10th WORLD AVOCADO CONGRESS

New Zealand 2023

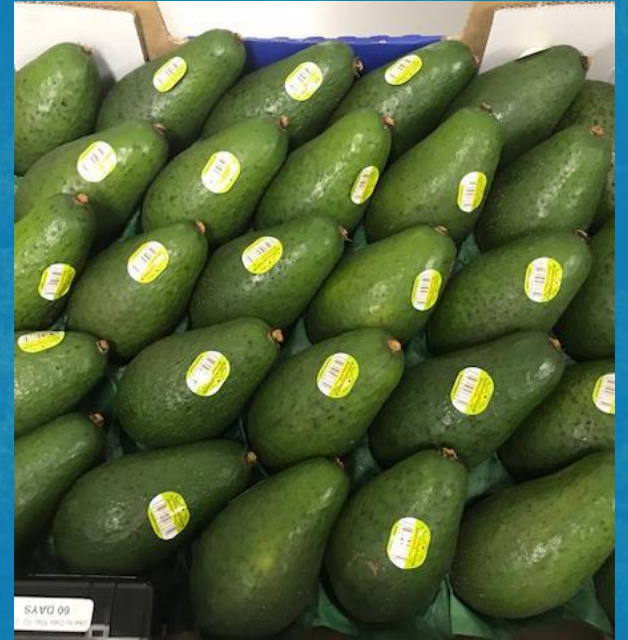10th WORLD AVOCADO CONGRESS
NEW ZEALAND 2023

wacnz2023.com

2-5 April 2023
Aotea Centre
Auckland, New Zealand

In this presentation…

Sampling

The findings

What changes industry made

Rot prevention strategies

Time for questions

179 supply chains monitored over 4 years

Collected data
- Practices
- Temperature data
- Fruit quality

Reviewed data with growers identifying areas for improvement and training

What is the Aus quality standard?

90% or more of fruit must have <10% damage

Fruit quality reports to pack sheds

SAQ Report SC33: Soft ripe Avocado Quality Report

Form Updated: 24th July 2020		
Grower or packer name and address		
Batch number		Batch 1
Packed on date		18/03/2021
Assessor		Terry Rudge
Fruit retrieval from ripener (date and time)		1/04/2021
Assessment date		4/04/2021
Other comments		Assessed at the point where fruit was about to decay rapidly. Many pieces had rots in the skin that had not quite penetrated the flesh. SER when present was barely detectable. One piece had advanced bacterial soft rot.

Fruit No.	NIR dry matter (av of 2 readings)	Turoni firmness (av of 2 readings)	Nodule damage	Physical damage	Sunburn	Chilling injury	Other specify	Stem End Rot (%)	0% Perfect	1-5% of flesh	6-10%	11-15%	16-20%	>20% specify	Vascular browning	Diffuse discolouration	Other specify	A record	Rot serverity
e.g.	27	46	Y					5%						30%				TRUE	35.0%
1	24.3	26.1							Yes									TRUE	0.0%
2	25.1	21.5							Yes									TRUE	0.0%
3	23.2	26.2								Rot								TRUE	3.0%
4	25.0	34.1							Yes									TRUE	0.0%
5	23.8	31.1							Yes									TRUE	0.0%
6	24.4	30.7						1%										TRUE	1.0%
7	23.3	28.0								Rot								TRUE	3.0%
8	25.7	33.6								Rot								TRUE	3.0%
9	23.7	22.9									Rot							TRUE	8.0%
10	24.7	29.9									Rot							TRUE	8.0%
11	24.4	30.5															Stings	TRUE	0.0%
12	25.4	28.1							Yes									TRUE	0.0%
13	27.1	28.0	Y						Yes									TRUE	0.0%
14	23.9	25.0															BSR	TRUE	0.0%
15	24.2	32.0							Yes									TRUE	0.0%
16	24.8	29.5							Yes									TRUE	0.0%
17	24.0	31.0								Rot								TRUE	3.0%
18	26.6	20.2							Yes									TRUE	0.0%
19	23.3	31.2						1%		Rot								TRUE	4.0%
20	24.0	26.5							Yes									TRUE	0.0%
21																		FALSE	0.0%
22																		FALSE	0.0%
																			1.7%
Average	24.5363	28.305																	
STDEV	1.01457	3.72941										% fruit with >5% rots:		10.0%	TRUE				

