Benchmarking and Research Update

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PISTACHIO INFORMATION AND TECHNOLOGY (PIT) GROUPS (JUNE 12, 2025)

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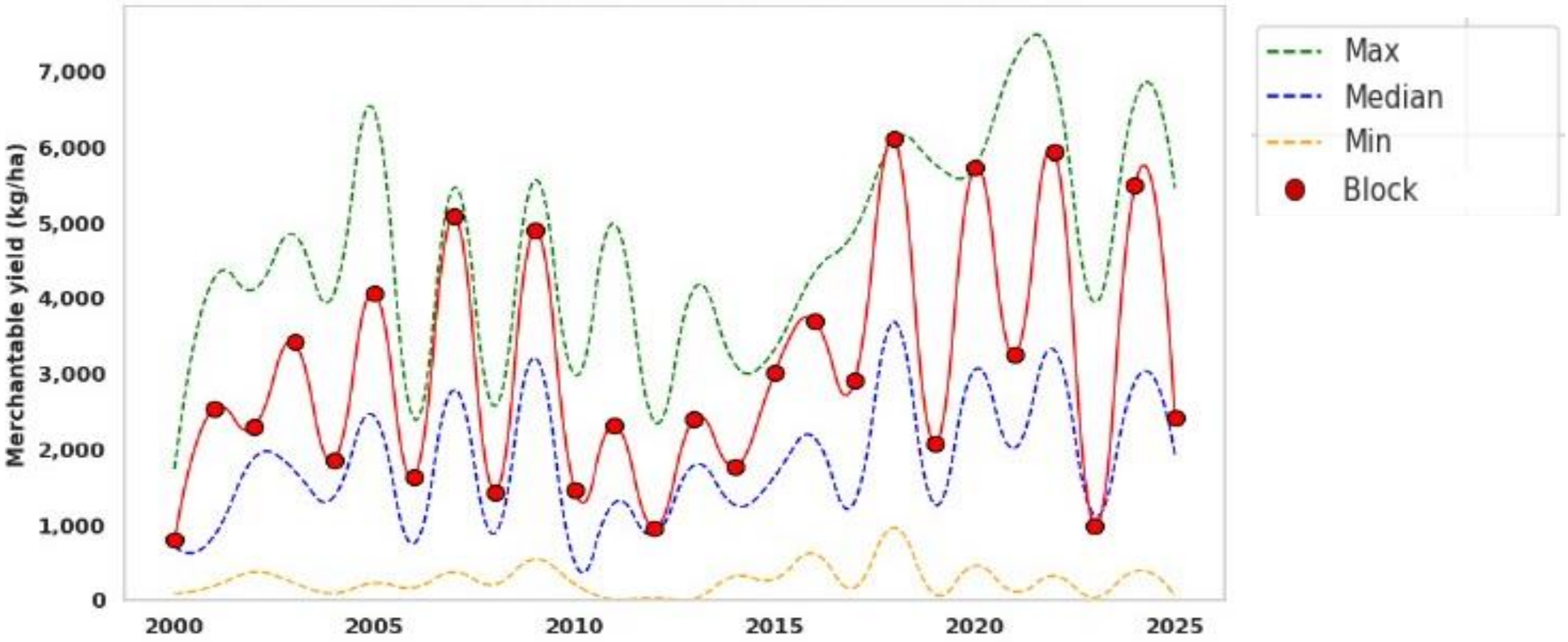
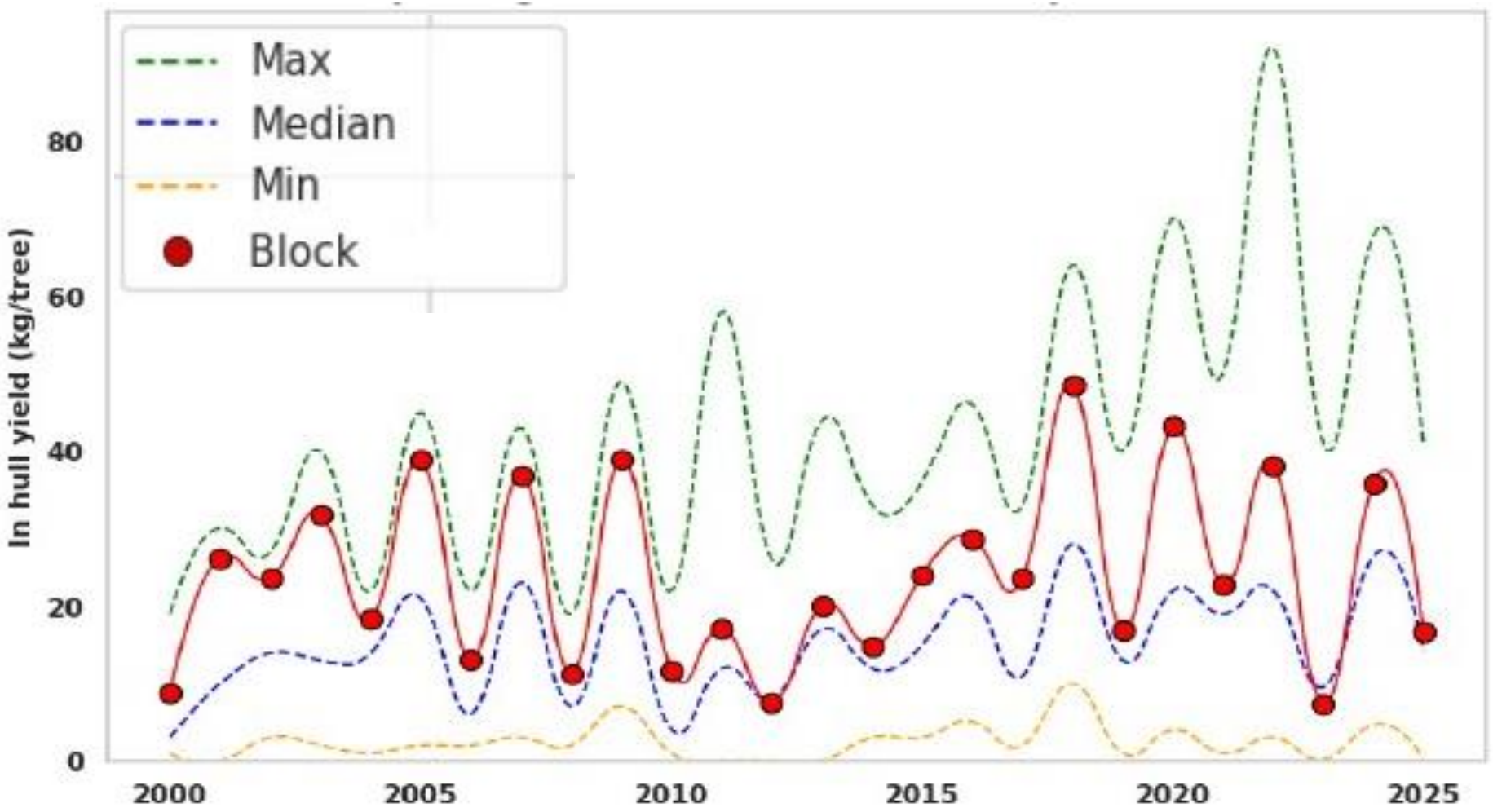
Benchmarking 2025

