

Digital harvest control and Maximising profit

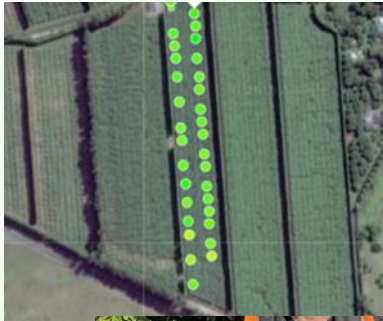
(Using existing information to add value throughout the
supply chain)

John-Paul Praat



groundtruth

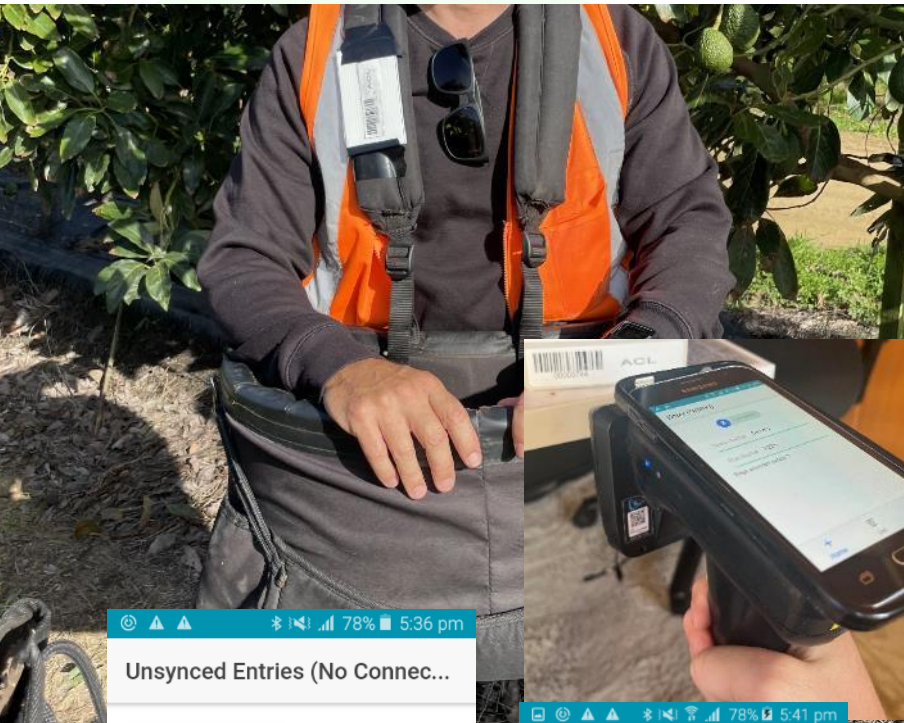
Value is added throughout the supply chain



Mapua Avocados (Far North NZ)

- Start with identifying and rewarding top pickers
- Now produce valuable statistics on
 - Bags (yield) per block
 - Picking efficiency
 - Picker performance
- Has potential to examine fruit number, size, quality and profit at block level

Digital picker and harvest bin tracking



78% 5:36 pm

Unsynced Entries (No Connec...

SYNC RECORDS!

Team Name: Team 1
Bag Id: 00002034
Run Name: 1235
Date: 23/03/2023, 17:33:47

Team Name: Team 1
Bag Id: 00003497
Run Name: 1235
Date: 23/03/2023, 17:33:47

Home List Connections



78% 5:41 pm

Entry (Online)

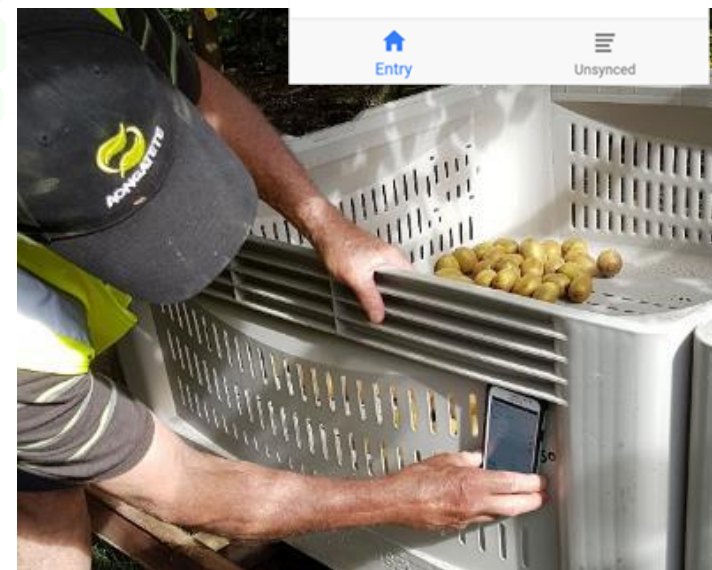
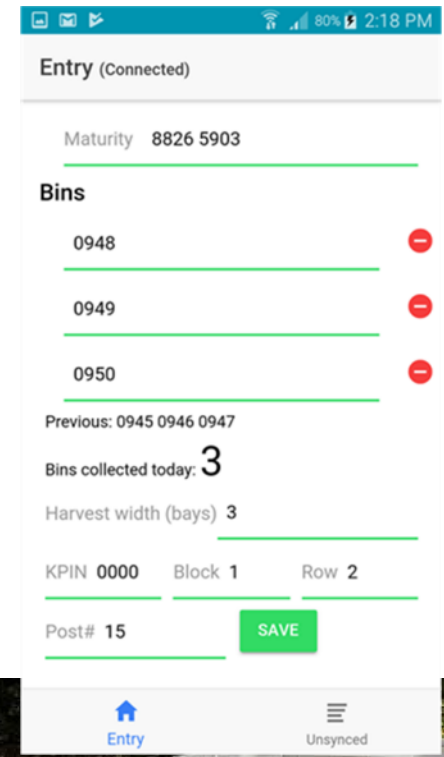
Connected.

