Profile: Western Berry Company, Western Australia

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Nestled on the banks of the Moore River near the Wheatbelt town of Regans Ford, is WA's northern most blueberry operation, the Western Berry Company. Driven by a passion for research and best-practice agribusiness, Marek Kwiecien-Fisher and his father Derek Fisher have used their science and business management backgrounds to establish an orchard that achieves impressive yields of high-quality fruit.

Regans Ford, with its Mediterranean growing climate, is 110km north of Perth and around 35km inland from the coast. It receives around 550-600mm rain per year and has low pest prevalence due to its isolation from other horticultural and urban areas. Water quality in the area is very good, with low salinity and iron levels. Bore water on the Western Berry property has been used for bottled water in the past.

How it all started

Marek studied horticulture and viticulture at university and had planned to go into wine making. He moved to the Regans Ford farm in 2007 to finish his studies externally and took over management of the family farm which was being established as an olive grove for oil production. The initial 2001 trial planting of 7ha of olives was expanded immediately to 41ha with a further 40ha the following year. By 2010, the family was seeking a use for the remaining 10ha of quality arable horticultural land on the property and a use for the unallocated water on their water licence. It was then that low-chill Southern Highbush blueberries caught the attention of both Derek and Marek.

> **We were looking for a high-value machine-harvestable crop and were initially considering pomegranates for the Japanese juice market. Blueberries came out on top as the better choice though. Its [blueberries] health credentials had it on the front of every magazine and it's the berry with the longest shelf life. The only problem was the high capital cost of establishment.**
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> **We started off by establishing 1ha of berries under polytunnels in 2011. Profit from our first harvest in 2012, and successive harvests after that, was reinvested into the business for expansion. By 2014 we had 4ha of blueberries grown in substrate in polytunnels. In 2015 we planted a 0.5ha trial plot in the ground under bird net which subsequently became 8ha, and in 2017 we built 3.5ha of polytunnels. We invested in packing and accommodation infrastructure in alternate non-expansion years.**

How it's done at Western Berry Company

Orchard setup

Plants in the polytunnels are grown in coir or pine bark, in 45L woven poly bags spaced 0.55m to 0.8m apart down the row (depending on variety) with 3m between each row (Figure 1). There are 4-6,000 plants per hectare depending on the variety.

About half of the current plantings are in polytunnels with side vents for climate control and half in the ground under bird net. Future plantings will be in bags, but under netting to reduce capital outlay.

"The cost of tunnels verses netting is 7:1. Netting provides bird and hail protection, and we can get enough growth in autumn under the netting to have flowering wood in the coming winter."

Figure 1. In the polytunnels, plants are grown in 45L bags with 4-6,000 plants per hectare and yields of 30-35T/ha. Photo credit: Western Berry Company.

Irrigation setup

A single wire trellis runs down each row to stabilise the plants and suspend the anti-syphon, pressure-compensating drip irrigation line. Each plant is fed by a single 3.2L/hr dripper that is pulsed for 3 – 5 minutes at a time, 25 – 35 times per day (depending on the weather), delivering 5.5 – 9.5L/day to each plant.

Decisions regarding the irrigation schedule (number of irrigation pulses per day) are predominantly sensor driven. Delta-t substrate probes are installed in the coir bags at planting, with one probe placed at the base of the bag and one half-way up. The probes measure moisture, temperature and EC and feed the live data back to the computer (Figure 2). On-site weather stations that measure temperature, humidity, and light are located inside and outside the polytunnel to cross-check data trends coming out of the Delta-t soil moisture probes.

*"You must have the probes in there from the beginning [at planting] so that you know what the plants water requirements are from planting to maturity. *KEEP THE DATA*. Consultants only visit once or twice a year – you must invest your time into understanding what the probe can do for you and use that information all the time to drive decisions on irrigation."*

Nutrition

Plants are fertigated continually with each irrigation pulse. Nutrients are blended in agitated mixing tanks, and micro-amounts are continuously injected into the driplines. For the first two years after planting, Marek and his father Derek spent a lot of time collecting water samples from drippers and from drainage out of the bottom of coir bags. Samples were sent to a lab to assess how much nutrient (N, P, K, Mg etc.) was present in the solution. Results were used to determine how much nutrient plants were using throughout the season. This helped refine the fertiliser program and save on nutrient applications. EC measurements and quarterly leaf samples are used to monitor the fertiliser program.