Mature trees (above 12 years)



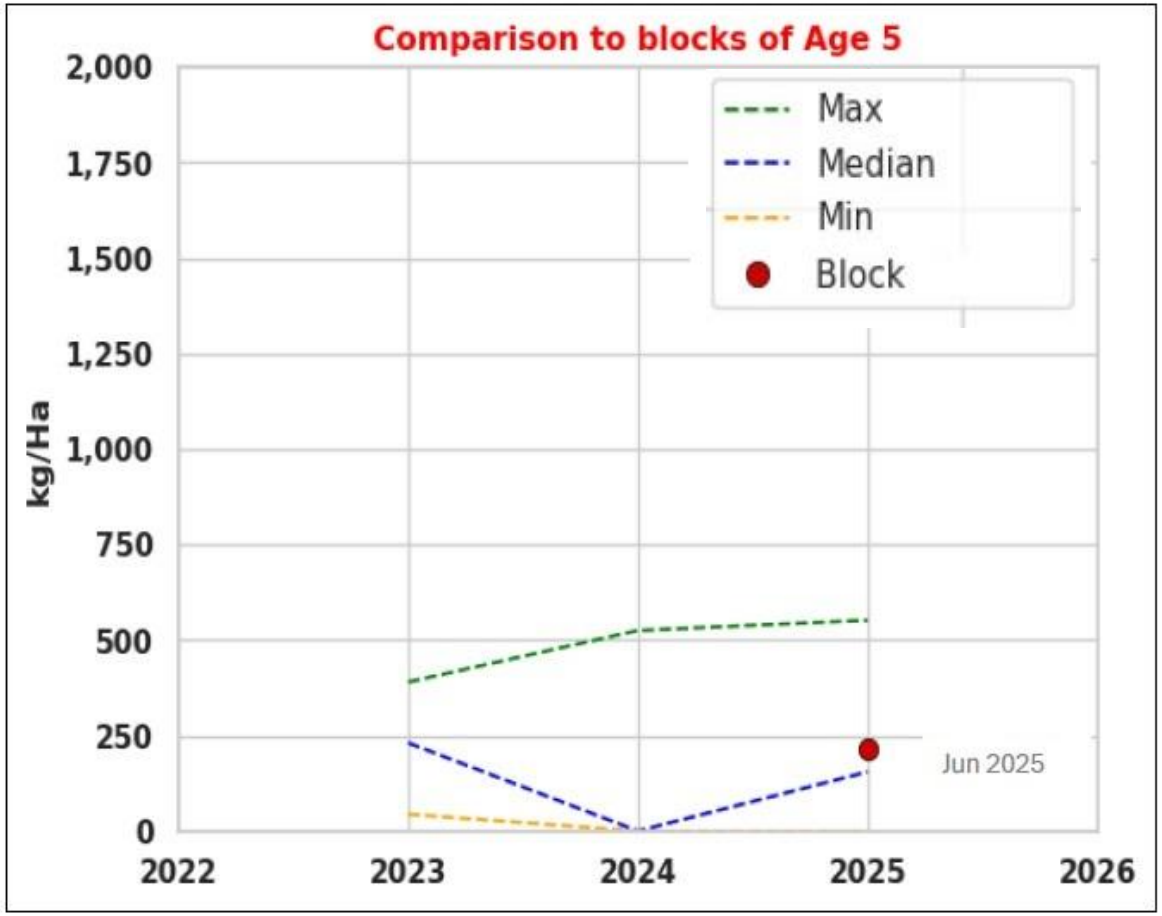
Mature trees (above 12 years)

