

MEASURE TWICE, PLANT ONCE



Practical lessons from setting up modern berry farms
what worked, what hurt, and what I'd do differently today.

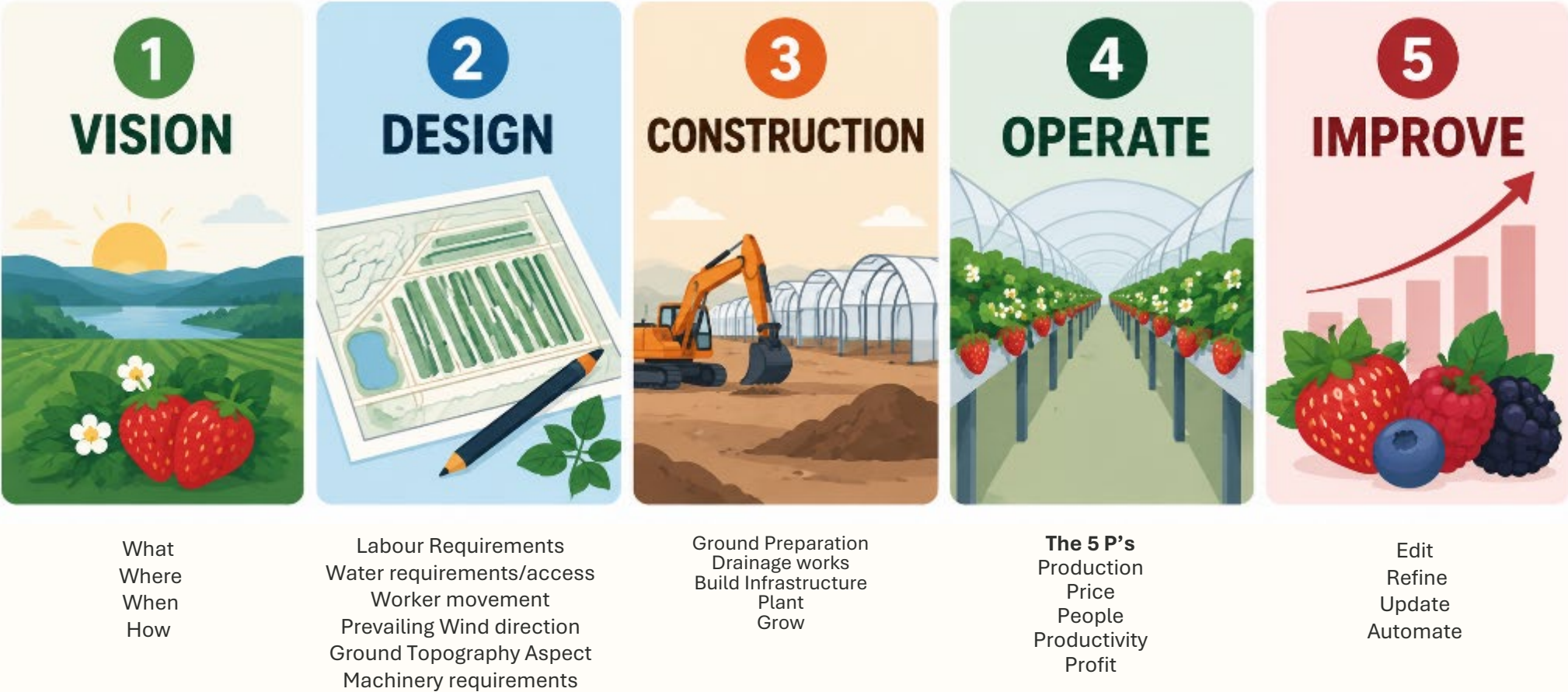
Start with a plan:

A Berry Farm is not all about growing berries.

It needs to be a finely tune production system — every design decision can have ramifications in the future on labour, quality, water requirements and harvest efficiency for years to come.

*“We joke all the time that growing berries is the easy part.
Managing people and productivity implications that can come with that can be far more costly”.*

The journey: from idea to operating farm



Planning and preparation: What does success look like for you?



Prepare for the next 10 years

- Do the numbers before the investment.
- Know where you are headed and why.
- What is your ROI over a 10-year period.
- How will rising costs and inflation affect your bottom line in years to come.
- What are your key metrics to measure success.
- Cash flow is King.