Pruning

At maturity (2 to 3 years), plants are hedge pruned annually after harvest to promote a targeted cropping window (Figure 3). Every 3-4 years they get a heavy prune to clean them out and maintain an optimal structure.

"We tried a spinning blade box hedger at first, but it was too destructive, we use a sickle-bar hedger now."

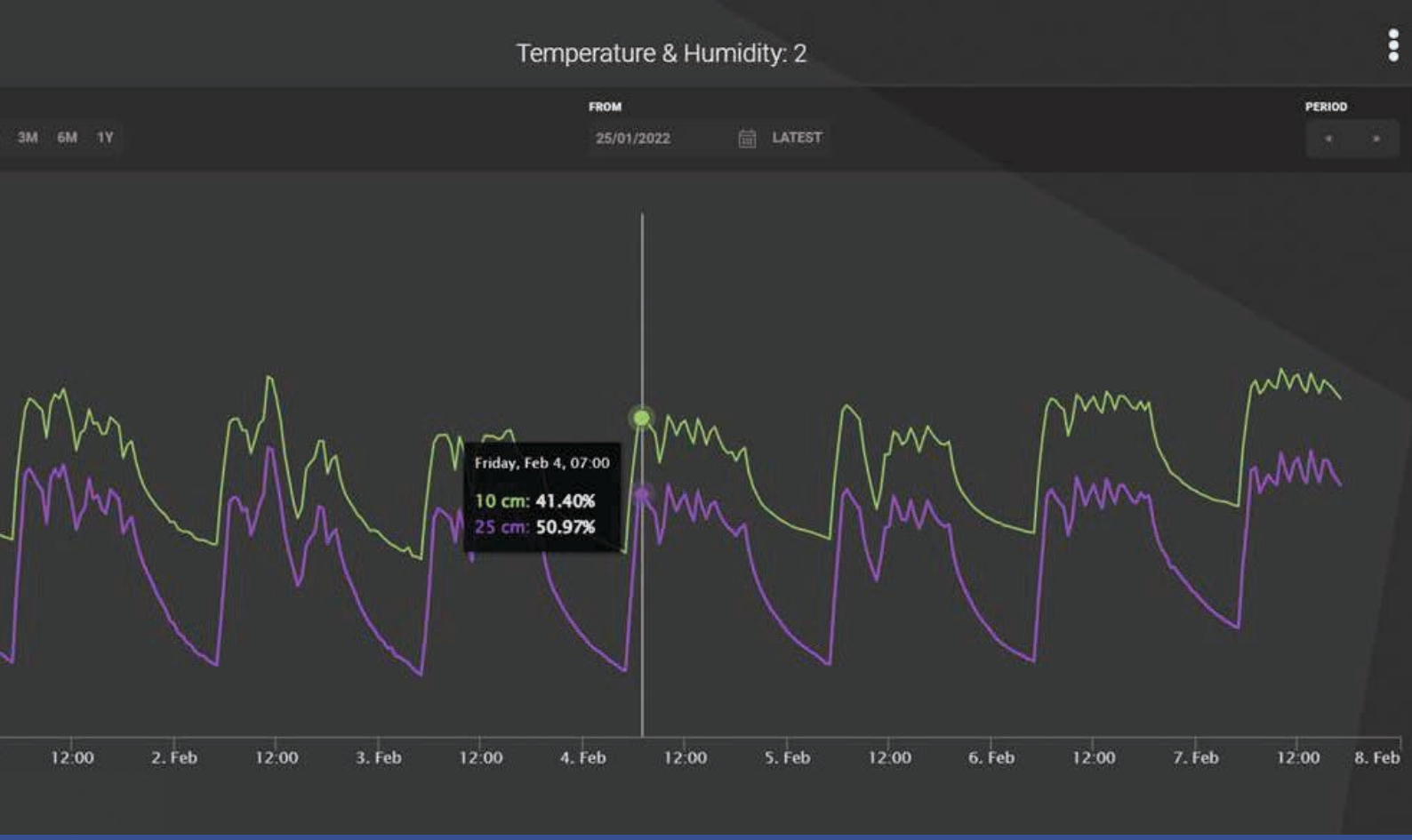

Figure 2. Moisture trends from Delta-t substrate probes are used alongside data from weather stations to make decisions on the irrigation schedule (courtesy Western Berry Company).