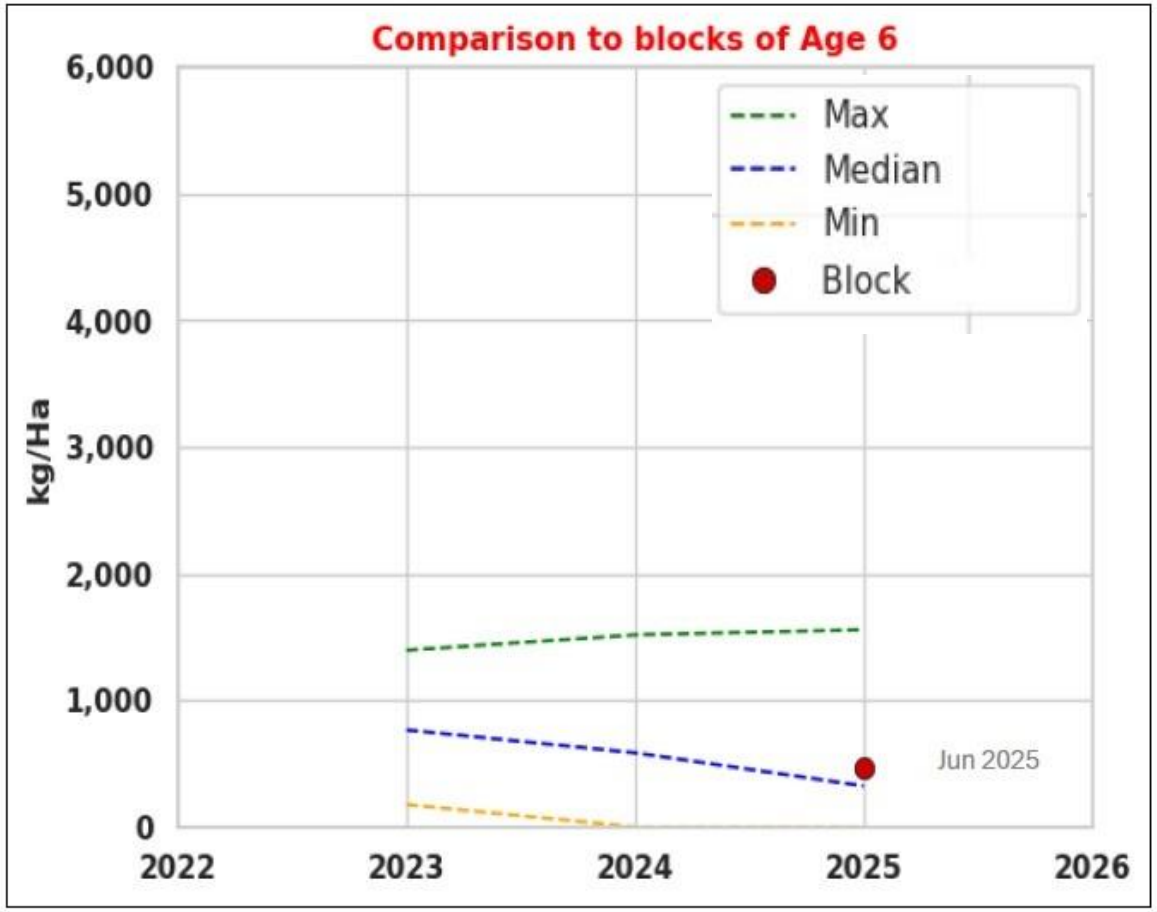


Mature trees (12+ years) yield

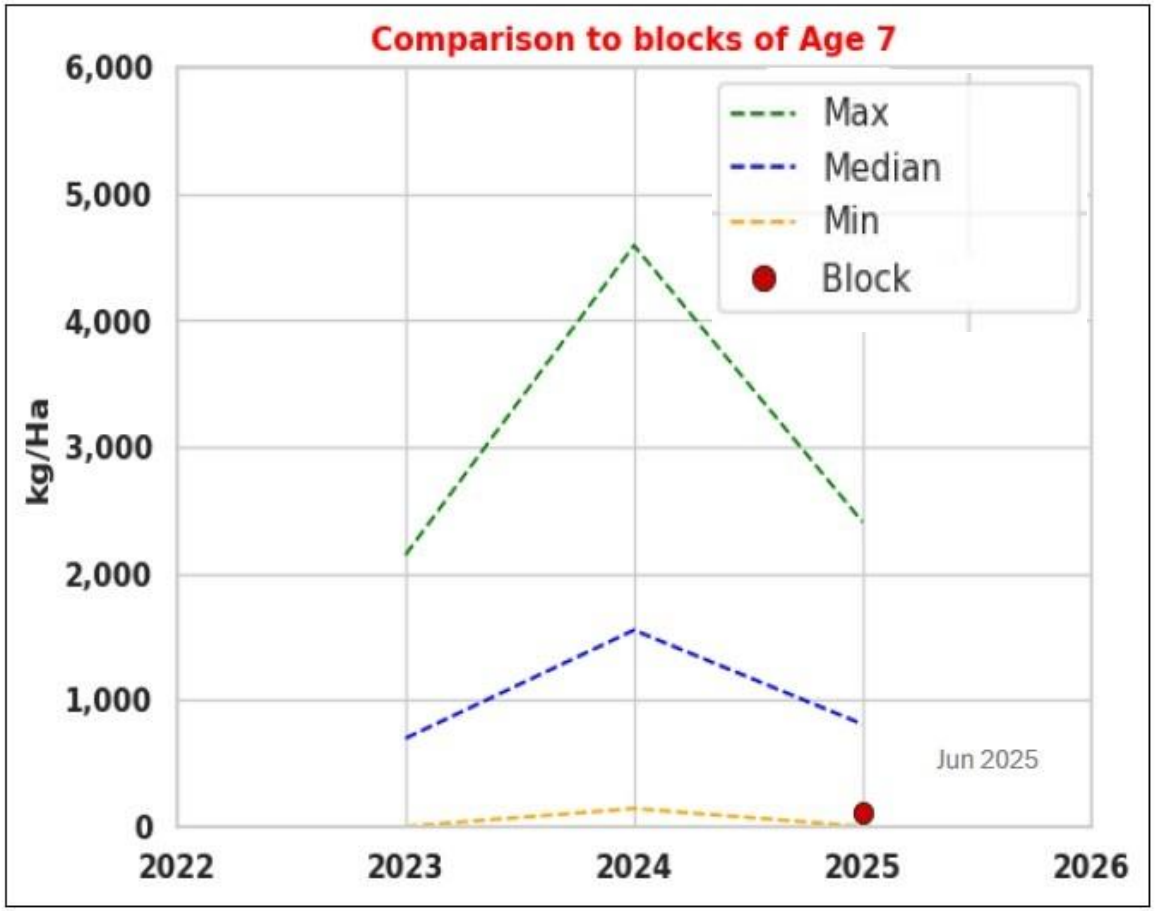
Year	Merchantable yield (Kg/ha)			In hull yield (kg/tree)		
	Maximum	Median	Minimum	Maximum	Median	Minimum
2023	3,940	1,120	33	41	9.5	0.2
2024	6,612	2,889	378	68	26	5
2025	5,455	1,927	47	41	14.35	0.3