What do the numbers say:

The cheapest time to fix the site is before the farm exists.

SOFT FRUIT LIFETIME FINANCIAL PLANNER											Prepared:
\$ PER HECTARE											28/08/2024
Grower: Hillwood Berries		Variety: Andromeda		Crop: Strawberry		Area (Ha): 12 x 11					
Crop Year	1	2	3	4	5	6	7	8	9	10	Total
Calendar Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
OUTPUT											
Harvested Yield - Tonnes per Hectare	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	480.00
Price - \$ per Tonne	9.975	9.975	9.975	9.975	9.975	9.975	9.975	9.975	9.975	9.975	
Total Output \$	478,800	478,800	478,800	478,800	478,800	478,800	478,800	478,800	478,800	478,800	4,788,000
DIRECT COSTS - Growing											
Fertilisers / Sprays / Predators	22,000	22,440	22,880	23,320	23,760	24,200	24,640	25,080	25,520	25,960	240,896
Labour - Hire/Handy	19,153	20,000	20,800	21,632	22,497	23,397	24,333	25,306	26,319	27,371	230,809
Labour - Polytunnel Management	0	0	0	0	0	0	0	0	0	0	0
Other Crop Costs	2,150	2,193	2,237	2,280	2,323	2,367	2,410	2,453	2,496	2,539	23,542
Labour - Harvest	100,800	104,832	108,864	112,896	116,928	120,960	124,992	129,024	133,056	137,088	1,209,126
Additional Crop Costs	79,500	81,690	83,880	86,070	88,260	90,450	92,640	94,830	97,020	99,210	870,503
Total Direct Costs-Growing	223,603	230,965	237,970	245,008	252,076	259,165	266,275	273,405	280,556	287,727	2,574,874
GROSS MARGIN - HARVESTED	255,197	247,835	240,830	233,802	226,772	219,633	212,465	205,214	197,944	190,673	2,213,126
DIRECT COSTS - Grading, Packing & Marketing											
Labour - Grading and Packing	0	0	0	0	0	0	0	0	0	0	0
Packaging	48,792	49,768	50,744	51,720	52,696	53,672	54,648	55,624	56,600	57,576	534,028
Haulage	31,464	32,094	32,724	33,354	33,984	34,614	35,244	35,874	36,504	37,134	344,373
Commission / Royalties / PO Levy	67,032	67,032	67,032	67,032	67,032	67,032	67,032	67,032	67,032	67,032	670,320
Total Direct Costs - Grading, Packing & Marketing	147,288	148,896	150,496	152,096	153,696	155,296	156,896	158,496	160,096	161,696	1,548,722
GROSS MARGIN - SOLD	107,909	98,939	90,334	81,702	73,070	64,438	55,806	47,174	38,542	29,910	664,404
OVERHEAD COSTS											
Labour - Overhead	47,606	49,310	51,014	52,718	54,422	56,126	57,830	59,534	61,238	62,942	571,563
Power & Machinery	12,668	13,068	13,468	13,868	14,268	14,668	15,068	15,468	15,868	16,268	145,224
Administration	67,783	69,139	70,495	71,851	73,207	74,563	75,919	77,275	78,631	80,000	742,205
Property	19,344	19,629	19,914	20,200	20,485	20,770	21,055	21,340	21,625	21,910	210,716
Rent (Notional / Actual)	0	0	0	0	0	0	0	0	0	0	0
Total Overhead Costs	147,301	151,146	155,000	158,854	162,708	166,562	170,416	174,270	178,124	181,978	1,669,709
Establishment Costs / End of Life	193,000										193,000
\$ NET(Annual)	-232,392	-51,974	-64,834	-78,136	-91,847	-105,673	-120,572	-135,660	-150,105	-165,111	
\$ NET(cumulative)	-232,392	-284,366	-349,200	-427,336	-519,184	-624,856	-745,428	-881,088	-1,031,193	-1,196,304	-1,196,304

