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Blueberry rust (in NSW)

BB13002: MANAGEMENT OF BLUEBERRY RUST

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Horticulture Innovation Australia

Blueberry rust: know your enemy

- What is blueberry rust?
- Where does it come from?
- Where does it survive?
- Using this information to manage rust
- Hygiene and cultural management
- Fungicides and bio-pesticides

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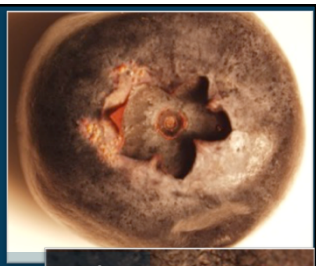
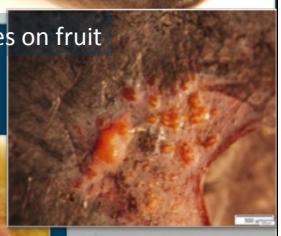
Understanding how and when a disease occurs is central to management

Rust on plant tissues

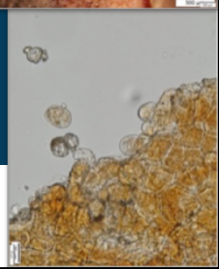
Red-brown lesions on upper leaf surface



Pustules on fruit



Yellow-orange pustules on underside of leaf



Retained leaves are main source of inoculum

Epidemiology

- Blueberry rust spore germination and infection are favoured by:
  - Prolonged leaf moisture
  - Temperatures between 15-25°C
  - Susceptible host tissue

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Rust is in the air

Spores are dispersed through air (and water splash/rain)

Survival

- 25% spores remain viable in leaves after 2 weeks on orchard floor
- Retained leaves are main means of survival in evergreen system

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Cultural practices and hygiene

- Avoidance
  - Clean planting material
  - Site selection and preparation
- Controlling environmental conditions
  - Good drainage, mounding
  - Pruning, ventilation
  - Nutrition
- Tolerant/resistant varieties
- Good orchard hygiene and sanitation

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Management

- Monitor for disease symptoms and conducive weather conditions
  - Assume rust is present
- Protect new shoots
- Select and use fungicides appropriately
- Rotate chemicals

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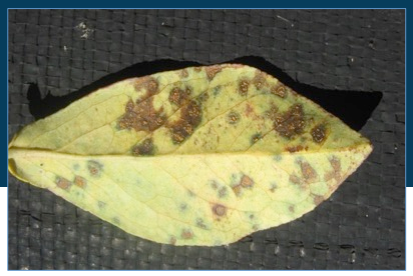
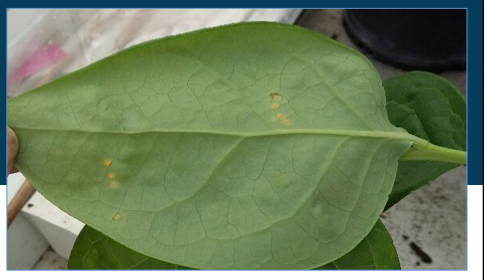
Disease monitoring: early symptoms



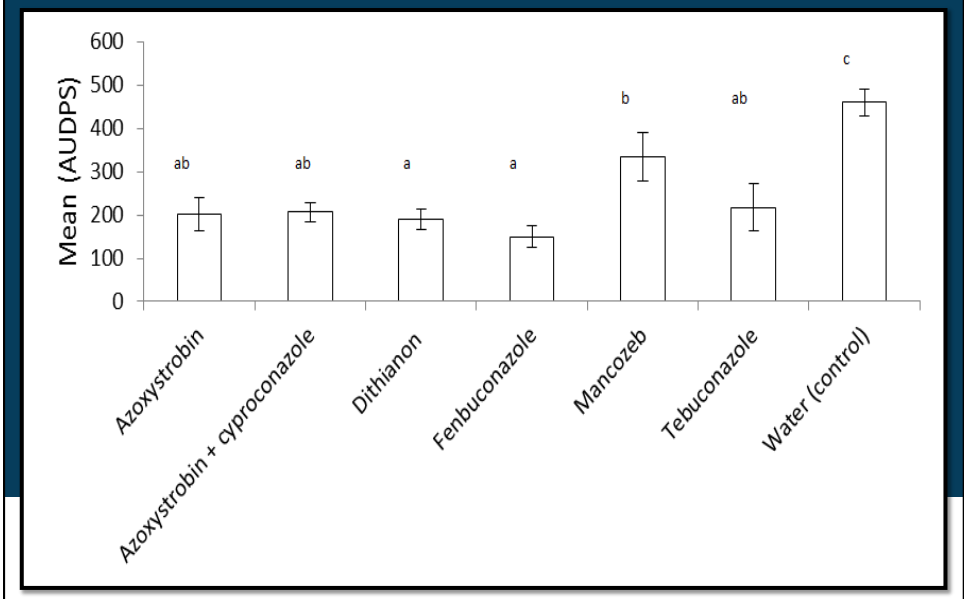



Chemicals (current APVMA permits)