Temperature (°C) vs DateTime (AEST timezone - UTC+10:00:00) — with annotations: Depart pack shed, Arrive at Melbourne wholesaler, Fruit retrieval.
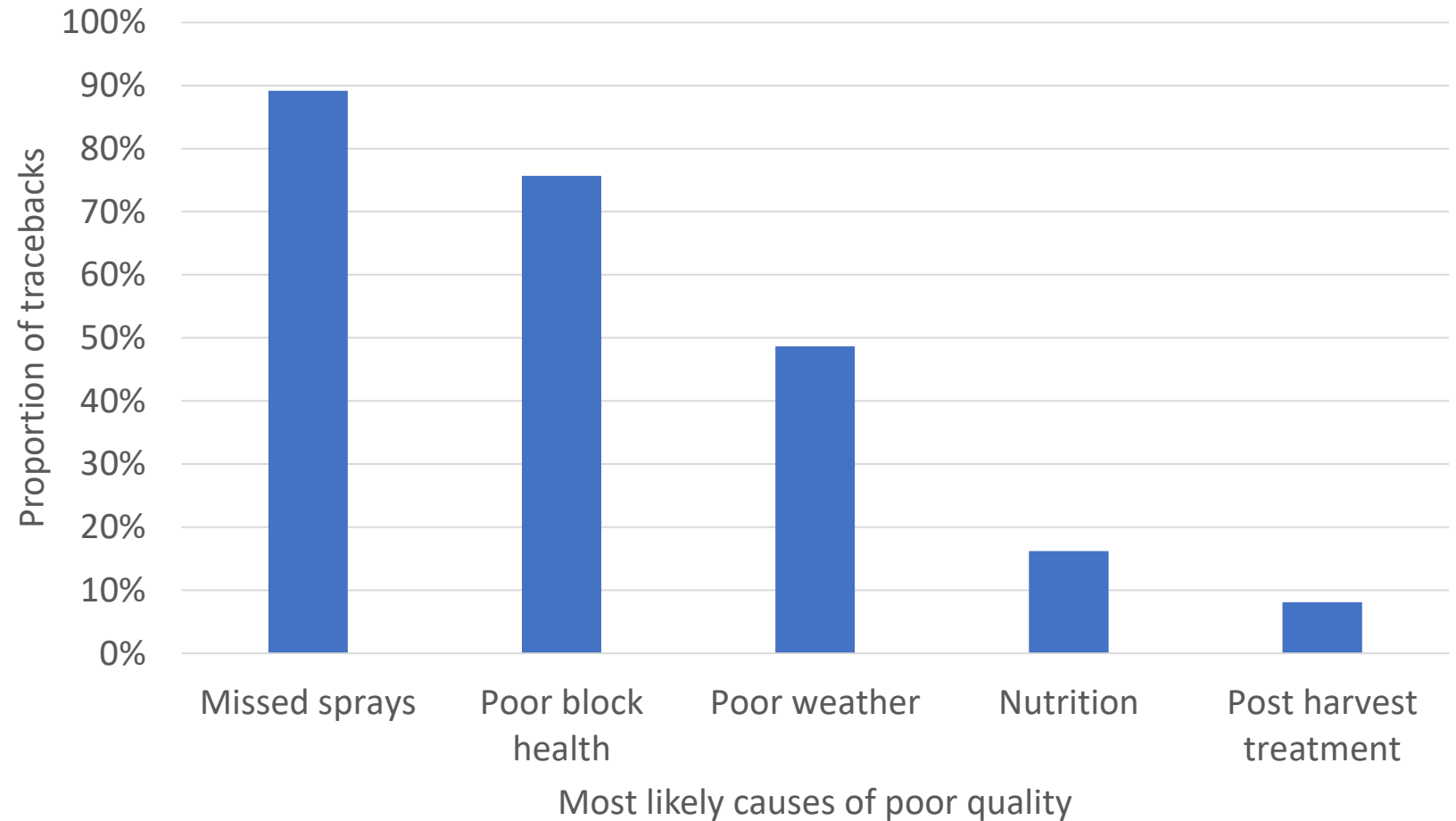
Variability in grower practices

Root cause analysis using tracebacks

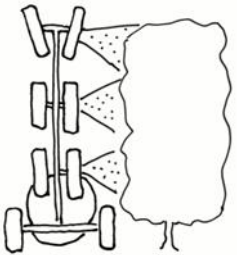Those supply chains not meeting the industry standard were investigated using tracebacks

What can growers do about this?

| Issue	Best practice within your control
Missed sprays	Plan when coppers and azoxystrobins are likely to be needed each year, but then refine the timing around the weather
	Monitor rainfall probabilities daily to time your sprays
	Ensure flexibility in staffing to be able to spray when needed
	Have machinery that can spray the whole orchard on short notice
	Ensure sprayer coverage (for each block with different tree size and shapes) and sprayer calibration is checked at least annually

What can growers do about this?