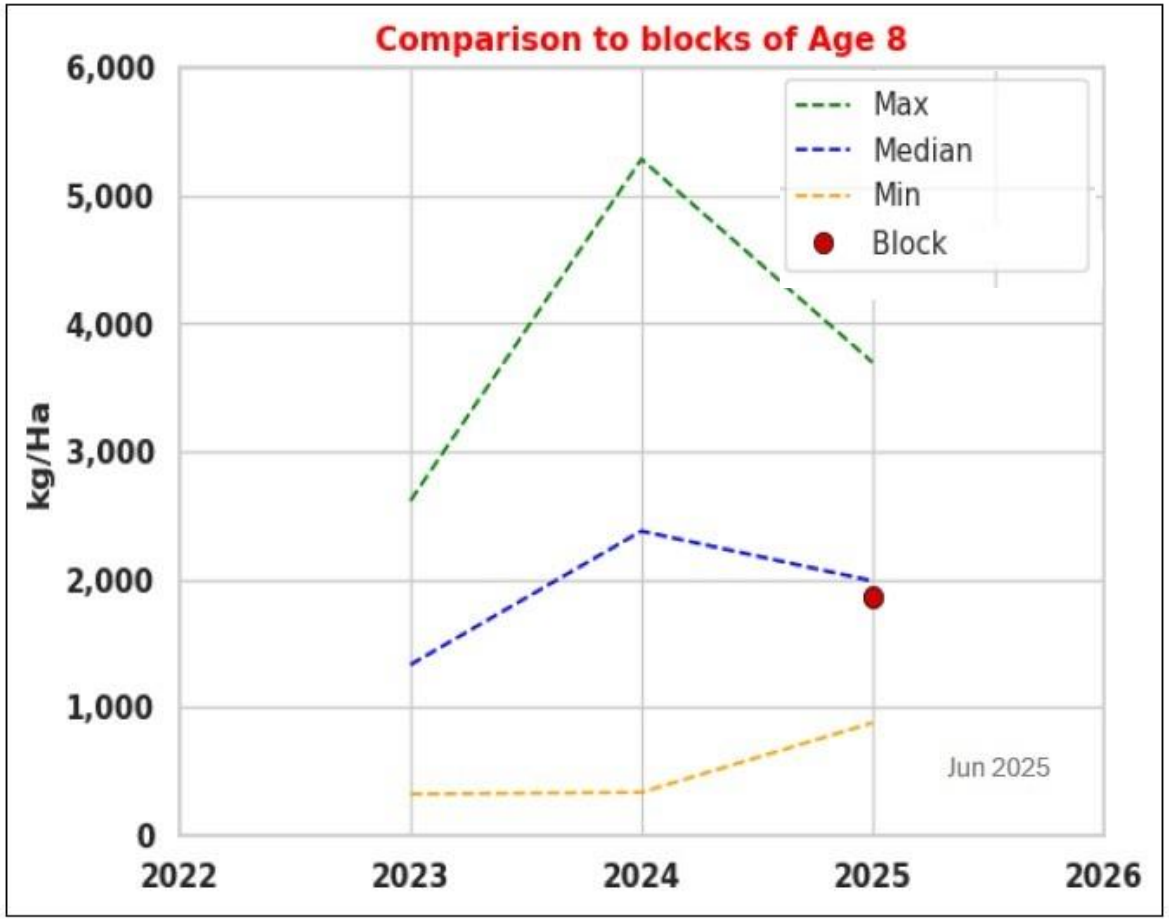
Young trees (5-6 years)



