Turning Runoff into a Resource: New Future Drought Fund Project for Berry Growers

Jen Rowling, Projects and Membership Manager, Berries Australia

Australian berry growers are set to benefit from a new national project that aims to transform irrigation runoff into a valuable on-farm resource, helping improve water quality, reduce nutrient losses and strengthen drought resilience across the protected cropping berry industry.

Berries Australia has secured funding through the Australian Government's Future Drought Fund Innovating for Transformation Innovation Challenges Program to deliver the project ***'Bioreactors - Turning runoff into a resource for the protected cropping berry industry'.***

Working closely with delivery partner NSW Department of Primary Industries and Regional Development, the project will run from August 2026 through to June 2028 and is designed to demonstrate practical solutions that growers can adopt on their own farms.

Addressing a growing challenge

Water security continues to be one of the biggest challenges facing Australian horticulture. Protected cropping berry farms often capture irrigation runoff, but managing nutrients, sediments and plant pathogens within this water can be difficult and costly.

The project will investigate the use of commercial-scale woodchip bioreactors as an innovative way to improve runoff water quality before it is reused or returned to the environment. These systems use naturally occurring biological processes to remove excess nutrients and contaminants, potentially allowing growers to recycle more water while reducing environmental impacts. You can find out more about the concept in two earlier articles in this journal. Visit the industry Resource Library at bit.ly/BA-RL and search 'bioreactor'.

By improving water reuse opportunities and reducing nutrient losses, the project aims to increase farm resilience during periods of water scarcity while supporting more sustainable berry production.

Demonstration sites across Australia

To ensure the technology is tested under a range of growing conditions, demonstration bioreactors will be installed on commercial berry farms in five key production regions:

- Sunshine Coast, Queensland
- Bundaberg, Queensland
- NSW North Coast
- Yarra Valley, Victoria
- South West Western Australia

Each site will be monitored to evaluate:

- Water savings
- Nutrient removal
- Contaminant reduction
- Pathogen reduction
- System reliability
- Economic performance

The results will provide growers with practical information on how bioreactors perform under different production systems and climatic conditions.

More than just demonstrations

A key focus of the project is ensuring the knowledge generated reaches growers across Australia, so Berries Australia and its project partner will deliver a wide set of extension activities to support knowledge sharing and practice change amongst Australian berry growers:

- On-farm field days
- Grower workshops
- Practical design and installation guides
- Maintenance factsheets
- Short training videos
- Digital decision-support tools
- Case studies from participating growers
- Translated resources for culturally and linguistically diverse farming communities

These resources will help growers better understand whether bioreactors are suitable for their own businesses and provide practical guidance on implementation.

Building resilience for the future

The project aligns with the Future Drought Fund's goal of accelerating the adoption of innovative technologies that help Australian agriculture adapt to drought and climate variability.

For berry growers, the project offers an opportunity to explore practical water management solutions that may improve resource efficiency, reduce environmental risk and increase resilience in an increasingly variable climate.

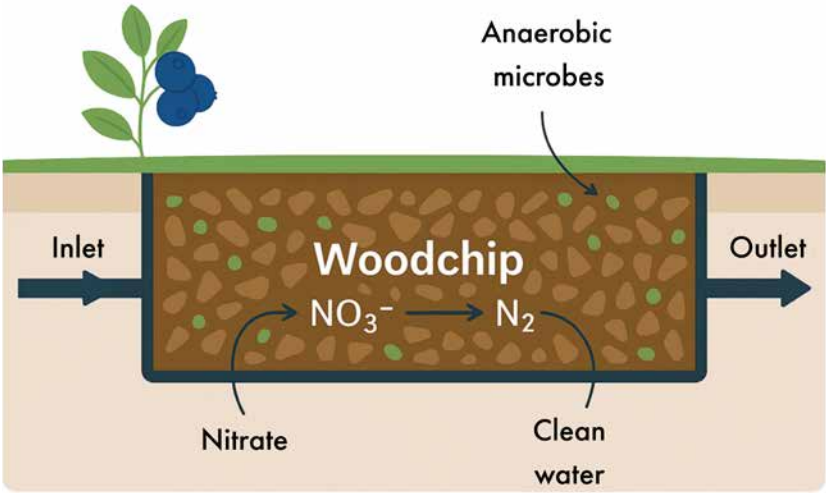
Growers across the participating regions will have opportunities to become involved through field days, demonstrations and extension activities as the project progresses, with updates and event details to be shared through Berries Australia communications.

If you don't already follow Berries Australia on our social media channels, then now's a great time to start as we share lots of relevant material regularly via:

@Berriesaus **@berries-australia**

Bioreactors: how do they work?

Bioreactors use the natural process of denitrification to remove nitrate from drainage water; the most used material is woodchip. In this process, microbes consume the carbon in woodchips and convert nitrate (NO_3-) into nitrogen gas (N_2), which is safely released into the atmosphere (Figure 1).



Denitrying Bioreactor

- Drainage water is directed into a trench or tank filled with carbon-rich media (typically woodchips)
- Under low-oxygen (anaerobic) conditions, denitrifying bacteria thrive
- As water flows through the bioreactor, bacteria use the carbon as an energy source and convert nitrate into nitrogen gas which is dispersed into the atmosphere

Acknowledgements

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