Team Name Team 1

Run Name 1235

Bags scanned today: 12

Home List Connections



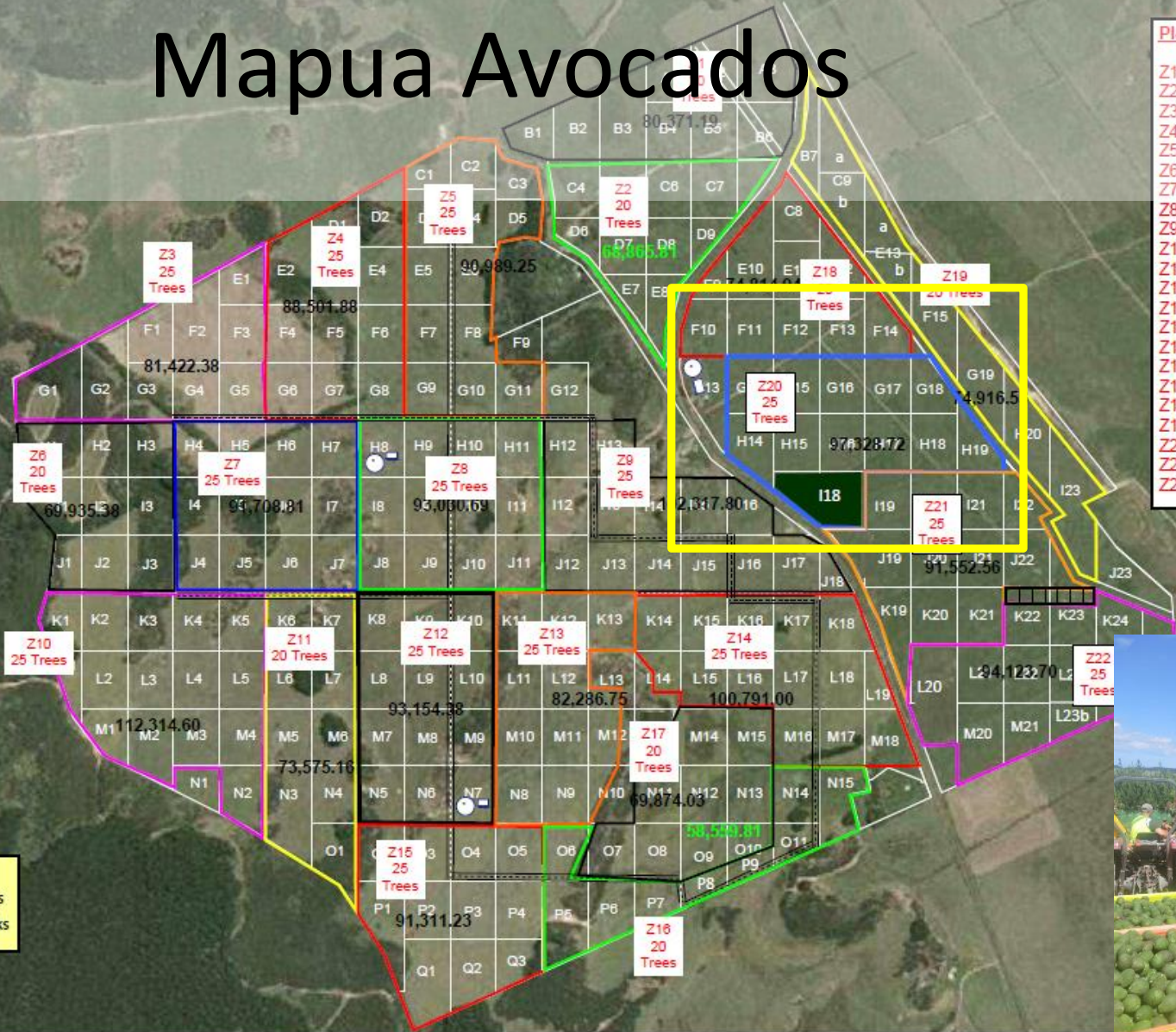
Mapua Avocados



Planting dates

Z1	March 2021
Z2	March 2021
Z3	Dec 2017
Z4	Dec 2017
Z5	Dec 2017
Z6	Dec 2017
Z7	Dec 2017
Z8	Dec 2017
Z9	Feb 2018
Z10	Dec 2017
Z11	Dec 2017
Z12	Dec 2017
Z13	Dec 2017
Z14	Feb 2018
Z15	Feb 2018
Z16	Feb 2018
Z17	March 2022
Z18	April 2018
Z19	April 2018
Z20	Nov 2019
Z21	Nov 2019
Z22	Jan 2020