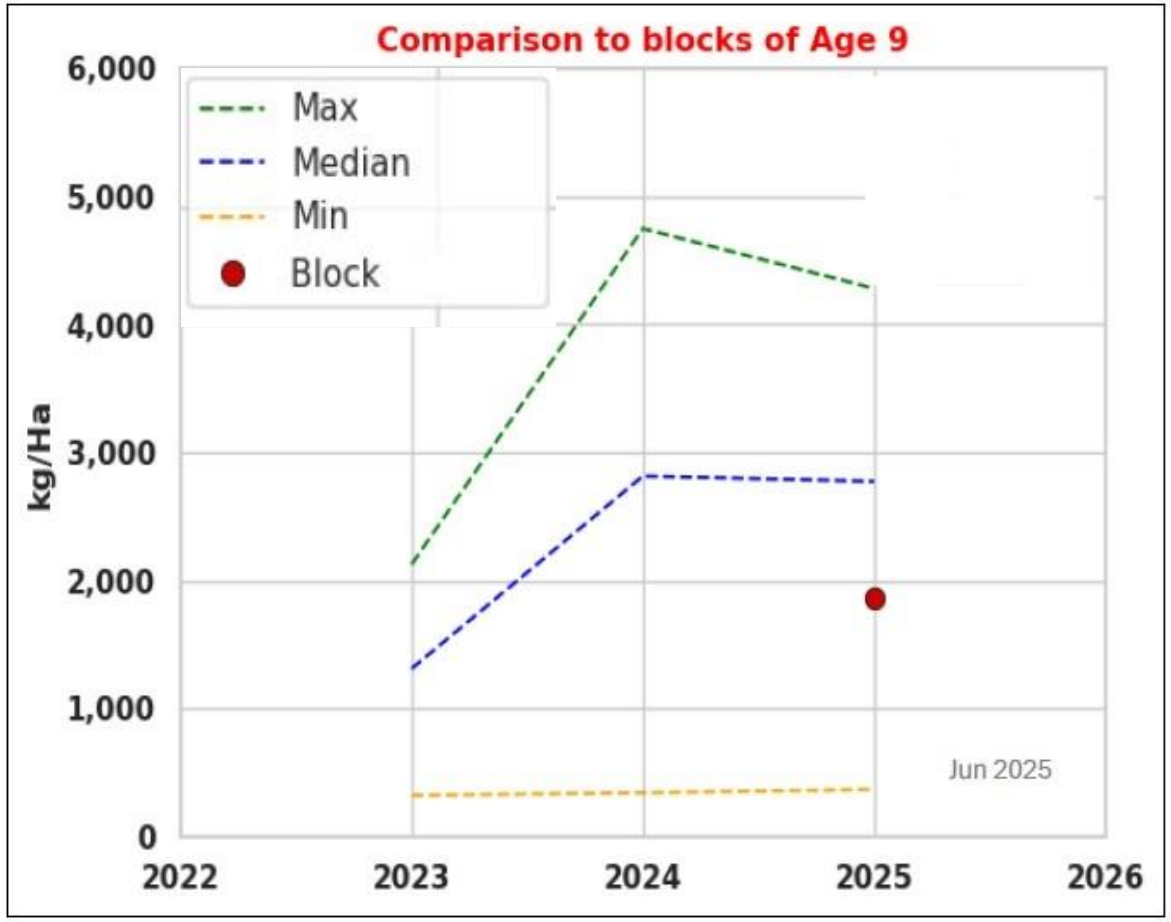


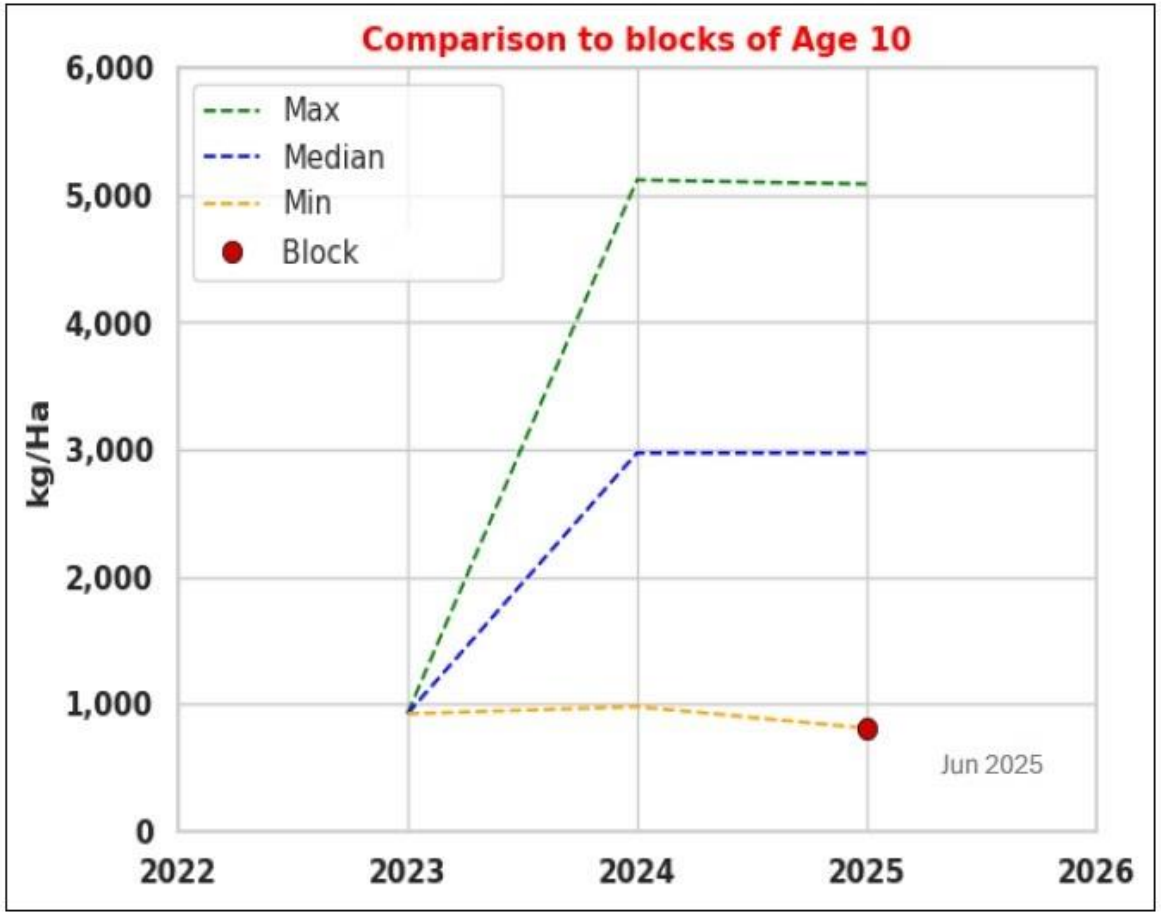
Young trees (7-8 years)



