

Rubus SARP Overview - Pest & Disease Priorities

Ian Cover, Industry Development Officer, Fruit Growers Tasmania Inc.

In November 2020, representatives from the blackberry and raspberry (Rubus) industries met to discuss the Strategic Agrichemical Review Process (SARP) published by Hort Innovation earlier in August 2020. The purpose of the SARP is to identify the pest and disease priorities, agrichemical usage and current management alternatives for the Australian Rubus industry.

Rubus pests and diseases are prioritised as high, moderate and low based on industry consultation plus desktop audit and review. The SARP ranking also evaluates current fungicides, pesticides, insecticides and herbicides for these priority pests; indicating presently available products and those currently undergoing the registration process by the Australian Pesticides and Veterinary Medicines Authority (APVMA). The purpose of this meeting was to give industry the opportunity to discuss and assess the accuracy of the report. As a result, the information gathered from this meeting will help industry identify any possible gaps that need addressing.

Pest Priorities

Sixty plant pests were identified as significant pests to the Rubus industry; with a total of 42 combined insect, mite and snail species forming the largest component of the list; followed by 13 diseases and five weed species. Plant Growth Regulators were also investigated but will not be the focus of this article.



Botrytis cinerea on raspberries. Photo credit: AHR.

Table 1: shows the High Priority Rubus diseases, pests and weeds identified in the SARP report.

Common name	Scientific name
Diseases	
Grey Mould	<i>Botrytis cinerea</i>
Insect, Mites and Other Pests	
Two Spotted Mite	<i>Tetranychus urticae</i>
Green Stink Bug	<i>Plautia affinis</i>
Green Vegetable Bug	<i>Nezara viridula</i>
Western Flower Thrips	<i>Frankliniella occidentalis</i>
Green Mirid	<i>Creontiades dilutus</i>
Brown Mirid	<i>Creontiades pacificus</i>
Crop Mirid	<i>Sidnia kinbergi</i>
Weeds	
Blackberry Nightshade	<i>Solanum nigrum</i>
Marshmallow	<i>Malva parviflora</i>

Priority Disease Comments

- *Botrytis cinerea* (Grey Mould) is the only high priority disease listed for Rubus and industry representatives agree that sufficient control options are available to deal with this pathogen, but more extension and communication work is required to highlight the importance of proper chemical group rotation.
- Misidentification of pathogens was suggested as an explanation to why there aren't more high priority diseases. For example, *Cladosporium spp.* symptoms being mistaken for Grey Mould.
- Chemical use legislation in Victoria provides growers with flexibility in the use of agrichemicals, including off-label use for products registered for similar uses. All other grower regions must adhere to label and permit requirements.
- Foliar applications to treat Phytophthora Root Rot, given the nature of the disease, are found to be less effective and it would be important to investigate soil fumigants or liquid formulations for application via irrigation. The limited options for control of this disease are a concern from the nursery perspective, specifically the issue of resistance management.
- More alternatives are needed for *Cladosporium spp.* and Downy Mildew control due to older chemistry coming under increasing review pressure. Proposed in-field chemicals for *Cladosporium spp.* are more of an unknown factor and industry has less experience with current post-harvest options.
- Industry representatives request that the efficacy of registered products against the listed diseases is collated and provided back to industry, so that growers are aware of the risk of under-applying and inadvertently selecting for resistance for other low priority diseases (which are currently kept under control with standard Rubus spray programs).

Priority Insect, Mite and Other Pest Comments

In general, the insect pests identified by the report reflect current pest pressures faced by industry. Industry representatives indicate the ranking of some moderate and low priority insect pests should be considered more closely by Hort Innovation.

