

# Product testing report

21 December 2011

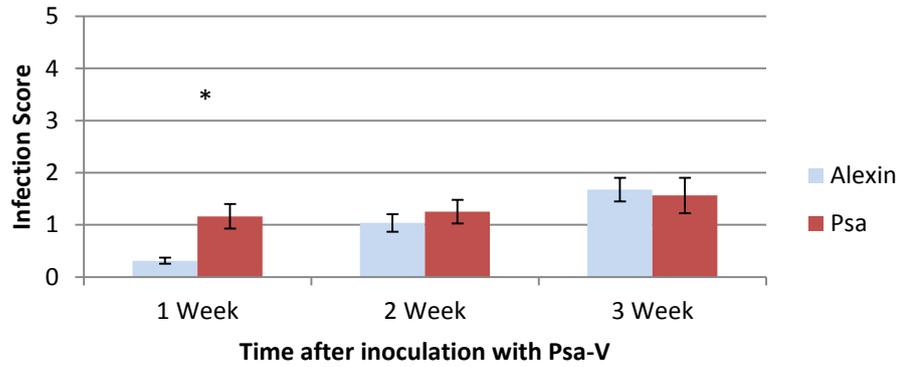
Alexin		
Supplying company:	Hortigro	
Active ingredient:	Salicylate derivatives	
Mode of action:	Protectant <input type="checkbox"/>	Biological <input type="checkbox"/> Elicitor <input checked="" type="checkbox"/>
Application rate:	500ml/100L	

Test results	
Test	Greenhouse seedling tests
Method description	<p><b>Experiment 1: Elicitors (4 August 2011 – 8 September 2011)</b> Hort16A seedlings were treated once with the product 7 days prior to inoculation with Psa-V (at <math>10^9</math> cfu ml<sup>-1</sup> concentration). Assessments were then made at 1 week intervals after this inoculation. The degree of leaf spotting was determined visually using a 0 – 5 scale and is plotted as an 'Infection Score'.</p> <p><b>Experiment 2: Elicitors (30 August 2011 – 30 September 2011)</b> Hort16A, Hayward and Bruno seedlings were treated once with the product 10 days prior to inoculation with Psa-V (at <math>10^9</math> cfu ml<sup>-1</sup> concentration). Assessments were then made at 1 week intervals after this inoculation. The degree of leaf spotting was determined visually using a 0 – 5 scale and is plotted as an 'Infection Score'.</p> <p><b>Experiment 3: Elicitors (31 October 2011 – 9 December 2011)</b> Repeat applications of Alexin at 5ml L<sup>-1</sup> were tested in Hort16A and Bruno seedlings at the manufacturer's recommendation. The product was applied 17 and 3 days prior to inoculation and 11 and 25 days after inoculation with Psa-V (at <math>10^9</math> cfu ml<sup>-1</sup> concentration). Assessments were then made at 1 week intervals after this inoculation. The degree of leaf spotting was determined visually using a 0 – 5 scale and is plotted as an 'Infection Score'.</p>
Results	<p><b>Experiment 1: Elicitor</b> In Hort16A, Alexin significantly reduced leaf spotting one week after inoculation. However, at the two and three week assessments, leaf spotting was not significantly different to that of the control (Psa-V applied with no control agent). This may be a result of insufficient active ingredient. Multiple applications over time may have been more effective in reducing leaf spotting.</p> <p><b>Experiment 2: Elicitor</b> Alexin significantly increased leaf spotting in Hort16A at all assessment timings (noting that the first assessment was 17 days after product application).</p> <p>In Hayward, Alexin significantly reduced leaf spotting at the one and three week after inoculation assessment timings. Leaf spotting was also significantly reduced in Bruno at the two and three week after inoculation assessments.</p>