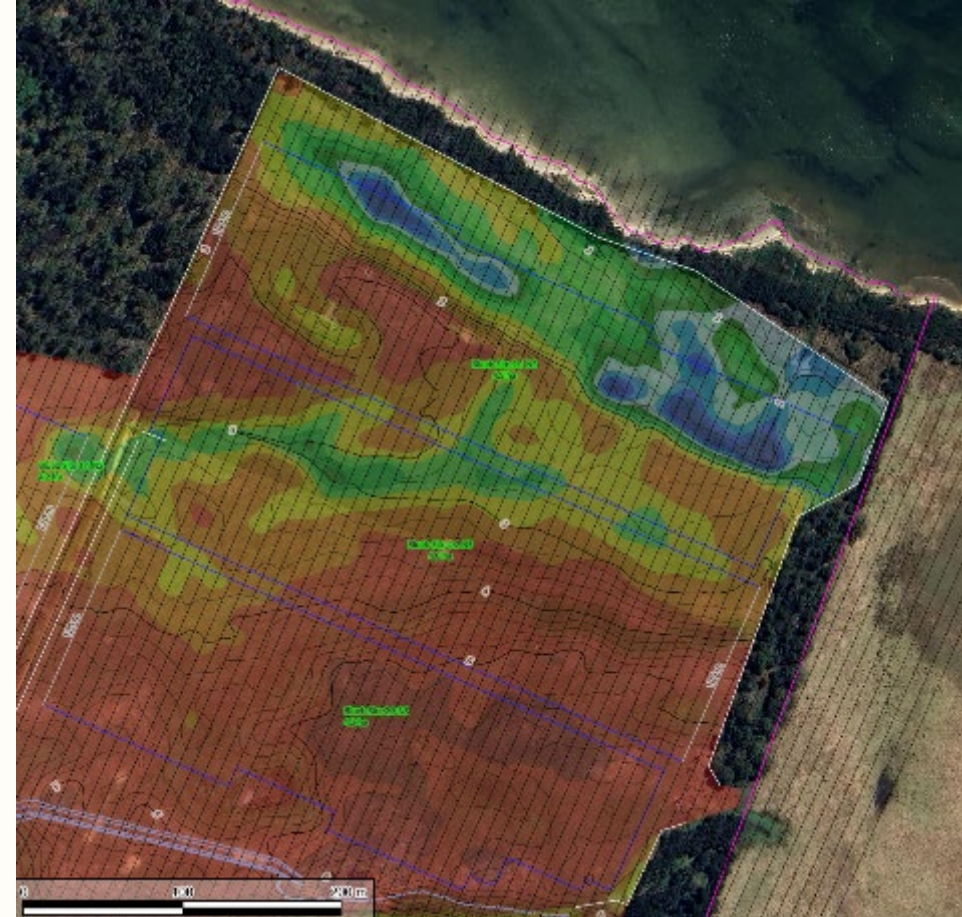
Site preparation: where good farms are won early

Prepare for the next 10 years

Consideration

- **STAFF:** 40% or more of your costs will be spent on labour.
- **Topography** for drainage requirements for rain and substrate run off.
- **Aspect** for optimal sun exposure, frost exposure and **damaging wind directions**
- **Soil type**, even when growing in substrate is important to consider. Your machines will follow the same path for the next 10-15 years. Can the ground hold up.
- **Irrigation infrastructure** and capacity: 1 main line verses 3, main and submain pipe sizes.
- **Future expansion** and how this may impact the site and flow.

Don't Let this happen to you:



Ask early



Site Preparation and Block Preparation.

Design for the person doing the work

- **Ideal tunnel lengths** which can affect picking time in tunnel and tunnel temperatures
- **Headland Size**, allow space for machinery turning and movement.
- **Harvest drop off locations**. Every 10-15 tunnels we step out tablesps back 3m to allow space undercover to drop off pickers fruit.
- **Irrigation pump location**. Ideally in a central location on the farm
- **Block Designs need to consider:**
 - Picker movement
 - Fruit Drop off stations
 - Breaks stations and toilets
 - Machinery movements

Small mistakes can add up:

Small inefficiencies become large costs when repeated thousands of times.



Council planning and approvals

Plan approvals may consume your timeline

- Understand what triggers permits or development applications: Tunnels, dams, roads, sheds, accommodation and traffic changes.
- Allow time for council requirements, environmental planning and information requests. Whilst tunnels are a “temporary structure” Many councils will still require a Development Application and can cause delays.
- Document the farm intent clearly before submitting applications and have a plan or layout.
- Main issues tend to be related to boundary setbacks or screening.