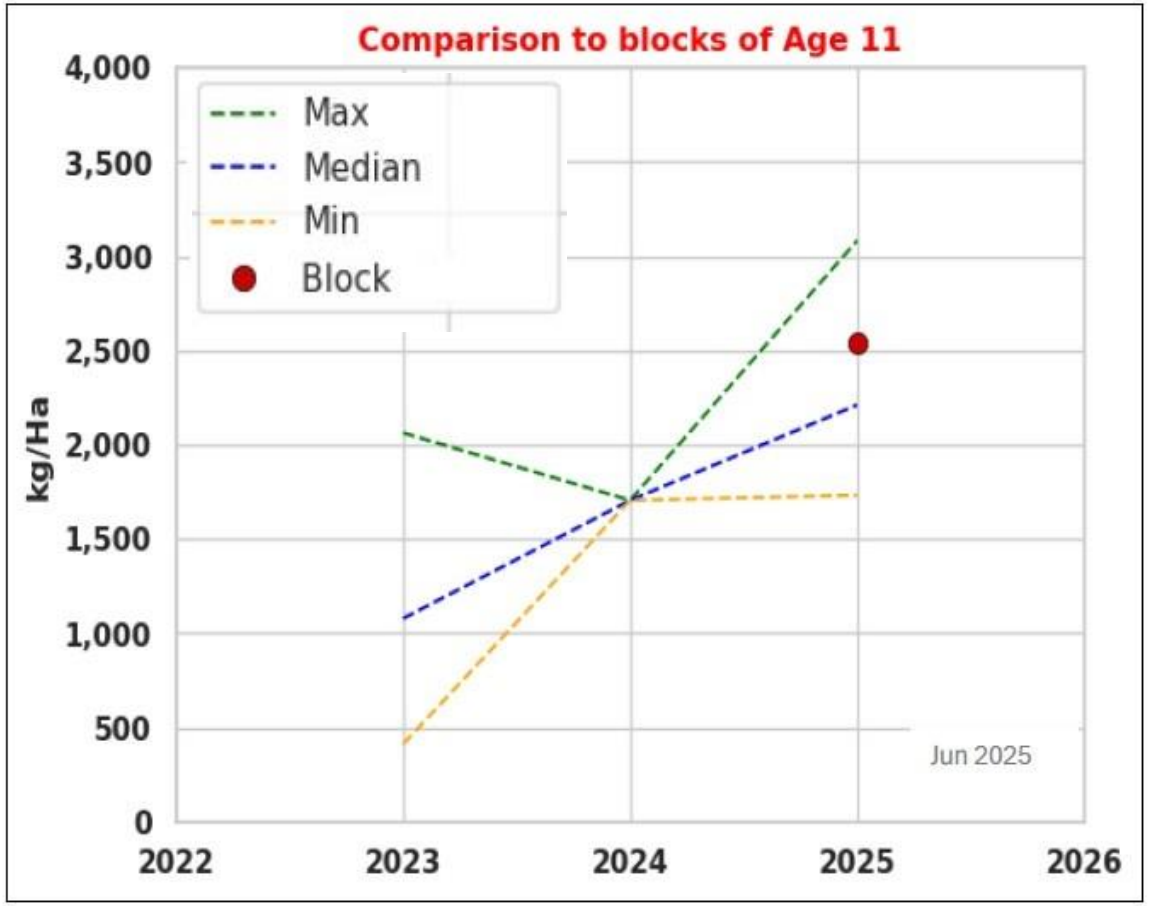


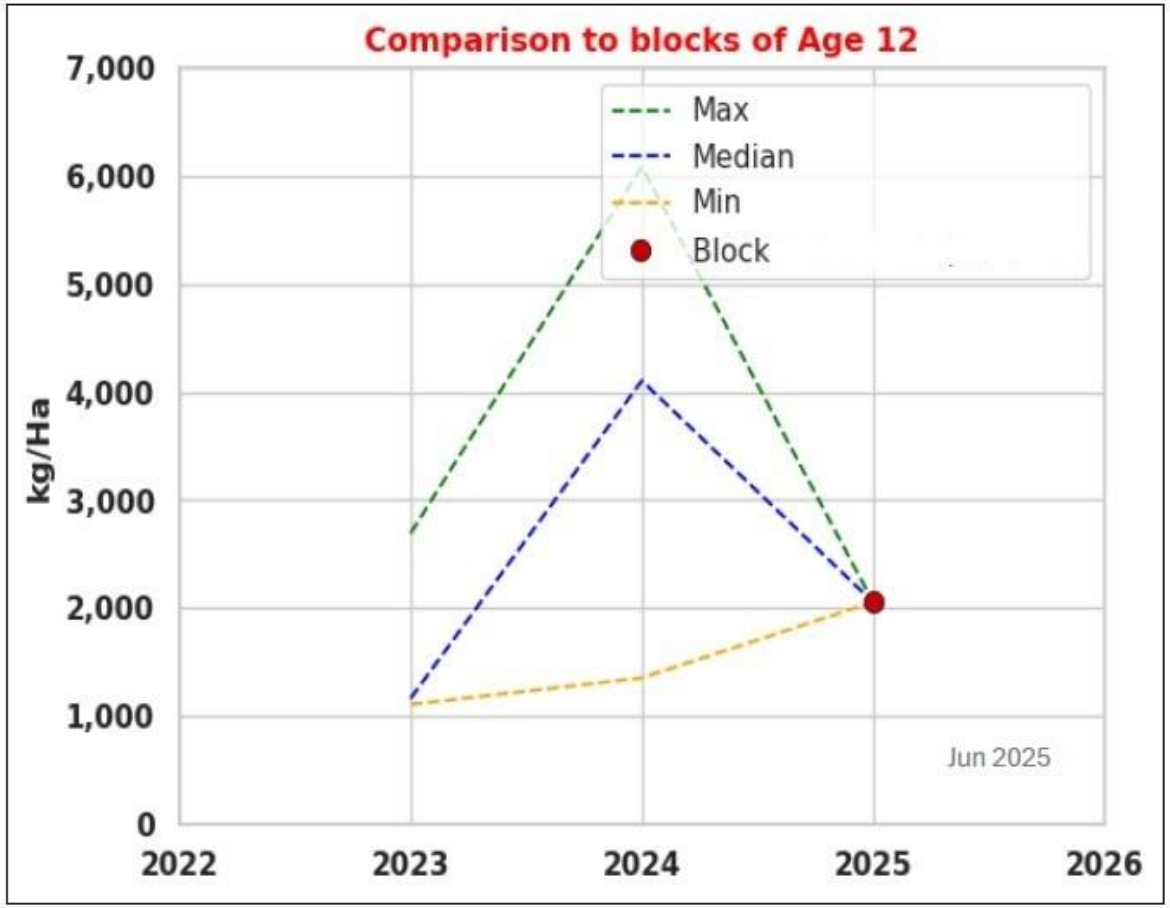
Young trees (9-10 years)





Young trees (11-12 years)

