

Next Generation Weed Management

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Australian berry growers are set to benefit from a groundbreaking national initiative tackling one of horticulture's toughest challenges: weeds.

The *Next Generation Weed Management (BY23002)* project is Hort Innovation's largest-ever investment in weed control and aims to deliver innovative, eco-friendly, and commercially viable solutions to reduce chemical use and improve productivity across horticultural crops.

As Ella outlined in her article in the Autumn 2025 edition of this journal 'Strategies for weed management in berry crops', weeds are an almost inevitable part of growing crops, but weeds can reduce crop yields by up to 50% and are becoming harder to manage due to increasing herbicide resistance and fewer chemical control options. This five-year project, running from March 2025 to April 2030, brings together leading researchers from La Trobe University, Nufarm Australia and Applied Horticultural Research (AHR), with support from Croplands, Kilter and grower groups in Queensland and Victoria.

The program spans three key research streams:

1. Grower-led adoption of AI and robotics:

AHR is working directly with growers to accelerate the use of AI-powered robotic systems for weeding, planting, and spraying. The goal is to reduce input costs, labour needs, and environmental impact through real-world demonstrations, economic modelling, and tailored support to help farms transition to these advanced technologies.

2. Anaerobic Soil Disinfestation (ASD):

Led by La Trobe University, this project explores a chemical-free method of weed and pathogen control using natural materials like sugarcane molasses and chicken manure. By creating low-oxygen conditions in the soil, ASD can eliminate weed seeds and soil-borne pests while improving soil health. It has shown strong results overseas and will now be trialled across Australian crops including strawberries, capsicums, and melons in Victoria and the Northern Territory.

3. Robotic precision spraying:

In partnership with Nufarm, Croplands and Kilter, this project is developing an autonomous robot that uses machine learning and green-on-green weed detection to apply herbicide microdroplets directly onto weeds. The system can reduce herbicide use by up to 95%, while improving yield and cutting labour costs.

Together, these initiatives will provide berry growers and other horticultural producers with cutting-edge tools to manage weeds sustainably, reduce chemical dependency, and future-proof their operations in an evolving farming landscape.

For berry growers, this means not only better crop protection but also opportunities to repurpose farm waste, lower input costs, and improve environmental outcomes. With trials and demonstrations set to roll out nationally, the project promises practical, scalable solutions for farms of all sizes. Watch this space for more updates as the project progresses.

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