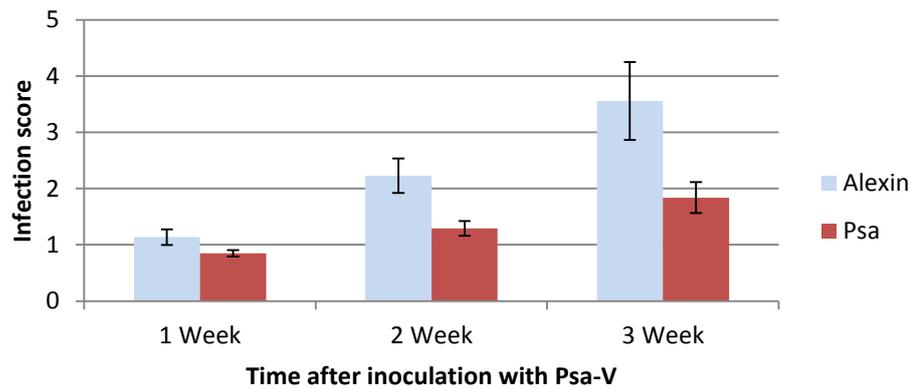
### Experiment 3: Elicitor

Alexin significantly increased leaf spotting in Hort16A seedlings at all assessment timings. In Bruno seedlings, Alexin significantly reduced leaf spotting at the two and three week after inoculation assessment timings.

