

News Release

FOR IMMEDIATE RELEASE

Hitachi Vantara and Golden Grove Nursery Harness Data-Driven Analytics for More Sustainable Water Management

Real-time monitoring and analytics capabilities ensure efficient irrigation and fertigation, reduce nutrient runoff while enabling higher quality citrus nursery trees

SYDNEY and SANTA CLARA, Calif., March 28, 2023 - Hitachi Vantara, the modern infrastructure, data management and digital solutions subsidiary of Hitachi, Ltd. (TSE: 6501), and Golden Grove Nursery, the dominant supplier of citrus nursery trees to the Queensland citrus industry (Australia), have applied artificial intelligence (AI), advanced analytics and sensor technology to inform data-driven irrigation water management practices for sustainable, environmentally friendly food production.

Golden Grove has installed an innovative combination of weight scales, soil moisture sensors, and analytics developed for horticulture use by Hitachi Vantara, Greenlife Industry Australia, Applied Horticulture Research, and ICT International. This solution measures and assesses moisture content in the growing media of pots, as well as crop water use, to provide insights that inform practices such as irrigation and fertilization decisions. The implementation includes a free-standing weather station to monitor the microclimate and a range of pH, temperature, soil moisture, weight, and electrical conductivity sensors to monitor water quality and leachate.

“The best production nurseries have the best water,” said Golden Grove Nursery Director Wayne Parr. “With this project we are using the power of data to improve our irrigation management processes which will, in turn, reduce the overheads of water usage, improve environmental outcomes, and ensure we maintain compliance with regulatory requirements.”

With the new implementation, water is automatically sampled and tested every 15 minutes, as opposed to the manual process Golden Grove has been undertaking twice a week for more than 30 years. Sensors have replaced bottles dipped into the dam and fingers poked into a pot. Real-time data is uploaded to the cloud and presented on one screen – the Hitachi Supply Chain Control Tower^{*1}, modified to holistically measure production nursery productivity and environmental stewardship by integrating sensor data, weather forecasts, and biophysical models. Nursery personnel can easily access depictions of predictive analytics such as irrigation requirements thanks to Hitachi’s Lumada Manufacturing Insights^{*2}.

^{*1} Hitachi Vantara Website - Hitachi Supply Chain Control Tower : <https://www.hitachivantara.com/en-us/web/solution-profile/supply-chain-control-tower-solutions-to-conquer-disruption-solution-profile.html>

^{*2} Hitachi Vantara Website - Lumada Manufacturing Insights : <https://www.hitachivantara.com/en-anz/solutions/data-driven-industrial-operations/lumada-manufacturing-insights.html>

Generations of experience, instinct and know-how are now supplemented with real-time insights that can give Golden Grove Nursery a data-driven edge. Within months of implementation, the nursery improved its irrigation practices by 30%.

“It is a privilege to support both sustainability and operational efficiency objectives in tandem, in an industry like agriculture and horticulture that has such a direct impact on society,” said Hitachi Vantara Senior Vice President of Business Transformation and Sustainability Maggie Laird. “We are committed to developing the solutions and analytics that sector-leading innovators like Golden Grove Nursery need to make critical data-driven decisions that solve pressing challenges like modernizing to remain competitive whilst protecting the land and surrounding waterways and fostering sustainability in food production practices.”

A Legacy of Innovation and Technology Adoption

A proud citrus-growing state, Queensland contributes 20% of Australia’s citrus industry, the

country's largest fresh fruit exporting industry, which sends up to AU\$540M worth of citrus around the world, annually. Golden Grove produces between 200,000 - 250,000 citrus nursery trees per year, supplying up to 70% of Queensland's citrus growers and commercial orchards.

"We're now able to monitor the irrigation systems daily and understand exactly when to water so we can avoid root damage and make sure the nutrient mix is just right," said Parr. "We've already been able to identify and adjust for over watering during the winter months of 2022, and through this summer with irrigation much more firmly under control."

Smart Farming for Sustainable Food Production

This digital smart farm project is part of a broader sustainable horticulture program supported by funding from the Australian Government's National Landcare Program as well as Hort Innovation, with co-investment from Applied Horticultural Research, Greenlife Industry Australia, AusVeg, Freshcare, Growcom, Australian Banana Growers Council, Hitachi Australia Pty Ltd and Hitachi Vantara LLC.

For more information on how Hitachi Vantara is helping customers provide a data-driven approach to sustainability, please click the website below.

<https://www.hitachivantara.com/en-us/solutions/sustainability.html>

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About Hitachi Vantara

Hitachi Vantara, a wholly-owned subsidiary of Hitachi, Ltd., delivers the intelligent data platforms, infrastructure systems, and digital expertise that supports more than 80% of the Fortune 100. To learn how Hitachi Vantara turns businesses from data-rich to data-driven through agile digital processes, products, and experiences, visit hitachivantara.com.

About Hitachi, Ltd.

Hitachi drives Social Innovation Business, creating a sustainable society with data and technology. We will solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products, under the business structure of Digital Systems & Services, Green Energy & Mobility, Connective Industries and Automotive Systems. Driven by green, digital, and innovation, we aim for growth through collaboration with our customers. The company's consolidated revenues for fiscal year 2021 (ended March 31, 2022) totaled 10,264.6 billion yen (\$84,136 million USD), with 853 consolidated subsidiaries and approximately 370,000 employees worldwide. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

About Hort Innovation

As the grower-owned, not-for-profit research and development corporation for Australia's horticulture industry, Hort Innovation's primary function is creating value for horticulture growers and those across the horticulture supply chain. Each year, it invests more than \$120 million in R&D, marketing and trade programs to improve the productivity, farm-gate profitability and global competitiveness of Australian growers. For more information, visit www.horticulture.com.au.

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
