

# Project Update: Expanding crop protectants for blueberry rust

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The Tasmanian Institute of Agriculture (TIA) funded via the Tasmanian Government through the “Agricultural Innovation Fund” has received funding to evaluate a range of crop protectants to provide control of blueberry rust disease (caused by *Thekopsora minima*).

The project specifically addresses issues of current concern for the Blueberry organic sector, but findings will also be relevant to conventional growers and blueberry growers in all states of Australia. The key project output will be a Minor Use Permit for a product which has been demonstrated as effective to control the rust and is safe to the crop. This will provide growers with additional options to reduce biosecurity risk and maintain both crop productivity and market access.

## Progress to date

A thorough review has been conducted on all conventional and organic crop protection options for rust diseases. The review covered published studies and reports which included credible scientific data. From this review, a number of products were identified and can be seen in Table 1. This is a list of possible products and is not the final approved list of products that will be tested.

**Table 1. List of products identified as potential crop protection options for blueberry rust**

PRODUCT	DETAILS
<b>Ecocarb® plus</b>	Potassium bicarbonate + potassium silicate
<b>NUL3446</b>	Unnamed Nufarm product (biologically derived)
<b>Serenade® Opti</b>	Bacillus amyloliquefaciens
<b>Electrolysed oxidised water</b>	Electrolysed oxidised water
<b>Aminogro®</b>	Chitosan
<b>Aminogro® and salicylic acid</b>	Chitosan + salicylic acid
<b>AgSil®</b>	Potassium silicate
<b>Ecocarb®</b>	Potassium bicarbonate
<b>Wettable sulphur</b>	Wettable sulphur
<b>Seasol®</b>	Seaweed extracts



**Blueberry rust on leaves.**

Photo credit: Rosalie Daniel

## Next steps

### Controlled environment trials

Once the list of products to be tested is finalised, pot trials will be conducted by Staphyt (formerly Peracto) under controlled environmental conditions at the Department of Agriculture and Fisheries facility in Queensland.

The first trial will be designed with at least 6 replications and the chosen treatments will be applied fortnightly. Plants will be inoculated with *T. minima* spores at a suitable concentration and coverage to ensure uniform disease development in the control plants. Plants will be assessed for efficacy of disease control by recording disease symptom development to obtain “area under disease progress curves” and rust pustule counts.

The second trial will also include at least 6 replications and will include the controls, an industry standard and 5-6 of the most efficacious alternative products. These will be tested at an increased range of rates (e.g. label rate, 2x label rate, 0.5x label rate, 0.25x label rate) to achieve both efficacy and crop safety information.

## Field trials in NSW

Trials under field conditions will be conducted in NSW by NSW Department of Primary Industries. The trial will consist of 3 months of fortnightly product application and disease assessment under conditions of natural infection. Trials will be assessed for efficacy of disease control by recording disease symptom development at regular intervals.

The products to be tested will be based on findings from the controlled environment trials and will include 5-6 organic products and hopefully a few conventional products as well.

Potential conventional products that may be included can be seen in Table 2.

**Table 2. List of non-organic products that may be included in the trials in NSW**

PRODUCT	DETAILS
<b>Escolta®</b>	Cyproconazole + Trifloxystrobin
<b>Aviator® Xpro®</b>	Prothioconazole + Bixafen
<b>Veritas®</b>	Tebuconazole + Azoxystrobin
<b>Amistar® Xtra</b>	Cyproconazole + Azoxystrobin
<b>Fontelis®</b>	Penthiopyrad



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