Hidden timeline:

Council approvals do not care about your planting dates.



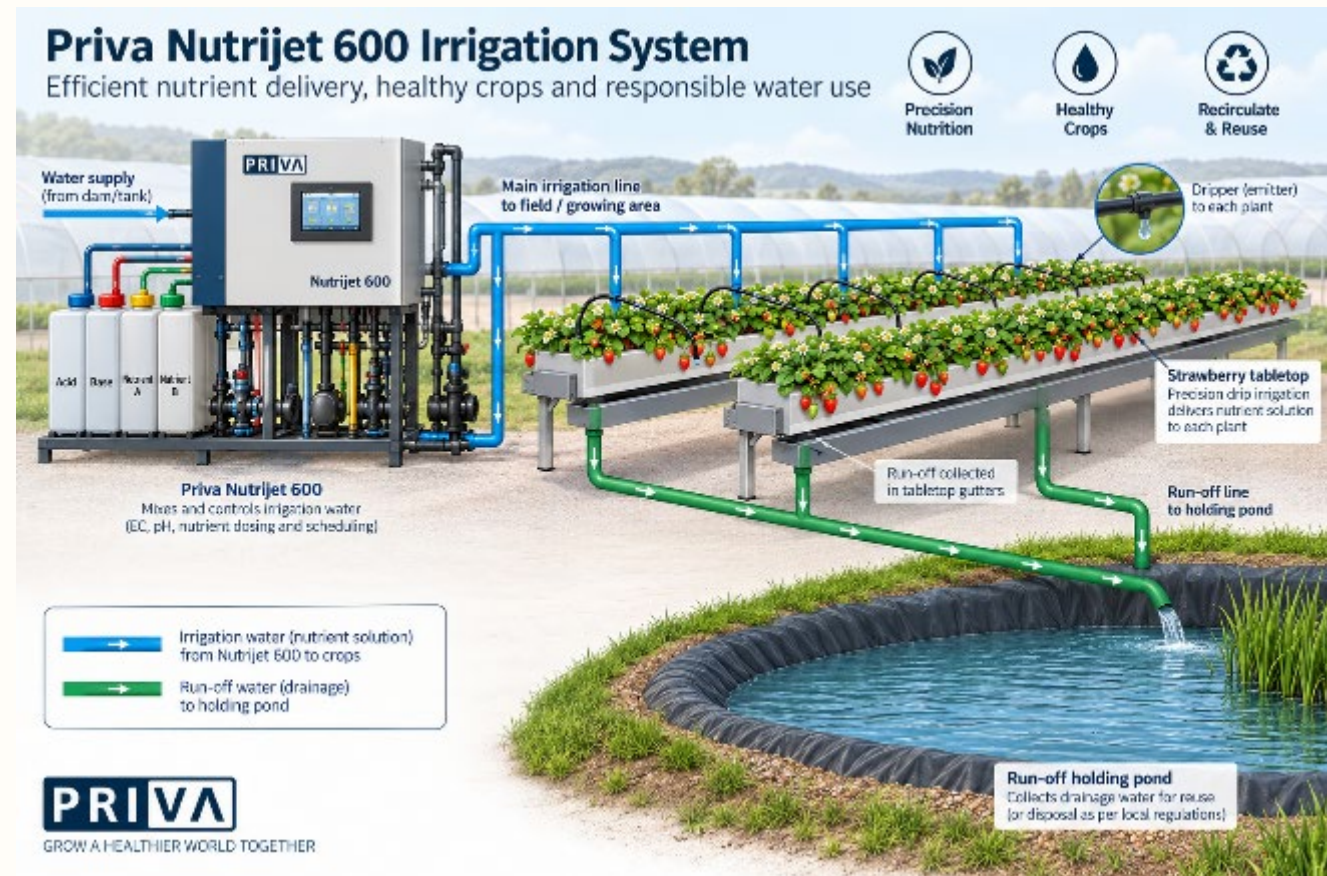
Irrigation, fertigation and runoff

Water is key to substrate production

- Design capacity for peak demand, not average demand
 - How much time does it take to cycle around all valves in a valve group?
- Runoff to be collected, redirected, treated or reused where possible.
- River/dam water may require filtration, testing and ongoing maintenance to ensure drippers don't become blocked
- Ideally each valve or block require run-off monitoring stations to measure nutrient and water usage.
- What is your pump capacity like?
- Water type of substrate makeup are you after, course or fine?