The suggested changes to the ranking of pests were discussed as follows:

- Mites, although ranked as a high priority are considered to be lower priority than Mirid species.
- Rutherglen Bug and weevil species need to be moved up the list due to difficulty to target adult stages.
- Other species such as earwigs and stink bug are not currently listed but are noted as serious pests in growing regions such as Tasmania.
- Protein bait sprays and trapping is not sufficient for managing Queensland Fruit Fly under high pest pressure.
- Aphids are reported to be more of an issue in blackberries but should be moved up the moderate priority list.
- There are limited options to prevent scale insects and therefore, industry would like this pest to be prioritised higher for new chemical registrations.

Similar to the Rubus diseases, industry representatives requested that efficacy by product and pest would help growers make informed decisions on effective application rates.

A common frustration for growers arises from the fact that some options control the target pest but simultaneously increase the problems with other insect pests: likely due to a knock-on impact on beneficials resulting in an even higher input cost to growers.

Growers are concerned that overreliance on short withholding period products (i.e. 1-day WHP) will cause resistance. However, products with more than 1-day WHP are difficult to manage during harvest resulting in significant fruit waste, leaving growers with no alternatives.

The use of pheromone baits mixed with new contact or ingestive actives would be interesting to investigate for Lepidoptera species. A bait approach also avoids potential residue issues.

Some chemical options are not suitable or registered for protected cropping and growers understand that manufacturers are considering resistance management but would like to ensure regulators understand all the aspects of substrate production and the differentiation to glasshouse production.

Important to note, Fall Armyworm *Spodoptera frugiperda* previously exotic to Australia, has been listed as not technically feasible to eradicate by the Consultative Committee on Emergency Plant Pests due to current incursions across Queensland and New South Wales growing regions. Although the impact of this pest is not fully felt by wider industry, an emergency minor use permit has been issued to help prepare for management. Growers participating in this discussion requested that this pest be considered a high priority.

Priority Weed Comments

The SARP report does not cover substrate in the context of weed management. Where *Rubus* plants are established in substrate the only options for weed management is limited to spot spraying and hand thinning, which is labour intensive and costly for industry.

- More information on product labels with particular emphasis on application methods around the spraying of tunnel structures, leg rows, full rows and tunnel edges would effectively help growers to manage weeds around crops.
- Many of the chemicals listed as control options for moderate weeds were also noted as extremely effective at killing *Rubus* plants. In extension, sucker control is inherently difficult due to the risk of crop damage.
- Glyphosate based products are coming under increasing pressure both internationally and in Australia. Growers need to be proactive, but also supported in looking for solutions if Glyphosate products are banned. Until redundancies are put in place, Hort Innovation and industry need to keep access to Glyphosate products.



Blackberry Nightshade.

Photo credit: Arthur Chapman, CC BY 2.0

What is the important message for growers?

Those participating in the discussion agreed with the completeness of the pest lists identified by the SARP report. According to grower input high priority pests listed in Table 1 potentially do not capture moderate and low ranked pests and more work needs to be done by industry groups to address these gaps. In disease, insect and mite pests; resistance consideration and knock-on effects of broad-spectrum pesticides are the two common reasons that industry representatives agree on why rankings need to change.

Following on, all berry categories are faced with the issue of chemical resistance across each pest category and as a result, growers are eager to request more chemical options. Based on the SARP findings, many of the current control options for the listed pests and diseases had similar chemical groups. This highlights the importance of new permits and registrations, so industry can implement better rotation practices.

On a different note, Integrated Pest Management (IPM) compatibility for proposed control measures was a common discussion point. This is understandable given that many farms invest in and implement beneficial organisms into their respective IPM programs and want to minimise any potential negative impacts on these beneficials.

Forward thinking industry representatives that are using beneficials are being proactive, taking active steps to remove Glyphosate (among other chemicals under review) from their spray programs. In the case of Glyphosate, it is important that these products remain in use for industry as better alternatives are not available.

The *Rubus* industry is in a good position to address these challenges and Berry Industry Development Officers in each berry growing state will play a crucial role in sharing information between industry stakeholders. This will initially be achieved by providing workshops, webinars and factsheets to help support growers with making informed decisions in the use of agrichemicals.