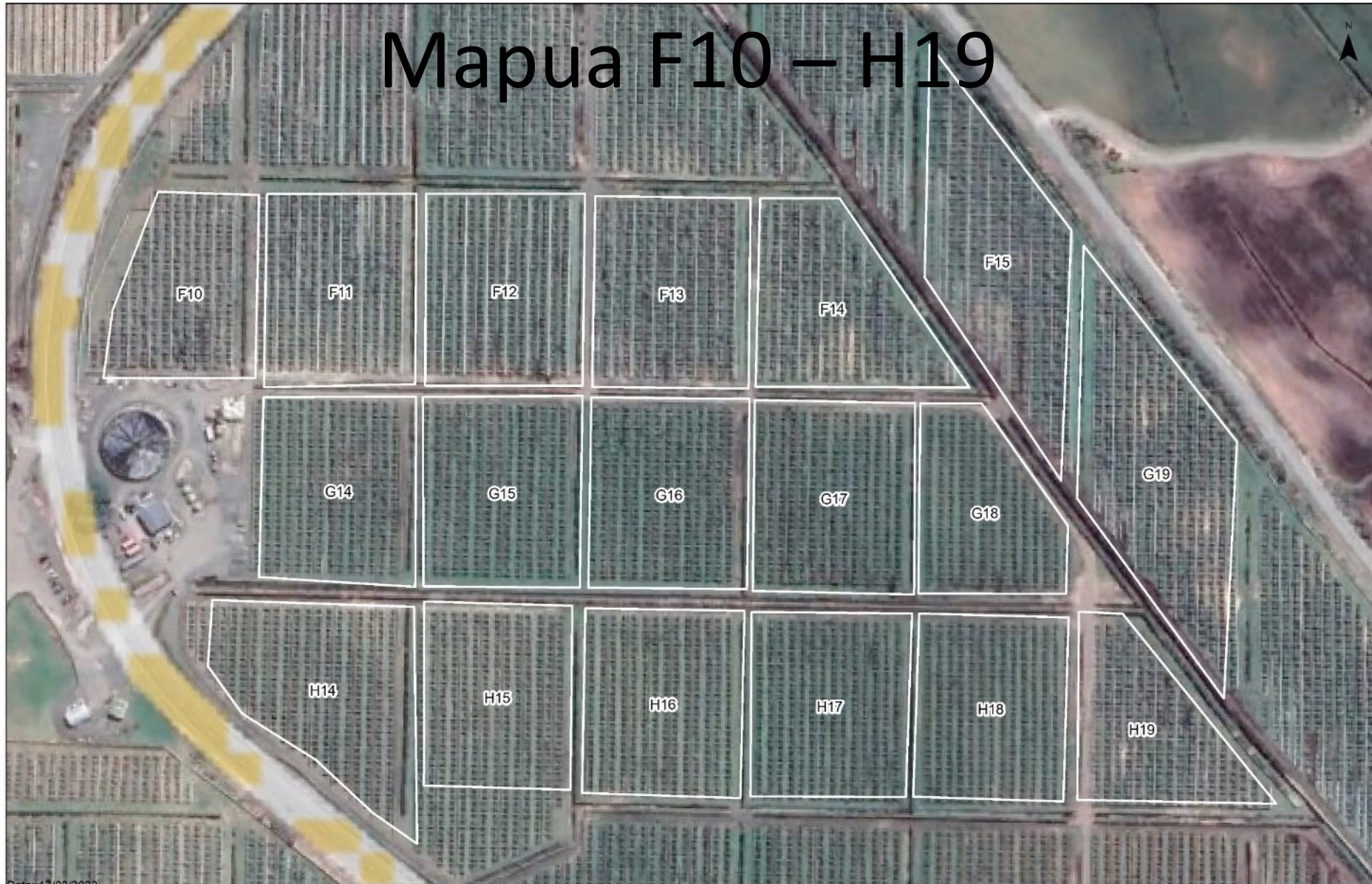
Rooding
 Buildings
 Watertanks



MAPUA ORCHARD Ppin P22990

Scale 1:7000 (A3)

Mapua F10 – H19



Date: 17/03/2023

Mapua Avocados
Sample Area





Date: 17/03/2023

Mapua Avocados
Yield (Bags/block)





