

WA Workshop: Transitioning to substrate for strawberry growing

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A small group of WA strawberry growers were treated to an intimate look into the economics and practicalities of transitioning from in-ground production to protected tabletop growing at Berry Sweet Strawberry Farm in Bullsbrook.

Anthony and Lee-Anne Yewers of Berry Sweet Strawberry Farm shared the learnings of their 15-year substrate journey and highlighted the drivers that motivated them to transition from in-ground production to 100% tabletop production with ongoing expansion.

Change driven by labour

Labour is the key driver for moving towards substrate strawberry growing according to Anthony Yewers “It’s all about the labour”. Anthony has seen a 53-61% decrease in his labour requirements since moving from in-ground production to table tops under tunnels.



We used to need 75-90 pickers to harvest the 12ha plot in Bullsbrook, we now only need 35, and that’s despite a 15-25% increase in the pack-out (Anthony picks and packs in the field). The cost of labour per punnet is the lowest we have ever seen, and our pickers are making more money with an average piece rate pay of over \$40 per hour last season.

The working environment under protected tabletop production has also made it easier to attract and retain workers, with protection from the elements and picking and packing at waist height rather than on the ground. “There is a happy atmosphere during harvest now, our workers play music, sing and chat while achieving excellent harvest and piece rates. This is a stark contrast to when we were growing in the ground. A happy worker is a more productive worker” according to Berry Sweet.

Other benefits Anthony has seen since transitioning from in-ground growing to table tops under tunnels include:

- a 15 to 25% increase in long-term yields compared to the same variety grown in the ground
- a much higher proportion of marketable yield with more than 97% pack-out
- less fruit damage and missed fruit during picking
- more efficient pest and disease management with less sprays needed, and application timings that are not dictated by the rain
- more control over nutrient management
- reduced water input

The initial capital investment in converting to table tops is high. In December 2020, Anthony spent approximately \$170,000 per hectare to install tunnels and tabletop systems at his 8ha Muchea property (Table 1).



Figure 1. Anthony Yewers showing workshop participants his new tabletop system at Muchea.

Photo credit: Helen Newman

These costs are, however, offset by the annual costs of establishing an in-ground system (plastic mulch, trickle tape, fumigation, cloches – an annual cost saving of around \$15-17k/ha), the additional yield and marketable pack-out achieved in tabletops, and the labour saving.

Anthony estimates that it takes around 18 months for the whole new setup to pay for itself.

Table 1. Costs associated with Anthony’s Muchea tabletop system (December 2020 pricing)

Item	Approximate cost per hectare
Tunnels	\$80,000
Tabletops	\$50,000
Irrigation	\$15-20,000*
Substrate (coir)	\$23,000

* Not including the controller and fertigation kit.

Singles the way to go

Singles are the way to go according to Anthony. You get fewer plants per hectare using singles, but the plants yield more (250g more per plant on average) and there is less wastage. “There is nowhere for the fruit to hide in single rows, so you don’t get fruit left behind during picking like you do with the doubles” (Figure 2).

It is also more ergonomic and efficient for workers to harvest single rows. Pickers harvest one side at a time, which speeds up picking rates, minimises missed fruit, and protects the backs of workers by limiting twisting motions. “Fruit hangs differently in single tabletops, presenting itself on the outside of the strawberry plant rather than on the inside (Figure 3). Fruit is clearly visible down the rows, and pickers can harvest singles almost twice as fast doubles. My pickers can harvest and pack 45 to 50kg/hr on singles compared to 25 to 28 kg/hr on doubles.”

In addition, all the new technology being developed for strawberry substrate growing overseas is geared towards singles. This includes robotics for harvest and pest control.



Figure 2. 2021 winter-season berries grown in single tabletops at Berry Sweet in Bullsbrook.

Photo credit: Helen Newman

Anthony originally started with double tabletops at his Bullsbrook and Pemberton properties. He has now almost finished converting his entire 24ha planting at Pemberton to singles and is in the process of doing the same at his 12ha Bullsbrook property. This is in addition to the 8ha of singles he recently installed at his Muchea property.

Measure, measure, measure, and be willing to learn

This was Anthony’s final message to the group. To succeed in substrate, you must be willing to adopt new technologies that allow you to monitor and measure what’s happening in the field. This technology will give you a clear picture of what your crop needs, and you need to follow the lead of your devices (with some infield ground truthing). Converting to substrate is a big learning curve and you are constantly learning. This is a whole new way of growing strawberries so you must be committed to changing the way you do things.



Figure 3. Fruit grown in singles tends to present itself on the outside of the strawberry plant, rather than on the inside, making it easier to pick.

Photo credit: Helen Newman

Acknowledgement

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For more information about growing strawberries in substrate, visit: galuku.com/strawberries