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Australian Wine Research Institute Releases Spring 2026 Technical Review

It compiles studies on climate adaptation, fermentation control, powdery mildew and Australia’s first detection of GIN virus.

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The Australian Wine Research Institute said on Thursday that its Spring 2026 Technical Review is now available, offering grape growers, winemakers, and researchers a new digest of recent studies in viticulture and oenology, along with the latest publications

produced by the institute.

The review was released through the AWRI Library, also known as the John Fornachon Memorial Library, at Wine Innovation Central in Urrbrae, South Australia. According to the institute, the issue was curated by viticultural scientist and AWRI emeritus fellow Dr. Peter Dry and engagement specialist Matt Holdstock. The publication is designed to bring together selected research that could affect vineyard management, fermentation practices, wine stability, disease control, and adaptation to climate pressures.

At the center of the new issue is a roundup of recent AWRI research. Among the featured papers is “Harvesting insights from recent advances in yeast genomics for predictable and precision wine fermentation,” published in Current Opinion in Biotechnology. In that review, Dariusz Kutyna and Isak Pretorius examine how genetic engineering has changed wine yeast biology and strain development. The paper also points to synthetic yeast chromosomes as a step toward a fully synthetic eukaryote, a development that could have broad implications for precision fermentation in the wine sector.

The AWRI review also highlights a practical disease management article, “Ask the AWRI: Powdery mildew - catch it early or chase it all season,” published in Australian & New Zealand Grapegrower & Winemaker. The topic addresses one of the most persistent problems in vineyards and reflects the review’s mix of advanced science and applied field advice. Other AWRI-linked items in the issue include a randomized controlled crossover study in Food & Function on chestnut flour enriched bread and post-meal glycaemic response in healthy adults, a paper in Fermentation on using temperature to limit Hanseniaspora uvarum during spontaneous wine fermentation, and a FEMS Yeast Research article titled “Uncorking wine yeast genomics from grape to glass.”

The viticulture section of the new review places strong emphasis on vineyard resilience, weed control, disease risk, and climate adaptation. One of the featured studies, published in OENO One, evaluates under-vine cover crops in Riesling vineyards and compares red fescue, wild thyme, black medic, and a commercial herb mix with spontaneous vegetation, mechanical tillage, and herbicide treatments. The study

focuses on weed suppression as well as possible effects on yield and grape quality, issues that are central to vineyard economics and sustainability.

Another highlighted paper looks at canopy shading as a strategy to protect berry composition under water deficit. That study, published in Environmental and Experimental Botany, was based on work in the Yakima Valley of southeastern Washington state using 12-year-old own-rooted Cabernet Sauvignon grapevines. By separating the direct and indirect effects of water deficit, the research adds to a growing body of work aimed at helping wine regions manage hotter and drier conditions.

The review also points readers to a report on the first detection in Australia of GIN virus, a development likely to draw close attention from growers and nursery operators. That item appears in Australian & New Zealand Grapegrower & Winemaker. The viticulture selection further includes papers on the importance of long-term field studies for climate change adaptation, microbial succession from nursery to vineyard and its effect on young vineyard yield, pruning practices and grapevine trunk diseases, and the use of vineyard “idling” as an alternative to mothballing in order to preserve vineyard quality and longevity.

In the oenology section, the AWRI has assembled studies that focus on fermentation performance, acidity management, wine stability, alcohol reduction, packaging, and the reuse of winery byproducts. One of the featured papers, published in VITIS Journal of Grapevine Research, investigates the impact of adding fumaric acid during the first stages of wine production. The study examines how that addition affects the viability and fermentation behavior of Saccharomyces cerevisiae strains and other yeast species used in winemaking.

Another study, published in Foods, looks at sodium alginate as a processing aid to reduce calcium levels in wine and possibly lower the risk of calcium tartrate instability. The review also includes work on assessing wine quality in glass and alternative packaging during storage, bioacidification using yeast strains that target malic acid degradation, dealcoholization of wine by pervaporation, the upcycling of grape pomace for use in malolactic fermentation and fining, and a review of emerging bottle-aging

and wine refinement strategies.

The release of the Spring 2026 Technical Review reflects AWRI’s broader role as a research and information hub for the Australian wine sector. The institute said library members can access a database containing more than 734 digital journals and magazines and set up alerts in key areas of interest. It also said library services are provided free of charge to all Australian grapegrowers and winemakers, a point that underscores the practical purpose of the review as a tool for industry knowledge transfer rather than a publication aimed only at academic readers.

AWRI said information services are delivered by the institute and the John Fornachon Memorial Library. The work is funded by Wine Australia, using levies from grapegrowers and winemakers and matching funds from the Australian government. The institute is also part of the Wine Innovation Cluster in Adelaide.

The full Spring 2026 Technical Review is available through the AWRI Library website, where readers can access the issue and follow links to the featured journal articles and industry publications.