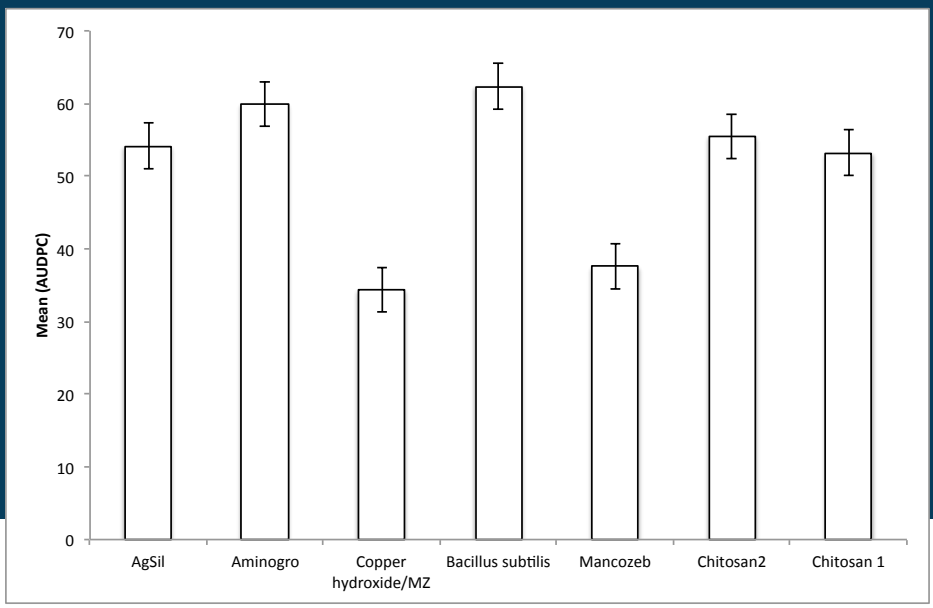
Mode of action	Mode of action	Chemical
Multisite, protectant (FRAC M)	Prevent infection	Mancozeb Chlorothalonil Dithianon* Copper*
QoI (FRAC 11)	Protectant, translaminar, kill germinating spores	Pyraclostrobin (Pristine)
DMI triazoles (FRAC 3)	Translocated upward in plant; may limit pustule development	Propiconazole (Tilt) Tebuconazole*
SDHI (FRAC 7)	Locally systemic; translaminar; Inhibit spore germination, mycelial growth and sporulation	Boscalid (Pristine)

Apply as soon as possible when expecting moist conditions
ROTATE CHEMICAL GROUPS

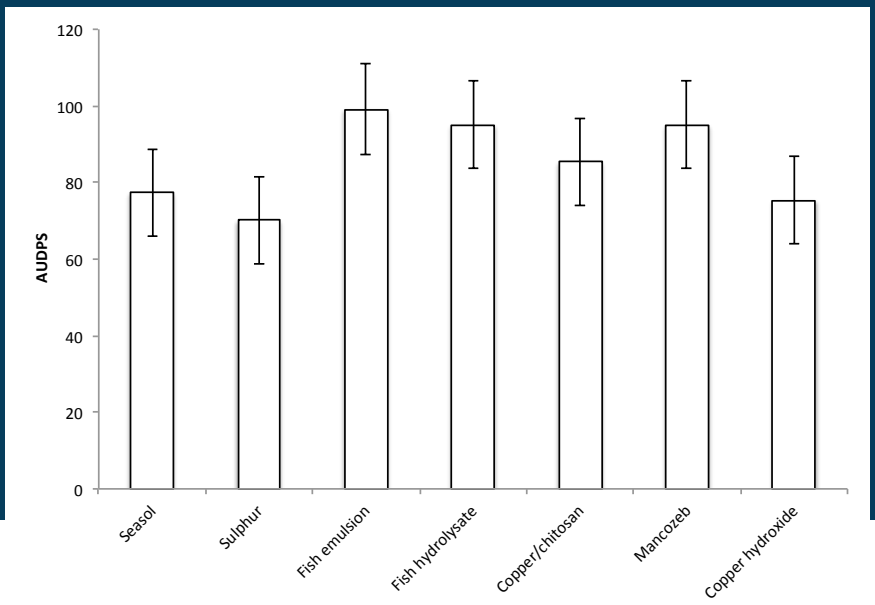
Fungicide efficacy – new permits



Rotate your chemicals



Mixing chemicals and activators



Summary and recommendations

- Rust is anywhere, any time
- Use clean planting material
- Remove infected plant material
- Promote good ventilation
- Monitor to detect symptoms early
- Protect young shoots
- Treat early, when wet
- Select chemical(s) appropriately and rotate
- Breed/select for tolerant or resistant plants
- Nursery certification scheme

Acknowledgements

- Maurizio Rocchetti, Costa Group - Berry Category
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- Australian Blueberry Growers Association
- Horticulture Innovation Australia

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