



- Aiming to improve the efficiency of farmers through the use of technology
- Showing first-hand that precision viticulture is the future for wine growers
- Agri-EPI tapping into viticulture to discover future needs and concerns of growers

Background

Ian Beecher-Jones, co-owner of JoJo's Vineyard in Oxfordshire, has been a precision farming adviser for several years and is part of Agri-EPI Centre's innovation farm network. At JoJo's Vineyard, he is growing 6 different varieties of grapes to make still and sparkling wine and incorporates

agri-tech at every level possible to enhance efficiency, sustainability and productivity.

JoJo's vineyard is situated in the Chiltern Hills, near Henley on Thames, Oxfordshire. At the vineyard, Ian utilises the latest technology from drones, robots, satellites and data, which helps the team at JoJo's make the best grapes possible.

There are many great traditions in vine growing that shouldn't be lost. Ian explains that blending in new technology alongside the traditions will create an opportunity for vineyards in the UK to produce a product suited for the next new world in a sustainable way.

Ian said:

"We're excited to be working with Agri-EPI to explore the opportunities for JoJo's and the rest of the UK vineyards. The UK viticulture sector is on an incredibly upward journey, but we have to be aware of producing wine in the most efficient and sustainable way."

Farmer-led research and development

Ian, in collaboration with Agri-EPI and robotics technology company, Antobot, has recently embarked on two projects at JoJo's vineyard, one to create a vineyard digital infrastructure map, and the other for on-the-ground monitoring using the Antobot robot.

The mapping tool, developed with the Collabiculture project in South Australia, aims to create a shareable, digital infrastructure map of the vineyard's rows and boundaries. The map can then be shared with any ag tech companies wishing to work with vineyards around the world. The model is the foundation on which drones, robots and vehicles can plan navigation paths before arriving on site, avoiding time wastage from surveying. This will improve the efficiency of data gathering services on farm.

Ian has described it as a contextualisation map as it gives context to all the other digital data maps that are generated on the vineyard. "If I can't overlay my rows and blocks on the satellite, drone or robot generated maps I get back, I can't identify exactly where the variation is."

"It is the shareability of the digital infrastructure that is key to establishing a reliable and trustworthy data platform we can all work from."



"Once established we can share it with a range of ag-tech companies who see the benefits and opportunities of working with one of the fastest growing crops sectors in the country."

"The exciting aspect about this project is the global potential to remove cost for growers and speed up the time it takes to engage with ag-technology companies whether they are providing drone, robot, satellite or software services. We are all working from the same infrastructure data."

Vineyards are an ideal environment to work in since the pathways between the rows create a roadway for robots to travel. The robots are fitted with high level GPS and LIDAR systems to help them navigate around the vineyard. The robots at JoJo's will carry cameras and sensing equipment to monitor and analyse the vines and grapes as they grow during the year. Gathering data is a time consuming task. Robots and drones will speed that up.

Agri-EPI making an impact

Agri-EPI aims to improve the efficiency of farms through the use of technology, and they have worked with Ian and JoJo's Vineyard to learn and understand where technology can help growers and improve performance in the vineyard.

In addition to the current grant funded projects at the vineyard, Agri-EPI has deployed technology to provide data and insights that will help validate future R&D projects examining sustainable production. They have installed a TerraPrima Ladybird weather

monitoring system that allows farmers to predict crop disease and improve yields, and invested in GPS monitoring equipment and meeting room facilities used to disseminate and host knowledge exchange events about agri-tech solutions at JoJo's.

Ian said:

"A benefit of working with Agri-EPI is the broad range of tech companies we have access to and the experts who can help us turn data in to decision tools. Not all technologies are going to be appropriate for vineyards, but if we don't try them we will never know. Working alongside technology experts is very exciting, as is getting to know the innovative people who are now working in the agriculture sector. Ag tech is bringing new energy into the agricultural and horticultural sectors which is a benefit to the whole industry, not just viticulture."

"From my own 20 years of working in agri-tech, I know that there are growing pains for agri-tech companies. By working together, JoJo's and Agri-EPI Centre can give a platform to companies to test their technologies and roll them out not only to the wider viticulture sector, but potentially other food growers."

**Ian Beecher-Jones,
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