# Management of blueberry rust and other diseases

## HIA: BB13002

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# Overview

- HIA BB13002: Management of blueberry rust
  - Update
- Botryosphaeria stem blight
  - Cause
  - Factors contributing to disease development
  - Management options
- Early detection – for early treatment

# 2015: Efficacy of fungicides against blueberry rust

- Sprayed every 10-14 days from March to June
- Leaf area affected by rust assessed every 14 days

| Active ingredient | Trade name | FRAC | Notes | Rate (/100L) |
|---|---|---|---|---|
| **Azoxystrobin** | Amistar® | 11 | Curative, protectant, systemic, reduces spore prod and germ. | 80 mL |
| **Azoxystrobin + cyproconazole** | Amistar extra® | 11 & 3 | P, C, S, E reduces spore prod and germ. | 65 mL |
| **Dithianon** | Delan® | M9 | Broad spectrum, persistent, prevents spore germ. | 50 g |
| **Fenubuconazole** | Indar® | 3 | C, E, S, reduces spore germ. | 150 mL |
| **Tebuconazole** | Folicur® | 3 | C, E, S | 175 mL |
| **Mancozeb** | Pencozeb® | M3 | P, BS | 200 g |

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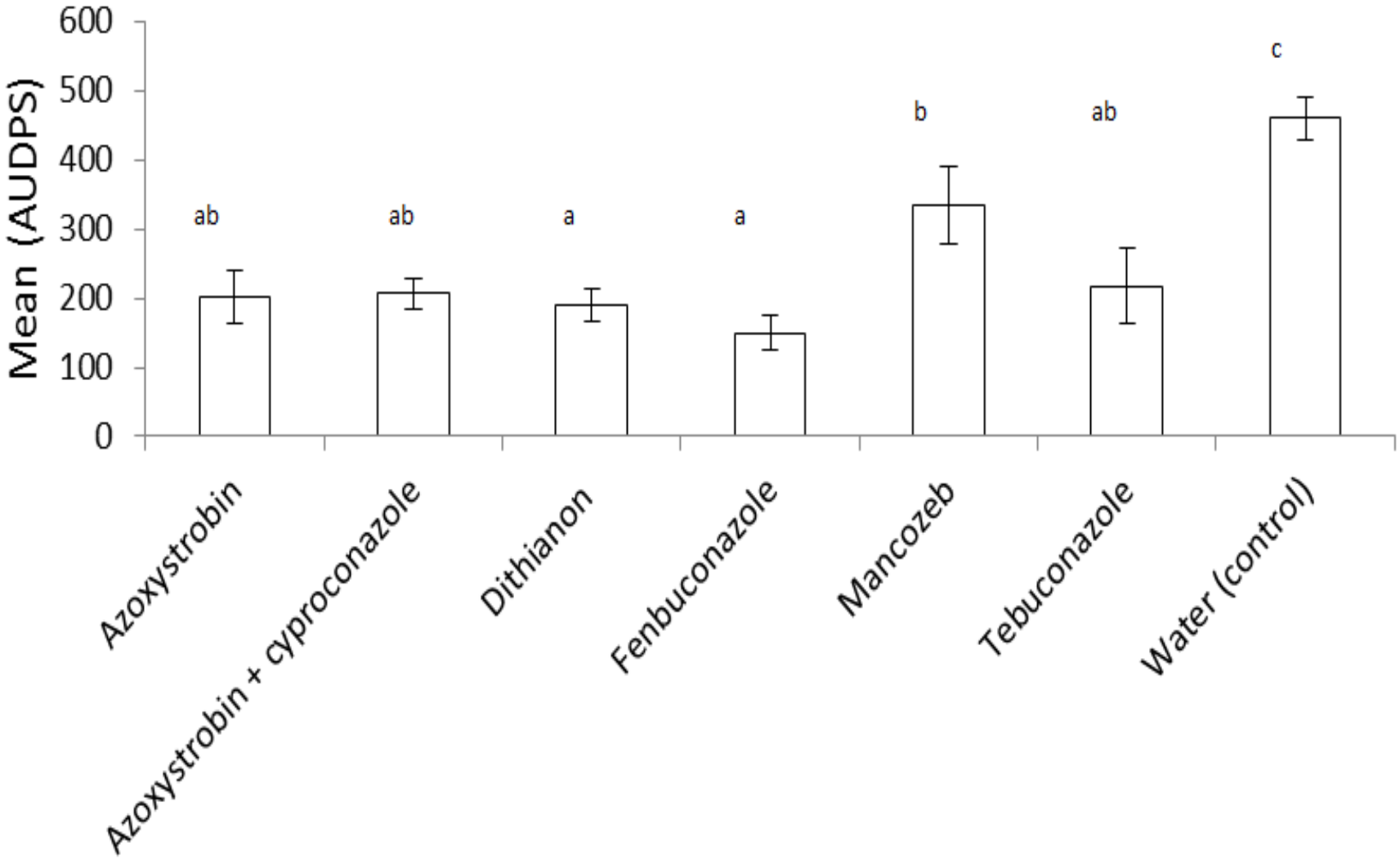
# 2015: Fungicide efficacy results



