Triozidae
but none were
Trioza apicalis

Evaluation of feeding behaviour of *Trioza apicalis* (male, female and nymphs) on carrot and potato (from April 2013)

The electrical penetration graph (EPG) technique



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