Date: 17/03/2023

Mapua Avocados
Yield (kg/ha)



Current Packout report

Size	Pack Type	Count	Units	TCEs	KGs	% of Grade	% of Total
Class 1							
16	B37	28	10	21.5	118	0.61%	0.37%
16	KASL94	16	1013	1013	5571.5	28.93%	17.70%
18	KASL94	18	830	830	4565	23.70%	14.50%
20	KASL94	20	851	851	4680.5	24.30%	14.87%
23	KASL94	23	438	438	2409	12.51%	7.65%
25	KASL94	25	148	148	806.6	4.19%	2.56%
30	INDMB	60	93	186	1023	5.31%	3.25%
36	INDMB	72	8	16	88	0.46%	0.28%
19.53 (avg.)		3,391		3503.5	19261.6	100.00%	61.18%
Class 2							
16	B37	28	15	32.25	177	21.10%	0.56%
20	B21	28	48	71.52	393.36	46.89%	1.25%
24	B21	35	33	48.84	268.62	32.02%	0.85%
20.44 (avg.)		96		152.61	838.98	100.00%	2.67%
Class 3							
16	L47	55	102	343.03	1886.69	19.41%	5.99%
19	L47	65	104	349.75	1923.69	19.79%	6.11%
24	L47	80	88	295.94	1627.74	16.75%	5.17%
30	L47	100	65	218.6	1202.31	12.37%	3.82%
1KG OB	B37	14	154	391.93	2156	22.18%	6.85%
1KG VB	L36	14	66	167.97	924	9.51%	2.94%
24.04 (avg.)		579		1767.22	9720.43	100.00%	30.88%