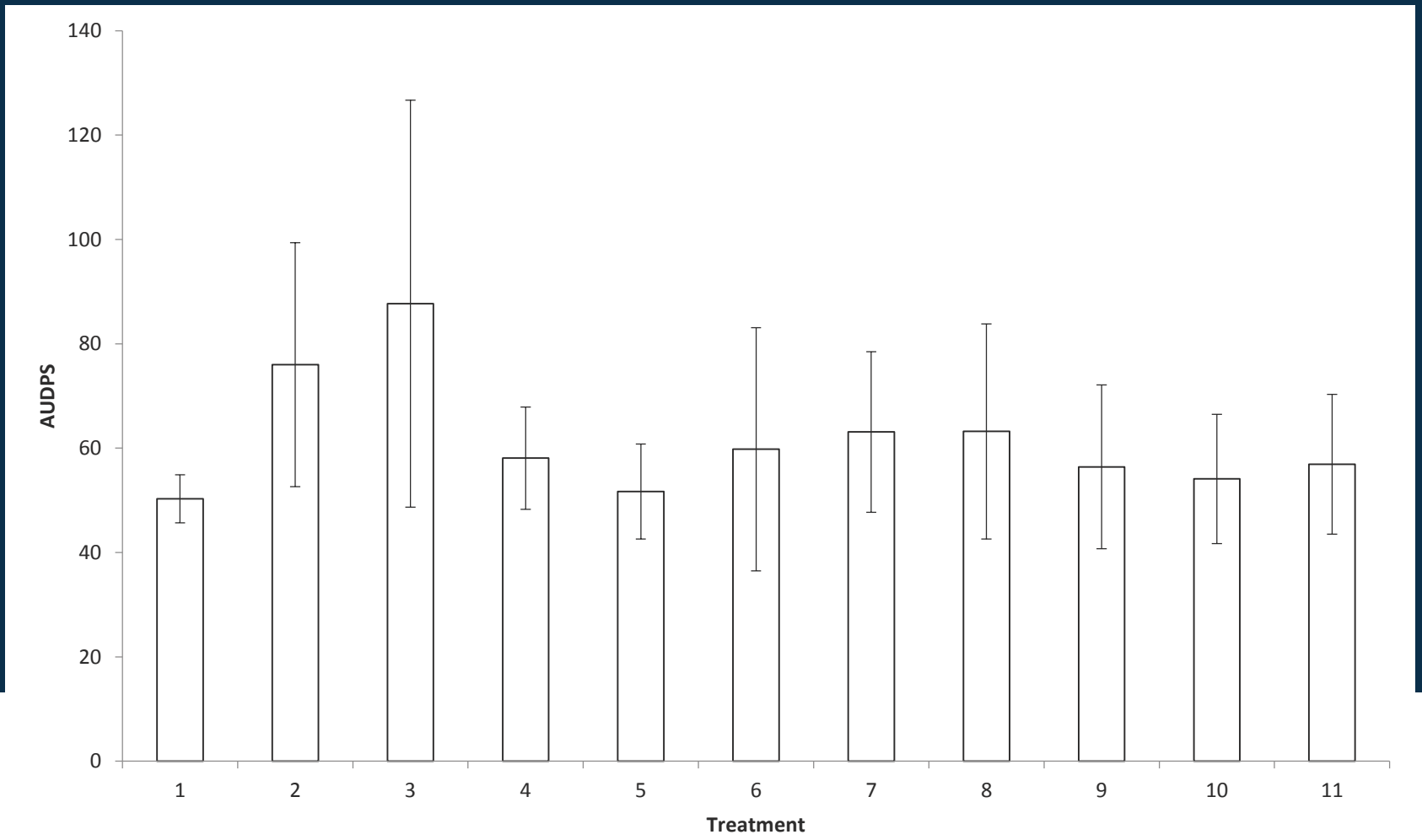
# 2016: Fungicides - apply early?

