Assessing new spray technology in Horticulture and Pest Management

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New spray delivery technology:
1999 Experiences in Horticulture and Pest Management

MSU (Van Ee) experimental sprayer
- Tower design
- Controlled droplet size
- Low volume
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San Jose scale test

- Replicated small plots
- Treatments: Oil, Oil+Lorsban
- Pre-treatment: live scale on twigs (date)
- Post-treatment: live scale on twigs (date)
- Application methods:
  - AIR BLAST (400 gpa)
  - Tower sprayer (40 gpa)
New spray delivery technology:
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Leafroller Bioassay Study

- Replicated single trees (3)
- Treatments: Success, Dipel, Confirm
- Application methods:
  - AIR BLAST (300 gpa)
  - Curtec (30 gpa)
- Sprays applied with target cards in place
- Cards collected after application to determine distribution (copper) and droplet size
- Leaves collected at intervals following spray to determine residual activity
Number represents relative deposition of active ingredient.
Field-aged residue bioassay

Leaves collected from orchard at intervals following pesticide application

Place neonate larvae in dish - after 7 days mortality is recorded
Leaves collected from three locations in the tree for field-aged residue bioassay.
Field-aged Bioassay
Samples from high in the tree

Success

Dipel

Confirm

CURTEC
REAR'S
New spray delivery technology:
1999 Experiences in Horticulture

- Applied Apogee® on apple and pear using technology to direct product to the target
- Applied Surround particle film in apple
- Applied plant growth regulators to apple
Objectives:

- Build experimental tower sprayer with maximum flexibility to evaluate different delivery systems
- Efficacy of insecticides, fungicides, horticultural sprays using different spray delivery technology
- Examine the potential to reduce water as a carrier for pesticides in the dry conditions of the west
- Evaluate the tower sprayer concept for selective delivery of pesticides to desired targets