Issue	Best practice within your control
Poor block health	Plan a program of Phytophthora treatment
	Use mulch
	Mound rows and select suitably drained soils
	Ensure good irrigation management
Poor weather	Ensure good farm layout for drainage
Nutrition	Plan amounts and timing of application of N, Ca and other nutrients
	Monitor leaf, soil and fruit analysis results
Post harvest treatment	Use the best available postharvest fungicide or treatment

maximum excavation 20 cm

soil graded down slope

natural ground level
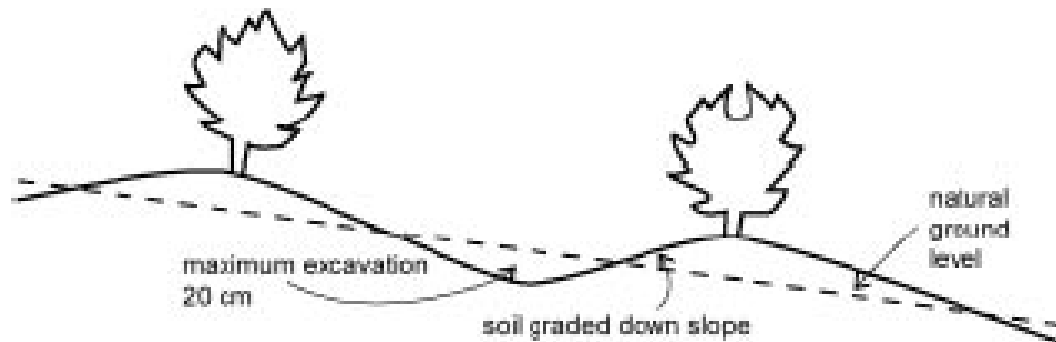
What changes industry actually made

- Spray programs and equipment set-up
- Tree health / phytophthora
- Postharvest fungicides and their application
- Fertiliser programs
- Monitoring the pack-shed departure temperatures
- Better feedback on the quality reaching the consumer
- Exporters more aware of fruit quality risk

Rot prevention strategies

Risk factors

Orchard environment /rain
(affected by production district)

Fruit robustness

Tree habit

Temperatures & rain at harvest

Evenness of ripening
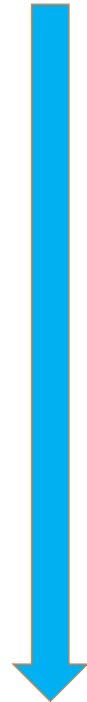
Risk management / mitigation

Spray program and coverage (copper & azoxystrobin e.g. Amistar®)

Tree age, health & nutrition (N:Ca)

Canopy management

Handling & postharvest treatment (Graduate A+™ or Sportak®)

Managed fruit maturity (DM), temperatures, ripening & fruit age

Incidence, severity and speed of appearance

Some video resources

Fruit assessment
https://www.youtube.com/watch?v=Pk-yzYzzrjA

Sprayer selection
https://www.youtube.com/watch?v=CgblcOGgpXU

Spray coverage
https://www.youtube.com/watch?v=tkKBJFZUy1k

Sprayer calibration
https://www.youtube.com/watch?v=QZSCRlCImW0
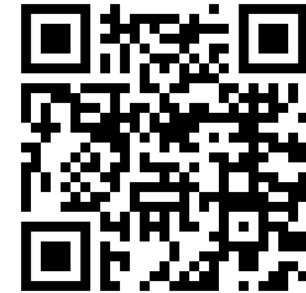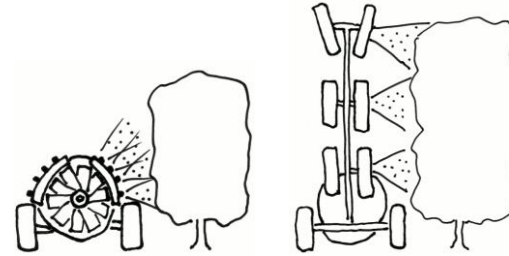
CALIBRATION FORMULA

Calibration volume (L) = Actual (L) applied in the 100 m calibration area

Row width (m) = Row width (m) in calibration area

$$\text{Volume applied in L/ha} = \text{Calibration volume (L)} \times \left[\frac{10,000}{100 \times \text{Row width (m)}} \right]$$

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Project support staff

2-5 April 2023, Aotea Centre, Auckland, New Zealand | wacnz2023.com

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Questions

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