Never assume:

Water quality, pressure and drainage will quietly decide farm performance.



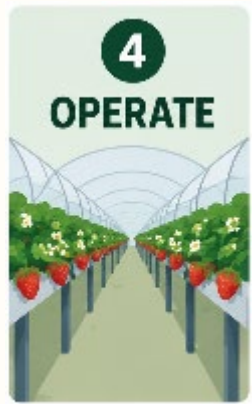
Methods to the Madness

What needs to be ready first

- Systems to create structure.
 - Irrigation protocols + Run off checks. Sensors?
 - Harvest systems will change:
 - New picking trollies
 - Faster picking row completion
 - Packhouse or infield picking?
 - Removing and disposing of previous season's substrate material.
- Future development plans: How do they fit in with current systems?

Rule of thumb:

Plants are not the start of the project — they are the deadline.



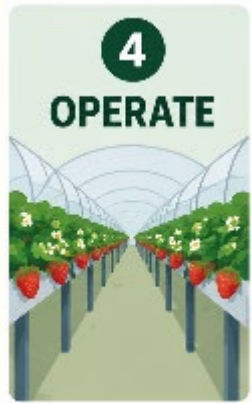
Soil grown to hydroponics

Multiple reasons for making the change

- **Improved:**
 - Pick speed
 - Fruit quality
 - Plant consistency
 - Worker ergonomics
 - No fumigation or soil borne disease
- **What changed:**
 - Fixed growing infrastructure.
 - Water management – Run-off
 - Farm logistics
 - Irrigation management and team to support it
 - Crops are more vulnerable to mistakes.

Lesson:

Changing the production system changes the whole farm — not just the crop.