- Does timing of application affect disease severity?
- Applied after pruning, every 10-14 days

| Treatment | Weeks 0 & 2 (December 2015) | Week 4 (January 2016) | Weeks 6 & 8 |
|---|---|---|---|
| 1 | Chlorothalonil | Pristine | Mancozeb |
| 2 | Chlorothalonil | Fenbuconazole | Mancozeb |
| 3 | Dithianon | Pristine | Mancozeb |
| 4 | Dithianon | Fenbuconazole | Mancozeb |
| 5 | Fenbuconazole | Pristine | Mancozeb |
| 6 | Mancozeb | Chlorothalonil | Pristine |
| 7 | Mancozeb | Chlorothalonil | Fenbuconazole |
| 8 | Mancozeb | Dithianon | Pristine |
| 9 | Mancozeb | Dithianon | Fenbuconazole |
| 10 | Mancozeb | Fenbuconazole | Pristine |
| 11 | Mancozeb | Mancozeb | Mancozeb |

# Fungicide timing summary

- Rust infects the young, soft leaves
- Little rust has developed to date



# 2016: Biological fungicides and defence activators

- Chitosan (Taikang), potassium silicate (AgSil), *Bacillus subtilis*, Aminogro®, copper hydroxide, mancozeb
- Spray every 14 days
- Assessing rust and post-harvest fruit rots
- To date copper and mancozeb are effectively controlling rust
- Harvest in May

# Botryosphaeria stem blight

Flagging: rapid reddening and browning of leaves

Crown cankers

Vascular discolouration

# Botryosphaeria stem blight

- *Neofusicocum parvum*
- Wound pathogen
- Particularly severe on younger plants (<3y)
- Survives on dead or infected stems
- Spores spread by rain and wind
- Spores present all year round, unless very cold
- Most infection occurs in summer
- Stressed plants are more susceptible

# Management of stem blight

- Use disease free plant material
- Resistant or tolerant cultivars
- Avoid damage and wounding
- Avoid pruning during wet weather
- Manage fertilisers – succulent shoots more susceptible
- Prune out infected stems at least 15-20 cm beyond any visible lesion
  - Remove infection from plant
  - Remove inoculum from orchard

# Early diagnosis = early treatment = more effective management

# Other diseases to look out for now

## Botrytis blight and grey mould

Development of fluffy grey growth on flowers is favoured by cool, moist conditions.

Flowers are susceptible as soon as they open. Monitor and treat early, particularly if conditions are favourable for disease.

## Anthracnose

Browing of flowers; spore masses pink-orange in colour. Favoured by warm, wet conditions

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