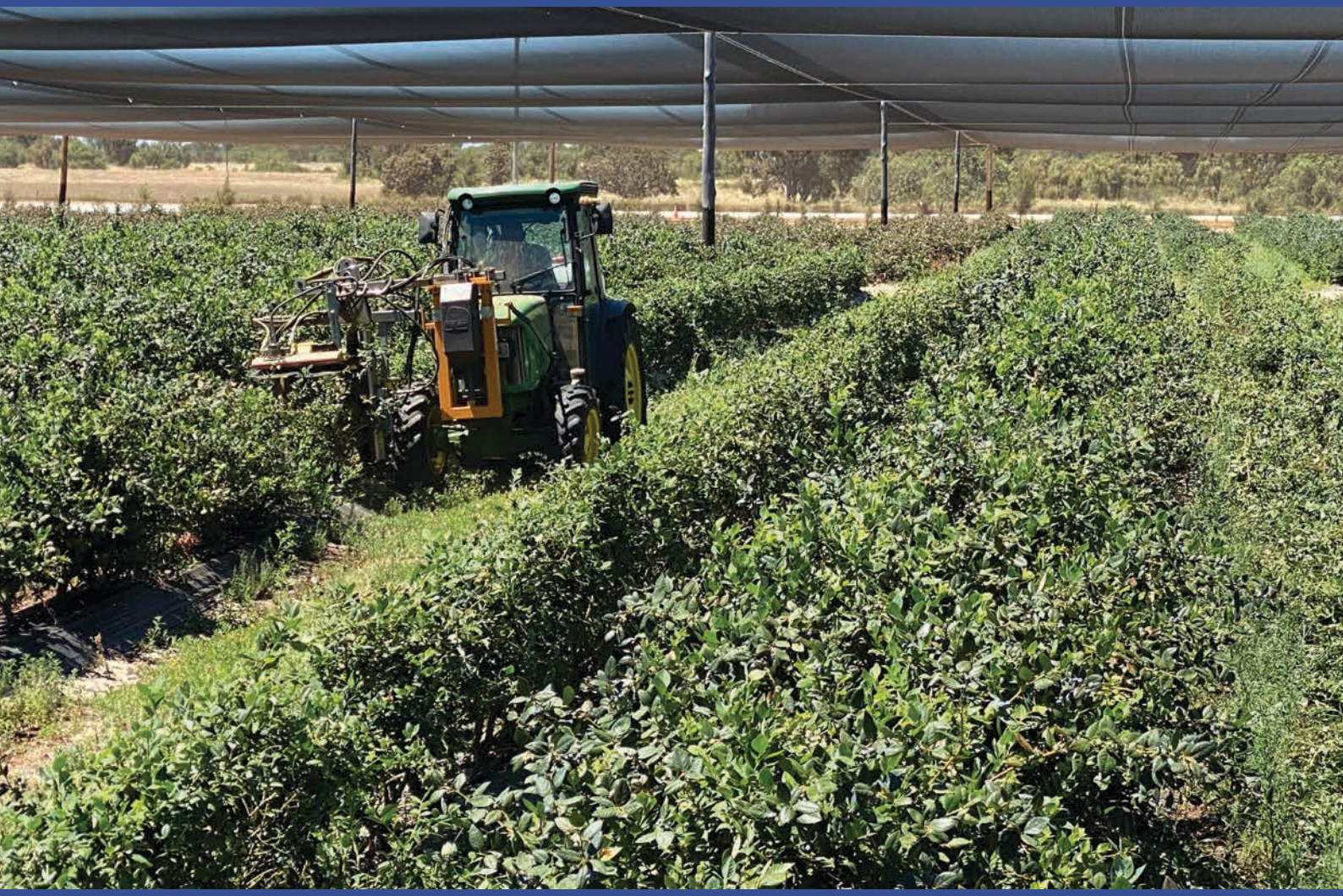

Figure 3. A sickle-bar hedger is used to prune plants annually after harvest to promote a targeted cropping window.
Photo credit: Western Berry Company.

Aerial overview of the Western Berry Company property with blueberry tunnels in the foreground and olive plantings behind.
Photo credit: Western Berry Company.

The Western Berry Company team (L-R) Tom Kwiecien-Fisher (Nursery Manager), Derek Fisher, Marek Kwiecien-Fisher.
Photo credit: Western Berry Company.

Harvest window

Picking starts in July and goes through until the third week of December, with 85% of the crop is harvested between October and mid-December.

Yields

Yields of 30-35T/ha has been achieved in the polytunnels under this growing system. The same varieties planted in the ground under bird netting, produce much less (20-25T/ha).

"In future plantings with everything in coir bags under bird net we're aiming to replicate the polytunnel production numbers."

Focus of the business

Producing large, tasty fruit, and maximising productivity and profit through research is the focus at Western Berries.

"Being a large producer, we focus on fruit size and quality. The best thing you can do as a blueberry farmer is to have large fruit. We also want a good taste profile for repeat customers and good bloom to attract buyers."

Marek has a science degree, and both of his parents have science degrees and PhD's, so the family has a strong focus on research and development.

"We enjoy our research and see a lot of value in it. We take research very broadly – plastic tunnels vs bird net, in-ground v's bags, plastic bag v's woven bag. Doesn't need to be in a lab. Lots of research goes into making our business decisions, there is a cost benefit analysis of everything we do. We try to maximise the profit of the business by getting better quality fruit or larger fruit size etc. It sounds practical but the research takes time and money."

Best part of growing blueberries

"Eating them, and seeing people's faces light up when they open a punnet of blueberries. Everybody loves blueberries."

Challenges

When asked what the challenges facing the industry are Marek had a three-part answer – workers, water security and climate variability.

