

Propagator Profile: Toolangi Certified Strawberry Runner Growers' Co-Op

Sandy Shaw (Vic/SA) & Wendy Morris (Qld), Berry Industry Development Officers, Berries Australia

For sixty-five years the Toolangi Certified Strawberry Runner Growers' Co-operative (the Co-op) has been supplying certified strawberry runners to growers across the country. Today the Co-op is made up of six long-standing family businesses and is Australia's longest-serving runner producer. Specialising in the commercial propagation of strawberry runners, the Co-op operates under the Victorian Strawberry Runner Certification Scheme (the Scheme) and is currently the only runner supplier in Australia whose runners meet this Scheme's rigorous certification requirements. Over the years, many strawberry growers have built their businesses in tandem with the Co-op, and many of the innovations used in production fields today have their roots in industry collaboration with the Co-op.



VSICA inspection team reviewing runners for Scheme certification, 2025. Photo credit: George Weda



Toolangi runner harvest, 2010. Photo credit: Historical photo provided by the Toolangi Co-Op



Fruithaul truck prepares to depart Toolangi Co-op for Queensland, 2025. Photo credit: George Weda

The Co-op Today

The Co-op is proud of their historical experience and are committed to continuous growth and improvement through scientific research. They engage in an ongoing process of evaluation and importation of new international varieties for the Australian market; most recently the new University of California and California Berry Cultivars varieties.

They are supporting the domestic breeding program by propagating their late-stage varieties for large-scale grower trials. They collaborate with industry extensively in research and development for runner production (e.g., Hort Innovation projects BS13002; BS13004), disease diagnostics (e.g., BS10002; BS12009), and soilless production systems (e.g., BS06029; BS09019).

For example, they spearheaded research which developed optimum nutrient and trimming regimes for leaf-on runners for subsequent fruit production in Western Australia. Research co-funded by the Co-op led to the development of advanced diagnostic technologies for viruses and bacteria. Additionally, 20 years ago the Co-op was a pioneer in introducing soilless production systems for runner multiplication and plug production. Early research at the runner industry level informed soilless production practices now adopted more widely in the fruit production industry.

For many strawberry growers, purchasing certified runners from the Co-op provides a healthy start for their plants and protects against the introduction of soil-borne pathogens such as *Macrophomina*, *Colletotrichum*, *Fusarium*, *Verticillium*, and *Phytophthora*. To produce certified runners, the Co-op's runner growers must adhere to the strict phytosanitary protocols outlined in the Scheme, which is regularly updated and independently managed by the Victorian Strawberry Industry Certification Authority (VSICA).

VSICA is a not-for-profit, independent business from the Co-op, established in 1995. The Board of VSICA has equal representation by fruit and runner growers to ensure the Scheme meets the needs of the whole industry. VSICA provide the Co-op with high-health mother stock plants that have undergone two generations of production and intensive pathogen testing. Each year, these plants are indexed and DNA-tested for viral, bacterial, and fungal pathogens by independent scientists at AgriBio. The Co-op then multiplies the mother plants supplied by VSICA in the final two generations of the Scheme.

To ensure compliance with the Scheme, VSICA conducts a minimum of thrice-yearly inspections for diseases of all runner plants and plugs, with the final inspection occurring just before harvest and distribution to fruit growers. Any concerns identified during inspections must be addressed before the runners can receive the official Certification label.

A Historically Scientific Foundation

In the 1950s, most strawberry production in Australia was centred in Silvan, Victoria. At that time, growers produced their own runners by selecting plants from the current season's fruiting crops for use as the next season's planting stock. Without fumigation or knowledge of virus and disease transmission, this practice led to the accumulation of pathogens over time, reducing plant health, fruit quality, and yields to unsustainable levels of 2-3 tons per acre.

Seeking a solution, the Silvan Growers' Association (now the Victorian Strawberry Growers Association) partnered with the Victorian Department of Agriculture to address the issue. Together, they identified three key areas of focus for research: developing an isolated site for runner production, introducing new varieties from overseas, and creating pathogen-tested plants.

The township of Toolangi, at over 600m altitude and nestled in a state-forest of mountain ash, was selected as the ideal site for runner production due to its isolation from fruit production areas and virus vectors like aphids. Professor Lionel Stubbs, a virologist, and Karel Kroon from the Institute for Horticultural Science at Knoxfield, developed a protocol for pathogen testing, now known as the Scheme. Stubbs discovered that heat therapy eliminated most strawberry viruses and that Toolangi's cool, moist environment hindered aphid-borne virus transmission.

By the early 1960s, pathogen-tested runners from Toolangi were successfully trialled in Silvan, leading to the formation of the early Co-op. This association commercially produced certified runners for distribution across Australia, with its growers adhering to strict biosecurity and plant health protocols. The Toolangi district was later designated a Strawberry Isolation Area (now the Toolangi Plant Protection District), ensuring the protection of pathogen-tested varieties by prohibiting the entry of potentially harmful plant material, including strawberry fruit, into the area.

In the 1980s, the Co-op negotiated licensing agreements to import new strawberry varieties from the University of California, Davis breeding program and other sources. The strong reputation of the Scheme played a crucial role in securing these agreements. The Co-op demonstrated its ability to meet UC Davis's stringent production protocols for quality and yield, which was key to gaining their trust and advancing the partnership.

The partnership formed a foundational model for the introduction of all new strawberry varieties from overseas into Australia.



Senior Field Officers Karel Kroon and Ralph Proctor inspect virus-infected plants in a strawberry production field trial, 1960s. Photo credit: Historical photo provided by the Toolangi Co-Op



Dr. Lionel Stubbs, plant virologist
Photo credit: Historical photo provided by the Toolangi Co-Op



Toolangi Plant Protection District signage
Photo credit: George Weda



New plug production facility, 2025

Photo credit: Tom Ridley



Toolangi plug curtains at peak of production, 2025

Photo credit: Corina Horstra



Drone spraying application in action, 2025

Photo credit: Tom Ridley

In the early 2000s, in response to the global phase-out of the fumigant methyl bromide, the Co-op co-invested in and ultimately led the longest running research program to find effective soil disinfestation solutions in Australia. Many of the fumigants now used by the fruit industry originated from this program (e.g., ethanedinitrile and optimum mixtures of 1,3-dichloropropene and chloropicrin).

Thinking towards the Future

Co-op Managing Director George Weda says the Co-op is rapidly expanding its plug plant facilities, developing state-of-the-art infrastructure to provide growers with quality transplants. They have spent the last few years working with grower-cooperators to gather research data on plug setups and will continue to do so into the future. The Co-op has also invested considerable time in working with drone manufacturers and agronomists to develop spray applications via drone, which allows them to spray in conditions when fields are inaccessible to tractors. The Co-op are working in cooperation with researchers and private industry to carefully transition to the soil fumigant methyl iodide as their main fumigation method - the only alternative that consistently controlled pathogens as effectively as methyl bromide in research carried out at Toolangi.

When asked what he sees as the key to the Co-op's longevity, Mr. Weda cites the strong relationships the Co-op has developed with their grower clients over the years. He says they feel comfortable calling to give feedback and ask for advice, a process which pays dividends for the Co-op as it helps them identify and improve their operations based on direct grower feedback. He is also excited about the next generation of runner growers who are coming into their own and bringing their own ideas and innovations into the Co-op. Mr. Weda stated that the Co-op's future focus will continue to revolve around their scientific research at home and abroad, with particular emphasis on practical innovation for all aspects of the Australian strawberry industry.

