New Research to Improve the Management of Chilli Thrips in Blueberry and Rubus

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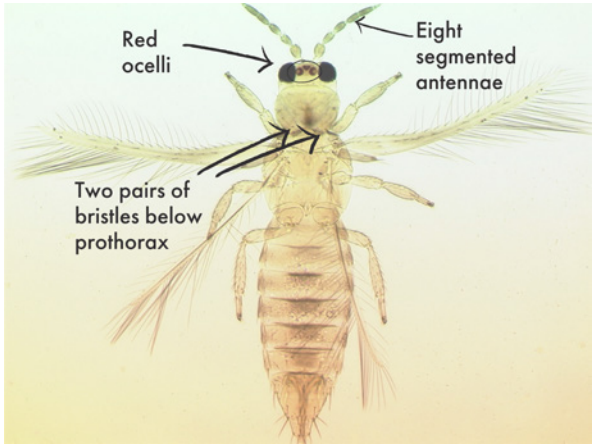
Murdoch University in Western Australia will deliver the recently announced Hort Innovation levy-funded project (MT24009) aimed at improving the management of chilli thrips in blueberry and Rubus.

Chilli thrips (*Scirtothrips dorsalis*), first reported in Western Australia around 20 years ago, are now considered a serious pest in blueberries, Rubus, strawberries and other horticultural crops. These tiny, difficult-to-detect insects can rapidly increase their populations under favourable conditions, making effective management a challenge for growers.

The Murdoch research team, led by entomologists Dr Wei Xu and Dr Shovon Sarkar, will investigate the lifecycle and ecology of chilli thrips in blueberry and Rubus crops and analyse the genetics of chilli thrip populations to track their movement between hosts and regions. The team will also investigate the chemical compounds that attract and deter the thrips.

Dr Xu and Dr Sarkar have other tricks up their sleeve that may prove beneficial in developing Integrated Pest Management (IPM) strategies for chilli thrips. They were both involved in recent work on the invasive tomato potato psyllid (TPP), where they successfully trained ladybirds to recognise the psyllid as preferred prey. They found that when ladybirds were introduced to the psyllid early on in their life cycle, they would grow to recognise them as a good food source.

Murdoch University project team (L-R): Miyuki Taniguchi, Basman Al-Jalely, Wei Xu, and Shovon Sarkar with Olivia Bell at Costa Photo credit: Helen Newman



Distinguishing features of Chilli thrips

The project will identify field-collected chilli thrips and candidate natural enemies using both morphological traits and DNA barcoding to ensure accurate species identification. A comprehensive series of laboratory, glasshouse, and field trials will be conducted to investigate chilli thrip behaviours under Western Australian conditions, including reproductive and feeding behaviour, host plant preferences, and population dynamics. We will also explore candidate attractants for improved thrips monitoring, assess potential natural enemies for biological control, and undertake chemical analyses of thrips and host plant volatiles, incorporating electrophysiological screening and behavioural assays.

By advancing knowledge of chilli thrips biology, ecology, and monitoring tools, this project will develop integrated management strategies that combine biological control with Integrated Pest Management (IPM) approaches. These outcomes will provide growers with practical, environmentally friendly tools to protect their crops, reduce reliance on broad-spectrum insecticides, and support sustainable production systems.

Dr Wei Xu

The project will run from 2025 until 2028 and regular updates will be provided in this journal.

Hort Innovation BLUEBERRY FUND

Hort Innovation RASPBERRY AND BLACKBERRY FUND