Evaluation of the plant defence booster, acibenzolar-S-methyl, for use in Australian agriculture

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Global Position
Priority Crops

- Banana
- Tomato
- Tobacco
Other Crops Include

• Leafy Vegetables
• Mango
• Chilli
• Melons
• Potato
Australian Work
Priority Crops

- Tomato
- Lettuce
- Cucumbers
Additional Crops

- Roses
- Spring Onions
- Grapes
- Strawberries
- Melons
Trial Locations

Tropical to cool temperate

Mareeba (17°S)
Brisbane (27°S)
Kerang (36°S)
Devonport (41°S)
Hobart (43°S)
Pathogens - fungal

- *Pseudoperonospora cubensis* (downy mildew)
- *Sphaerotheca fuliginea* (cucumber powdery mildew)
- *Stemphylium solani* (tomato grey leaf mould)
- *Marsssonia rosae* (rose black spot)
Powdery Mildew in Cucumbers

Disease Index

- Control
- ASM 5 g + mancozeb
- ASM 2.5 g + mancozeb
- ASM 1.25 g + mancozeb
- ASM 5 g
- ASM 2.5 g
- mancozeb
Pathogens - bacterial

• *Xanthomonas campestris pv. vesicatoria* (bacterial spot)
• *Acidovorax avenae subsp. citrulli* (bacterial blotch)
### Bacterial Spot in Tomatoes

The chart below illustrates the percentage of leaflets infected with bacterial spot in tomatoes under various treatments.

- **CuOH 1100 g**: bc
- **ASM 50 g + CuOH**: c
- **ASM 25 g + CuOH**: c
- **ASM 12.5 g + CuOH**: c
- **ASM 50 g**: c
- **ASM 25 g**: bc
- **Control**: a

The bars represent the percentage of leaflets infected, with 'bc' indicating the highest level of infection, followed by 'c', and 'a' indicating the lowest level of infection.

### % Leaflets Infected

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Leaflets Infected</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuOH 1100 g</td>
<td>bc</td>
</tr>
<tr>
<td>ASM 50 g + CuOH</td>
<td>c</td>
</tr>
<tr>
<td>ASM 25 g + CuOH</td>
<td>c</td>
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<td>c</td>
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<td>c</td>
</tr>
<tr>
<td>ASM 25 g</td>
<td>bc</td>
</tr>
<tr>
<td>Control</td>
<td>a</td>
</tr>
</tbody>
</table>
Bacterial Blotch in Watermelons

Severity Rating

- Control
- CuOH 120 g
- ASM .01 g
- ASM .1 g
- ASM .5 g
- ASM 1 g
- ASM 2.5 g
- ASM 5 g
- ASM 10 g

Severity Rating:
- 0
- 0.5
- 1
- 1.5
- 2
- 2.5
- 3

Letters indicate significant differences in severity among treatments.
In Summary

• Acibenzolar-S-methyl provides control of various fungal and bacterial pathogens
• The product is registered in a number of countries under the trade name Bion
• With manufacturer support the product should be registered for use in Australia
Thank you

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