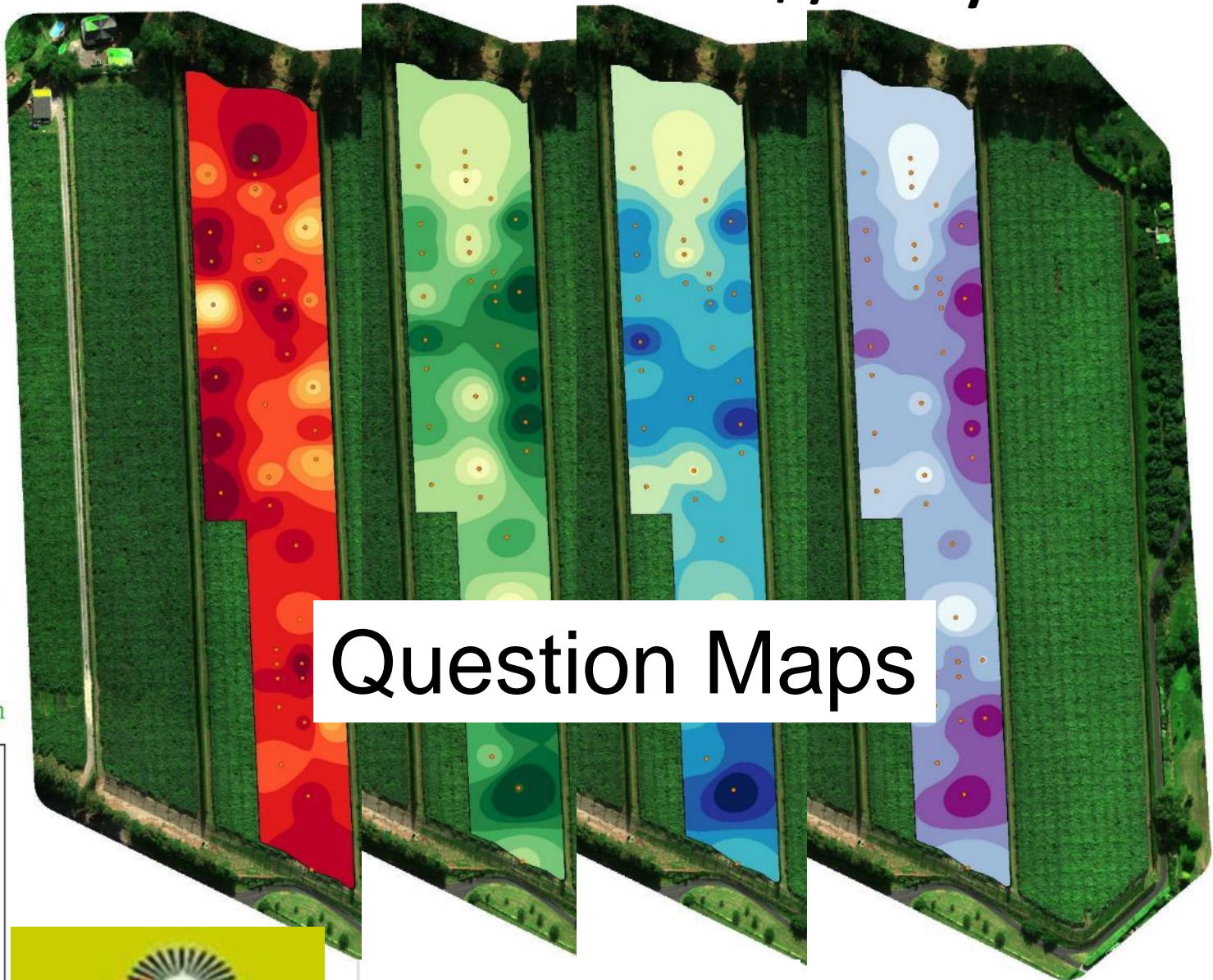
29,819 kgs, 100,287 fruit

Includes at least

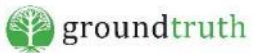
- Size and potentially...
- Shape
- Colour
- Bruising
- Reject Analysis
- Blemish
- Brix
- Dry matter
- Oil content
- Maturity
- Softs



Fruit wt DM Brix \$/tray



Question Maps



