Introduction

- Vine Mealybug, Planococcus ficus
- Longtail Mealybug, Pseudococcus longispinus
- Spherical Mealybug, Nipaecoccus viridis

Damage Symptoms

- Direct damage to foliage and berries
- Honey dew → Sooty Mould
- Attracts ants and others

Scouting

- Visual scouting – identify infested vines
- Yellow delta traps – Grapevine mealybug
- Economic threshold, crawler movement

Control Strategy

1. Mealybug Biology – Dr Jeanne de Waal
2. Mealybug Control – Liaan Janse Van Vuuren
3. Application Technology related to Mealybug Control – Kosie Human
Cultural Control Options

- Ant management
- Weed management
- Dust management
- Bark stripping for dormant applications

Biological Control Options

- Coccidoxenoides perminutus
- Cryptolaemus montrouzieri
- Nephus sp.
- Chrysopa sp.
- Anagyrus pseudococci

Photo Credit: Koppert

Microbial Control Options

- Beauvaria sp.
- Metarhizium sp.

Mealybug

“…a crawling problem…”

Current chemical options are limited...

- acetamiprid
- carbaryl
- chlorpyrifos
- clothianidin
- dichlorvos
- dimethoate
- imidacloprid
- lavandulyl senecioate
- methidathion
- mevinphos
- mineral oil
- natural pyrethrum
- non-ionic surfactant + orange oil
- profenofos
- spirotetramat
- sulfadiazine [syn. sextonide]
- thiamethoxam

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Full system approach

Monitoring
- Trap & Vino inspections

Biological
- Beneficial insects and registered biological products

Physical
- Removal of the bark – no place to hide!

Chemical
- Dormant applications
- Spray Season
- Post Harvest

Application factors to consider in table grapes

- **Optimal Droplet Size**
  - Balance of Air Momentum / Spray Speed
  - Litre per hectare applied
  - Final sprayer adjustment
  - Maintenance

Optimal Droplet Size

(Air-assisted spraying)

**Droplets < 150 Micron**
- Droplets penetrate in and behind bunches and back of leaves

**Droplets > 150 Micron**
- Deposit in front of bunch or past the target.

Recommended Droplet Spectrum (VMD)
- High Volume (x): 100 – 175 micron VMD
- Winter sprays: 200 – 250 micron VMD
- Low Volumes (Concentrate): 50 – 175 micron VMD

Balance of Air Momentum / Spray Speed

- Open of target area
- Carry in of droplet spectrum
- Movement of leaves / fruits to increase catching efficiency.

Litre per hectare applied

- **Cima with adjustable fishtails in the higher position.**

<table>
<thead>
<tr>
<th>Litre per hectare applied</th>
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<tr>
<td>2000 L/ha</td>
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<td>4.2 km/h</td>
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## Conclusions

- Numerous mealybug species in commercial table grape orchards
- Monitoring
- Timely execution of necessary control actions
- Integrated approach
- Optimize application technology
- Do more with less