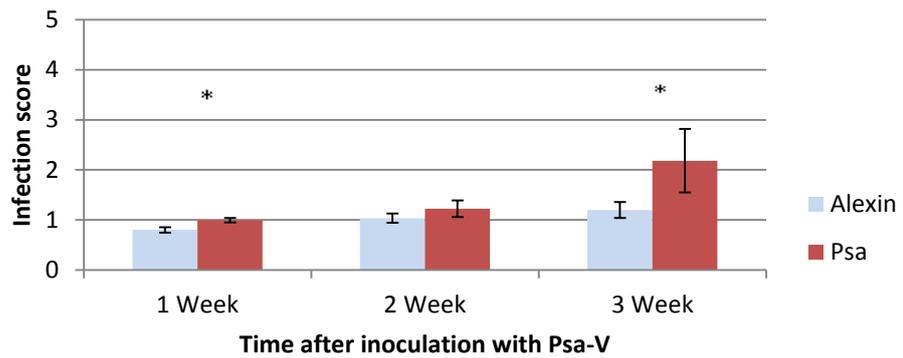
## Hort16A Experiment 1



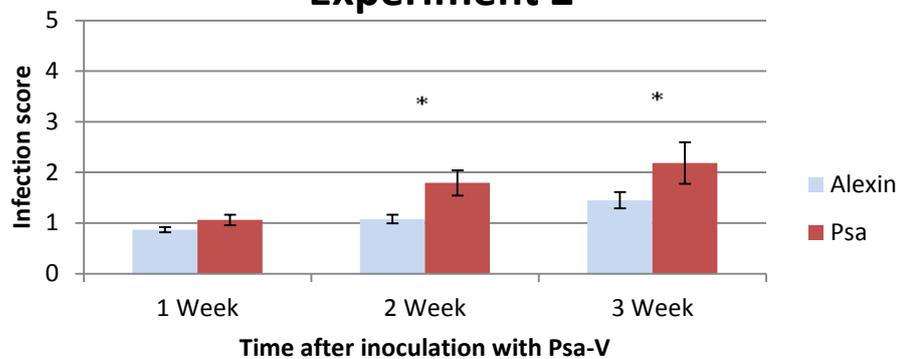
## Hort16A Experiment 2



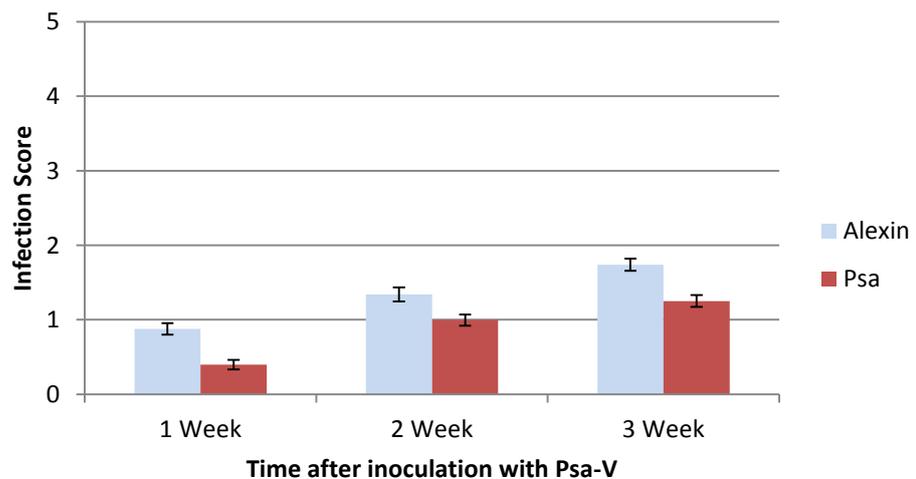
## Hayward Experiment 2



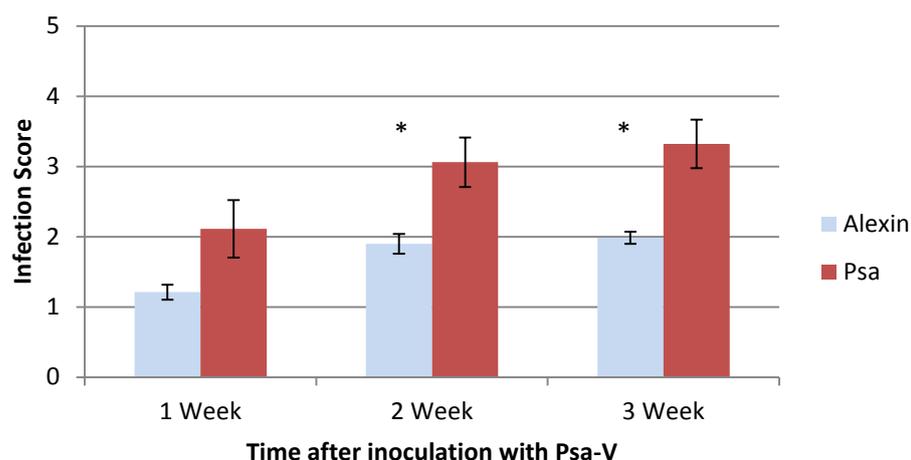
## Bruno Experiment 2



## Hort16A Experiment 3



## Bruno Experiment 3



\* Psa inoculated control and Alexin statistically significantly different at the 5% level

### Summary

A single application of Alexin (5ml L<sup>-1</sup>) to Hayward and Bruno seedlings, with inoculation with Psa-V 7 – 10 days later resulted in significantly reduced leaf spotting 3 weeks after that inoculation with Psa-V. Under the same test methodology, for Hort16A seedlings, Alexin either had no effect on leaf spotting or significantly increased leaf spotting 3 weeks after Psa-V inoculation.

A third experiment was conducted to test the efficacy of repeat product application, following manufacturer's recommendations. The results of this experiment follow the same trend of previous experiments; with leaf spotting reduced significantly in Bruno seedlings and increased significantly in Hort16A seedlings.

### Comments

A standardised screening protocol has been used to test products for efficacy against Psa-V to enable a high throughput of products. Protectant tests involve the product being applied to the plant with inoculation following on the same day (note that Alexin has not been tested as a Protectant). Elicitation tests involve the product being applied to the plants 7 – 10 days prior to Psa-V inoculation, with assessment at weekly intervals after inoculation. This method has largely involved testing products using information provided on the product's label. In the future, products may be retested using protocols provided by supplying companies. Products which have previously shown some level of efficacy will be given priority for re-testing.

Data are presented for all assessment timings; however, evaluation of results is largely focused on the final '3 week' assessment data. Disease symptoms will be better developed by this time and earlier assessments are considered to be less reliable. However, in some cases, it is possible that the elicitation effect has been expended and that poor results at the '3-week' assessment time indicate reduced efficacy as a result of insufficient frequency of application.

Results from greenhouse trials primarily serve as a screening tool to determine products that will progress to field trials. Care should be taken when extrapolating results to field conditions. Results in the field may differ due to different environmental conditions and differences in plant material.

**Note – leaf spotting may not necessarily mean the plant is infected. It simply indicates that the plant has been challenged by Psa.**

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