

Expanding crop protection options for controlling blueberry rust – project update

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NSW Department of Primary Industries is currently performing a field trial to evaluate a range of organic crop protectants to control blueberry rust disease (caused by *Thekopsora minima*). The products were chosen through a review of published studies and reports on all organic crop protection options for rust diseases. They were then narrowed down through trials conducted under controlled environmental conditions by Staphyt Ltd in Queensland.



Field trial in progress. Photo credit: Melinda Simpson

Trials will be assessed on the efficacy of disease control by recording disease symptom development at regular intervals. As all control options are protectants, the disease severity will be assessed on leaves in the upper (new growth) part of the canopy every 14 days.

Severity assessments will be made using a diagrammatic scale based on the percentage of leaf area affected by rust pustules. Assessments will be made on 20 leaves from three plants between the two buffer plants in each treatment.

The key project output will be a minor use permit for the product that demonstrates effective control of rust in blueberries and is safe to the crop.

This will provide growers with additional options to reduce biosecurity risk and maintain crop productivity and market access.

This project is funded via the Tasmanian Government through the Agricultural Innovation Fund and is being led by the Tasmanian Institute of Agriculture.



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Table 1. The treatments and rates being used in the trial

The field trial is being conducted on a commercial blueberry operation on the NSW north coast with the 11-11 variety. The trial will involve fortnightly sprays for 3 months. Disease assessments and rankings will then be performed under conditions of natural infection. The treatments to be included in the trial are listed in Table 1.

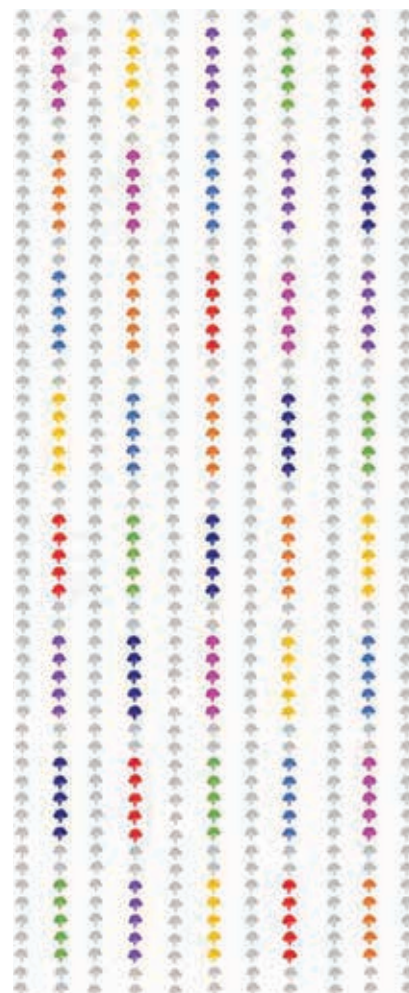
Active ingredient	Trade name	FRAC Code	Formulation	Rate of application (g/100L)
Mancozeb	Mancozeb DF 750	M3	Water dispersable granule	200 g/100 L
Copper present as hydroxide	Blue Shield® DF 500g/kg	M2	Water dispersable granule	105 g/100L
<i>Bacillus amyloliquifaciens</i> strain QST 713	Serenade® Opti	BM02	Wettable powder	250g/100L
NUL3446	Yet to be released	—	Water dispersable granule	40g/100L
Potassium bicarbonate & potassium silicate	Ecocarb™ Plus 945 SP +	M2	Powder	400g/100L
Emulsifiable Botanical Oil	Synetrol® Horti Oil 850EC		Liquid	250ml/100L
Crustacean & wild fish wastes fortified with trace minerals & vitamins	Aminogro™ + Synetrol® Horti Oil 850EC	NA	Liquid	1L/100L
Emulsifiable Botanical Oil			Liquid	250ml/100L
Electrolyzed oxidised water	Anolyte	NA	Liquid	20L/100L
Emulsifiable Botanical Oils	Eco-oil® 850 SL	NA	Liquid	250ml or 500ml/100L

Figure 2 and 3. The field layout and key for the trial

The experimental area will consist of 5 contiguous bush plots within a row. The middle three bushes will be monitored while the outer bushes act as buffers so that plots will have a 2-bush internal buffer. Plots will be located in alternate rows to create a one-row buffer between them. The experimental area will be 5 rows each containing 8 plots to minimise the average distance between plots (Figure 2 and Figure 3).



Figure 2. Field trial plants. Photo credit: Melinda Simpson



-  Copper hydroxide
-  NUL3446
-  Mancozeb
-  Ecocarb plus
-  Serenade Opti
-  Anolyte
-  Aminogro
-  Eco-oil
-  Buffer plant

Figure 3. Field layout & key for the trial.