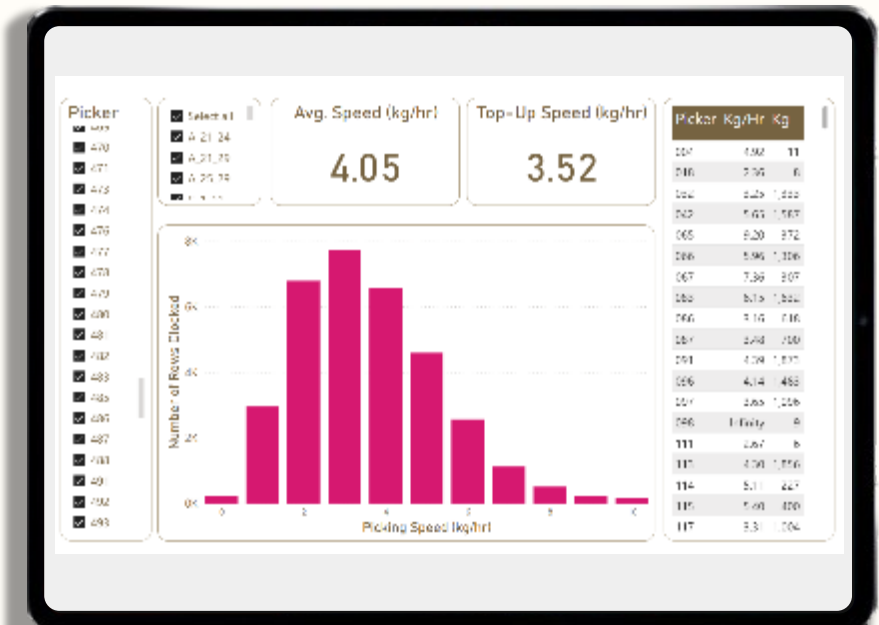
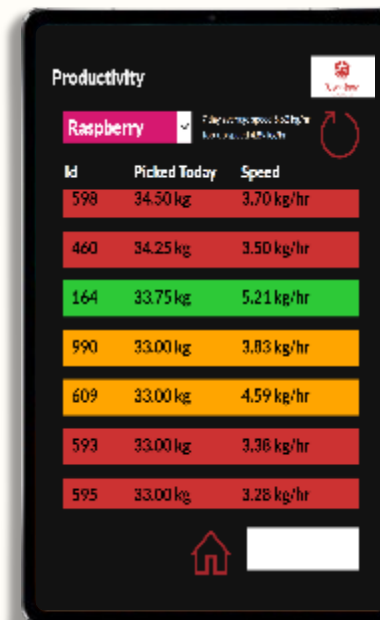
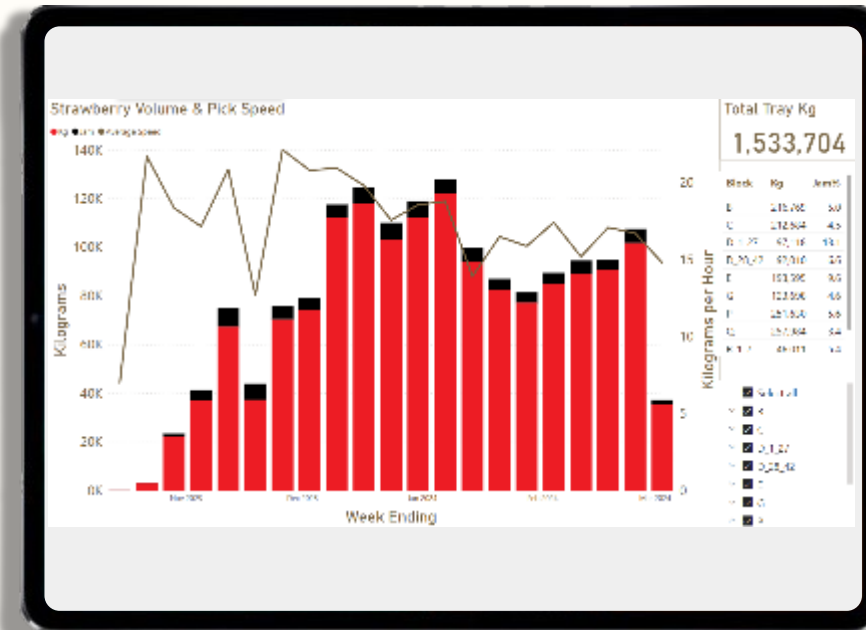
Technology and Data Systems

Success is knowing your numbers

- Data is key and collecting good clean data will help guide sound decision making.
- Tracking labour and productivity is the best place to start as they contribute to your largest cost centre.
- Real time data allows for corrections in real time rather than after the fact.
- Data allows for objective accountability of your team.
- Historical comparisons and future forecasting require consistent data collection.

Dashboards and Analytics:

Data is the key to informed decision making.



Labour Savings via Automation

Design for people and machines

- Automation needs space, turning circles, charging, connectivity and safe crossings
- Thinking the buying an autonomous machine will be the silver bullet is the wrong approach.
- They need a champion in your business for its success.
- What is your use case and does automation really solve your question?

What does the future look like?

Where does your next significant productivity improvement come from?



What I would do differently today

Earlier

Start with crop plan and make the infrastructure fit around it

Today

Start with the system and how does the crop work for labour curves, water usage, roads, cool chain, expansion

Earlier

Optimise individual blocks

Today

Optimise the whole farm flow for the most efficient productivity outcomes

Earlier

Grow the berries that are easiest to manage.

Today

Plan my production around labour demands and availability as well as what can continue to the future bottom line of the business.

Its all about Margin not Yield

Other Potential names for this Presentation

- **Berry Expensive Lessons** — What I Wish I Knew Before Building a Berry Farm
- **Looks Good on a Spreadsheet** — Until You Actually Build It
- **Berry Farming: An Expensive Way to Learn** — What I'd Do Differently Today
- **Digging Holes & Burning Money** — The Art of Developing a Berry Farm
- **Seemed Like a Good Idea at the Time** — Lessons Learned the Expensive Way
- **Berries, Budgets & Bad Decisions** — What Experience Has Taught Me

Measure twice.

Plant once.

The best farm design decisions are the ones you barely notice later.

However, what could be the next change you make be?

Questions