Legend

Fruit Weight (g) GA

- ≤ 128
- 128 - 130
- 130 - 131
- 131 - 133
- 133 - 135
- 135 - 137
- 137 - 139
- 139 - 141
- 141 - 143
- 143 - 145



Trays / ha



2017



2018

Gross margin \$ / ha



2017



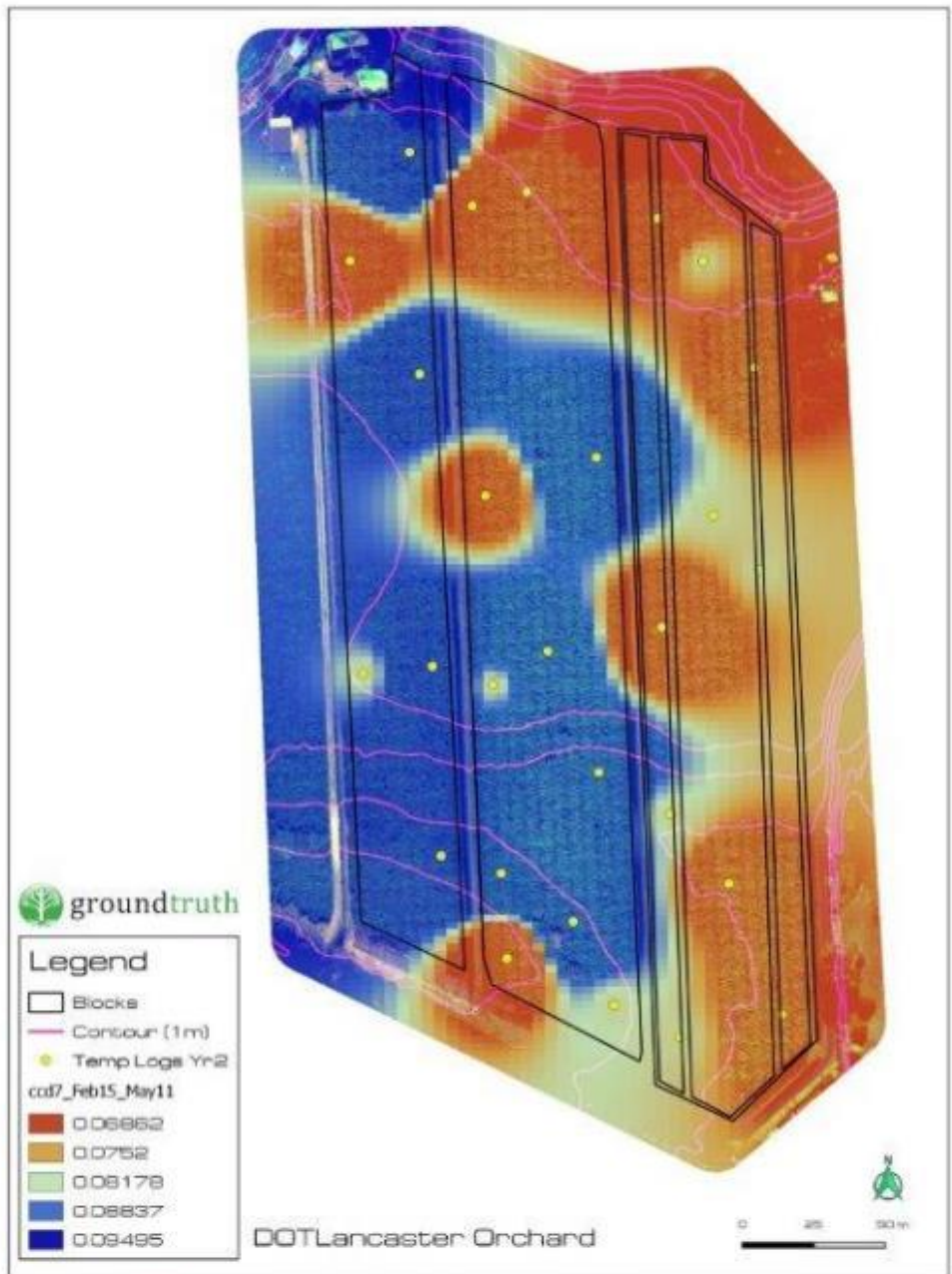
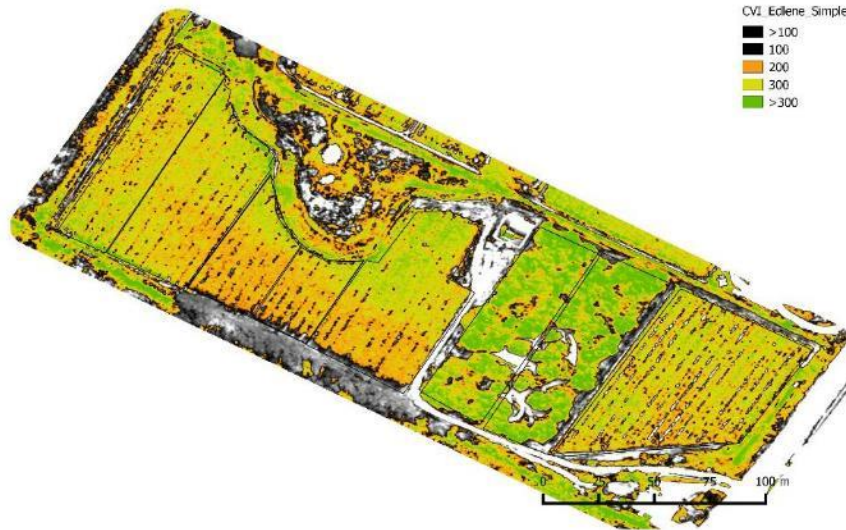
2018

