Transitioning from soil to substrate

The Gallace family have been farming at Sunny Ridge since 1964, but in the last couple of years Sunny Ridge has transitioned from a family run business to a professional business managed by a board of directors. Mick Gallace is still involved in the business as a director and advisor. Sunny Ridge has properties at Main Ridge, Boneo, Seville East and on the Sunshine Coast at Wamuran. The Main Ridge farm also offers pick-your-own berries and has a café and farm shop selling many locally made berry products.

Daniel Rolek is Head of Farming Operations for all the Sunny Ridge properties, and works closely with his colleagues Orlin Atanasov at the Boneo farm, and Scott Carter in Seville East. Before joining Sunny Ridge in 2014, Daniel worked in the UK for ten years for part of the Berry Gardens group, growing hydroponic berries.

Transitioning to soil-less production

Strawberry production at Sunny Ridge has traditionally been field grown, but recently they have made the transition to growing in substrate under tunnels. According to Daniel, Sunny Ridge now grows more than 8 hectares of strawberries in substrate and under tunnels. The hydroponic system at Sunny Ridge is in their second season of production, having been commissioned in winter 2016.

One of the main reasons for the transition to substrate was the increase in planting density that could be achieved. Previously Sunny Ridge were growing about 37,000 plants/hectare, but with the current system they are growing around 93-94,000 plants/hectare. At a farm scale, this has seen the Boneo property increase from growing 250,000 plants to growing 1 million.

Other advantages of growing in substrate in raised gutter systems include the efficiency and ease of picking (a significant saving in labour expense), the potential to increase yield, uniformity and productivity, as well as improved hygiene.

The system is not without its challenges, however, which include the increased skill required to grow in substrate, the loss of the buffering capacity of the soil and the need for varieties suited to this method of production. It is capital intensive to set up and planning permission is generally required for protective structures.

Sunny Ridge mostly grows the Driscoll’s variety Amesti at the Boneo farm, which is an ever-bearer, purpose bred for...
Sunny Ridge Strawberry Farm, Vic

growing in substrate and under cover. It is well suited to the temperate conditions in Victoria and is also the predominant Driscoll’s variety grown in Tasmania. Daniel says Amesti works well for them as it produces fruit consistently throughout the season, unlike some of the other varieties they have trialled, which stop producing fruit for a period in January. This means they can retain their pickers throughout the season.

The tunnels and gutter systems used at Sunny Ridge were developed by Daniel and Quiedan Australia several years ago. The gutter system is designed to be strong and flexible so it can take bags, sausages, troughs or pots, providing future proofing options for the business in the future.

The current growing system uses 8 litre bags filled with coir, with 4 plants per bag. This gives a density of 10 plants per metre. The bags are covered, with holes for planting, which provides better control of weeds and moisture than open bags.

Irrigation and nutrients

Irrigation water and nutrient solution are delivered to the plants via a single 1.2 litre dripper in each bag. The delivery is controlled by a PRIVA Nutrijet fertigation system, programmed to provide the correct EC, pH and nutrient levels throughout the different growth stages of the crop. The recipe used has been developed specifically for the variety Amesti. The controller is linked to a weather station, and irrigation cycles are controlled by radiation sum, that is, the sunnier the day the more irrigation cycles. On a hot day, for example, there may be up to 10 irrigation cycles. Drainage run-off is used to check irrigation efficiency.

At this stage, the nutrients are not recycled and drainage goes to waste, but Daniel is intending to implement recycling in the future. More skill is required to recycle nutrients, but it will lead to more efficient use of resources.

In terms of yield, the aim is 900g/plant of first class fruit over the season, from late October/early November through until the end of May. On average wastage is around 2%.

Strawberries grown under cover can have different pest and disease problems compared to those grown in the field. Under cover aphids can be a bigger problem than in the field, as they are sensitive to wind, and prefer the softer tissues of plants grown under cover. Powdery mildew can be a problem for the same reason, though Daniel says it is rarely a problem at the Boneo farm. Two-spotted mites and Western flower thrips can be a problem as they are in field grown strawberries, but are effectively controlled with a good IPM program.

Daniel’s new pride and joy is the state-of-the-art packing shed which has come into operation this season, in fact the day I visited was the first run through of the new shed. Punnets are mostly packed in the field and then checked, weighed and put through a metal detector in the shed, making the whole process more efficient.

Overseeing operations across all the states means Daniel is busy travelling as well as growing berries, so taking time out to share his knowledge with industry, and hosting events such as the Hydroponic Farmers Federation farm walk in October is greatly appreciated.