"Finding workers and holding onto good workers is probably the biggest challenge at the moment. Security of water is another concern, with big companies buying up water rights and government policy changes; this is particularly concerning where you have made large capital investments that rely on current water allocation arrangements. Climate variability has also been challenging, this year has been unusually wet, with more major storms and colder than usual mornings."

Focus of future R&D

When asked what the focus of future R&D should be on Marek's answer centred around production costs and consumer education.

"We need consumers to understand where their food comes from and what is required to produce and deliver the food to the market. Unfortunately, our media feeds on sensationalism and most of the stories and news fed by the press to the public are negative, and it is the public's reaction that then drives the political process. This can only change by positive public education and better informed and sympathetic politicians.

On the production front, the fruit needs inputs to grow and we are in a rising cost environment. Everything from fuel prices to fertiliser costs to labour and harvesting costs are rising rapidly, and you throw on top of that COVID impacts. Most of these costs are out of our control so our farm-focus is the drive to reduce on-farm costs. We're looking at everything from water usage to fertiliser reduction to some form of mechanical harvesting to more productive blueberry varieties."

Any closing remarks about life as a farmer?

"Yes, I'm a farmer [Marek is reluctant to take that title] but there's so much more to it than farming, it's a bit of a misconception. Modern farming is better described as industrial agriculture. I don't get up every morning and think about day-to-day hands-on farm activities. My job is to manage people and manage risk, it's no different to running an office. I spend more time being a visa consultant, counsellor (pastoral care of workers), accountant and business manager than I do making agronomic decisions.

You have a product to sell, people to manage. You've got to make the hard business decisions, not the right 'farming' decision, there's no point doing something if you aren't making money."