Research on linking fruit quality to environmental data within orchard blocks

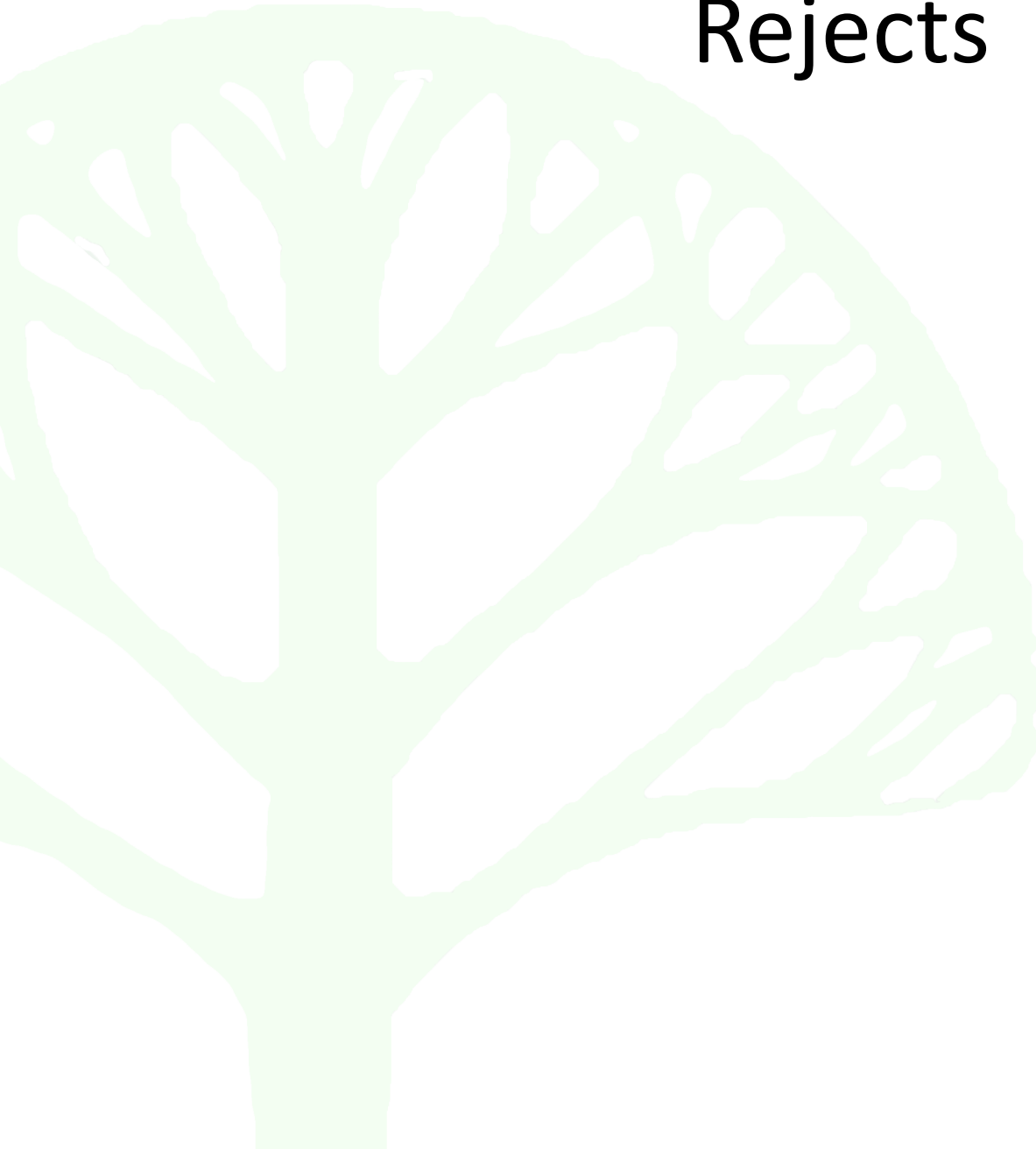


Overlay other environmental spatial data
 eg days cooling below 7C
 (Feb 15 to May 11) or NVDI

Edlene Brix - DRAFT 1



Rejects



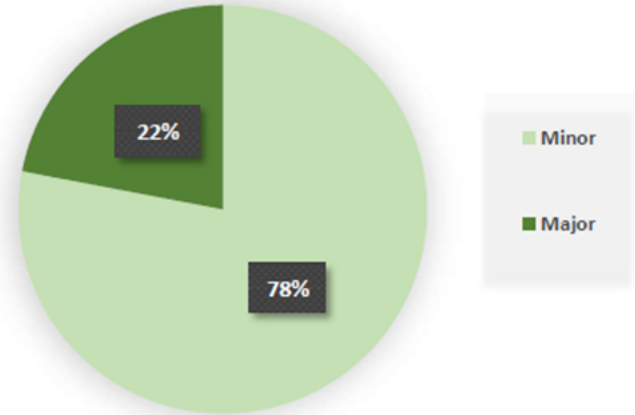
Current Reject Analysis (manual grading)

PPIN:	22990
Packrun:	1337
Sample Size:	50

Grower:	Mapua
Pack Date:	11-Jan-23
QC Name:	Ping Pan
Zone/Block:	M10 Z13, N8 Z13 M11 Z13, M9 Z1 O6 Z16, M10 Z13 N9 Z13

Major Defects:	
Cuts & Punctures	
Clipper Cuts	
Soft Fruit	1
Spray Deposit	
Surface Deposit	
Pollen	
Anthraxnose	
Ridging Height	1
Protuberance	2
Bruising	1
Colour	4
Sunburn Lesion	
Missing Stems	2
Total Major Defects	11
Percent of Sample	22.0%
Minor Defects:	
Scale	
Blemish - Thrips	
Blemish - Leafroller	
Blemish - Wind Damage	32
Lenticel Damage	
Peel Handling Damage	
Misshapen	1
Long Stems	
Mixed Sizing	
Chimeral Fruit	
Variety	
Ridging and Netting area	6
Total Minor Defects	39
Percent of Sample	78.0%
Total Defects:	50

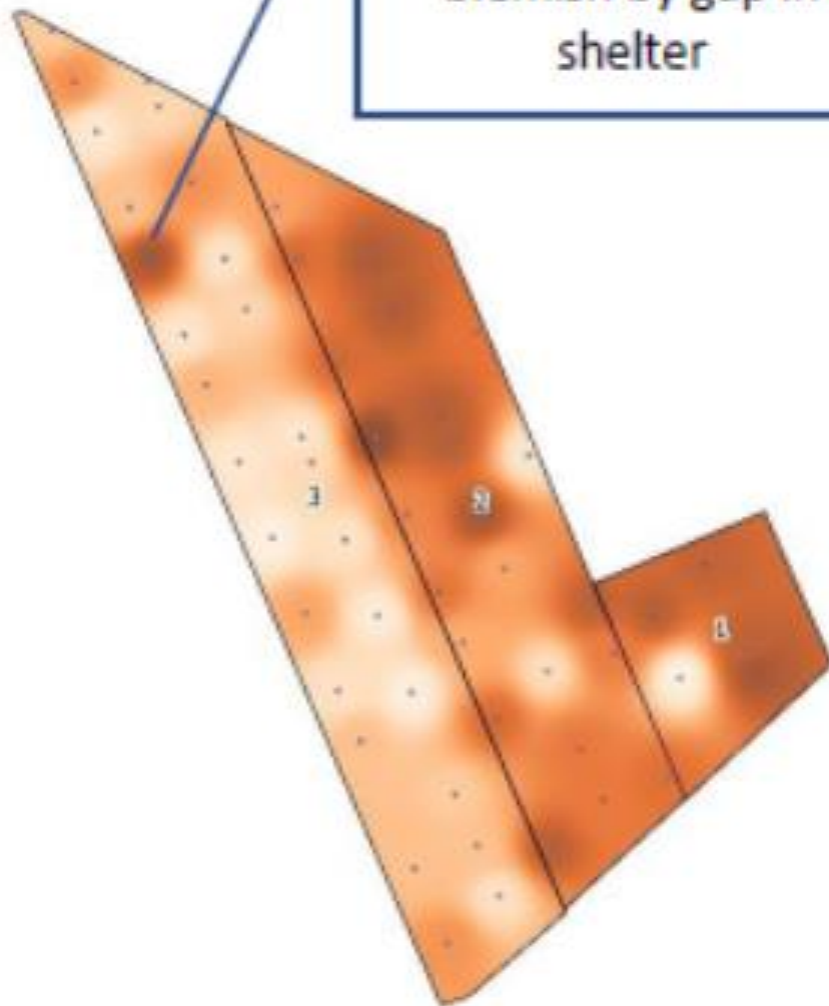
Defects










Comments:

- _____ missing stems
- _____ ground fruit
- _____
- _____
- _____
- _____

High proportion of
blemish by gap in
shelter



Legend

-  Blocks
-  Bin Location 2020
- Blemish 2020
 -  6%
 -  10%
 -  14%
 -  18%
 -  22%

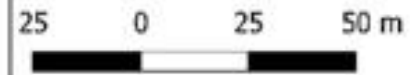
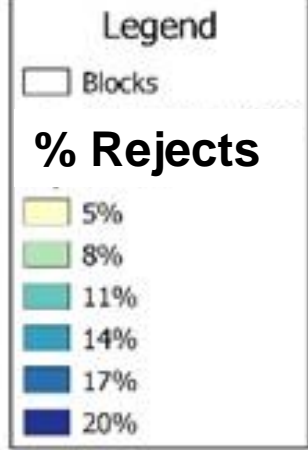
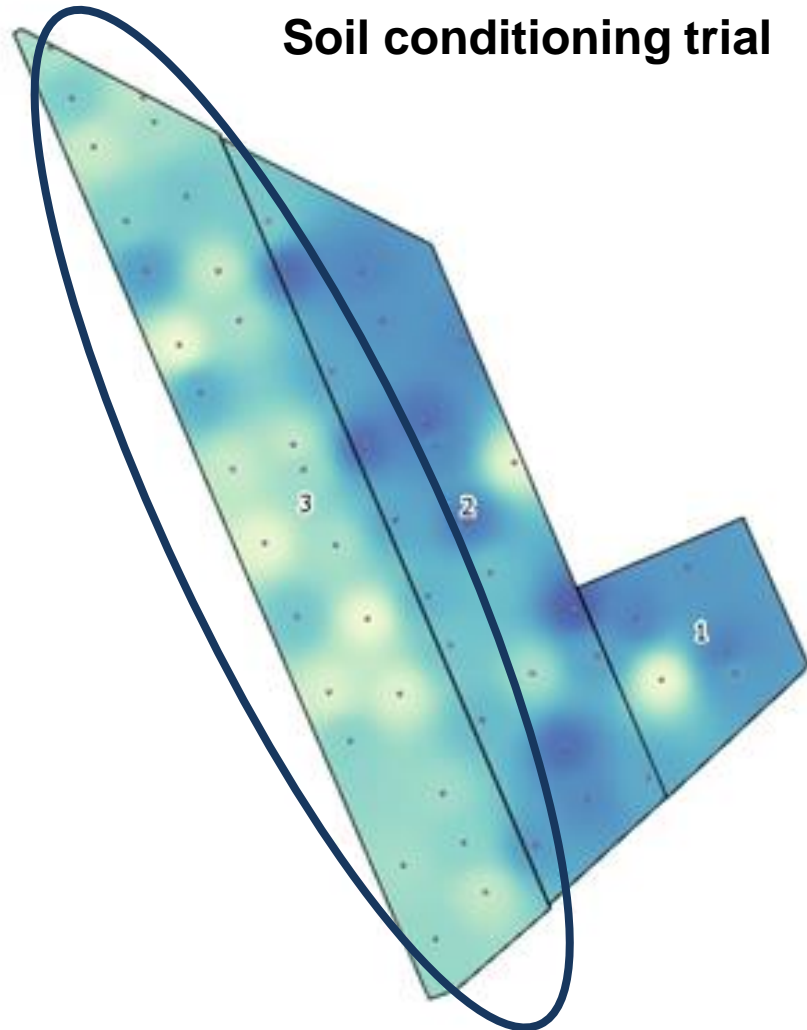


Scale at A4 1:1,500

Date Produced: 06/02/2021
D.J. Gillgren



Soil conditioning trial



Scale at A4 1:1,500

Date Produced: 06/02/2021
DJ Gillgren



And, possibly most excitingly....

Where did
the trays
come
from?

Separate each pack number by a space

Pallet Number

43195294

Apply



Summary

- Increase harvest efficiency
- Maximise profitability
- Enables responsive logistics
- Facilitate full traceability of fruit



Thank you

Gracias

Have lots more slides, contact me for an
upcoming more in-depth online seminar

(jp.praat@groundtruth.co.nz)