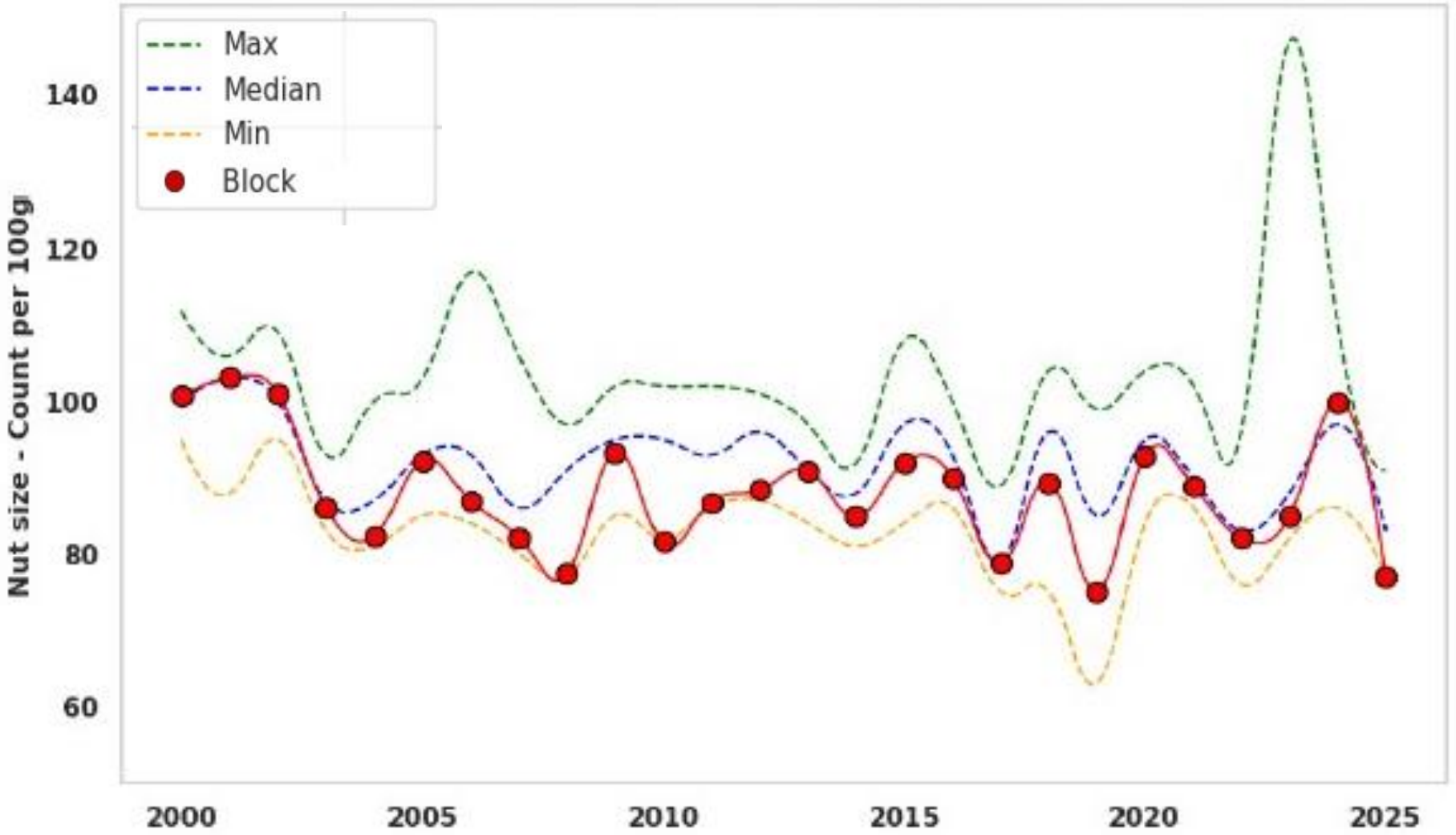




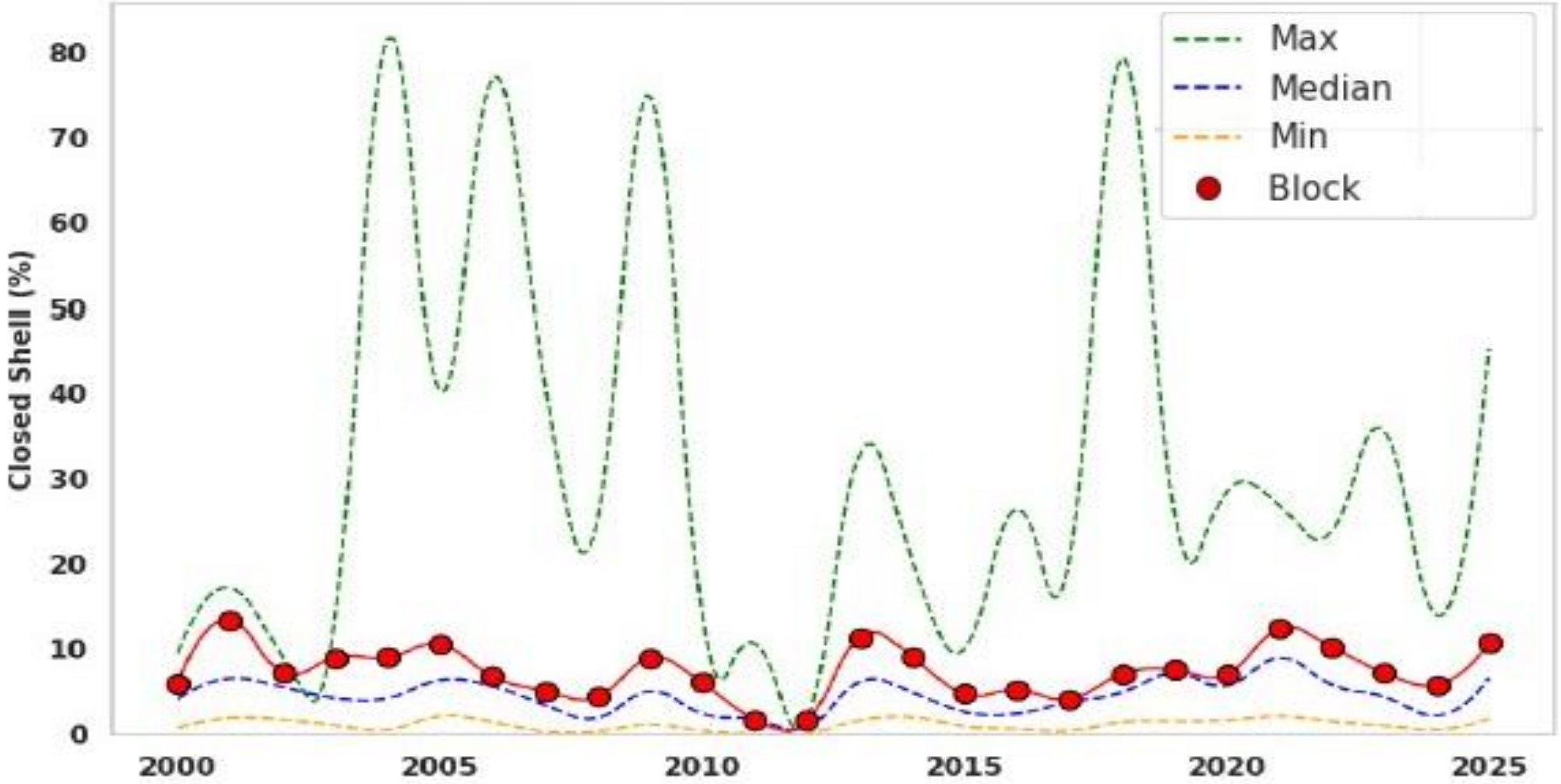
Yield (kg/ha) comparison for young trees 2025

Tree age	Maximum	Median	Minimum
5 years	552	155	0
6 years	1,557	323	0
7 years	2,406	808	0
8 years	3,696	1,987	878
9 years	4,281	2,774	367
10 years	5,086	2,972	808
11 years	3,083	2,211	1,732
12 years	2,054	2,054	2,054

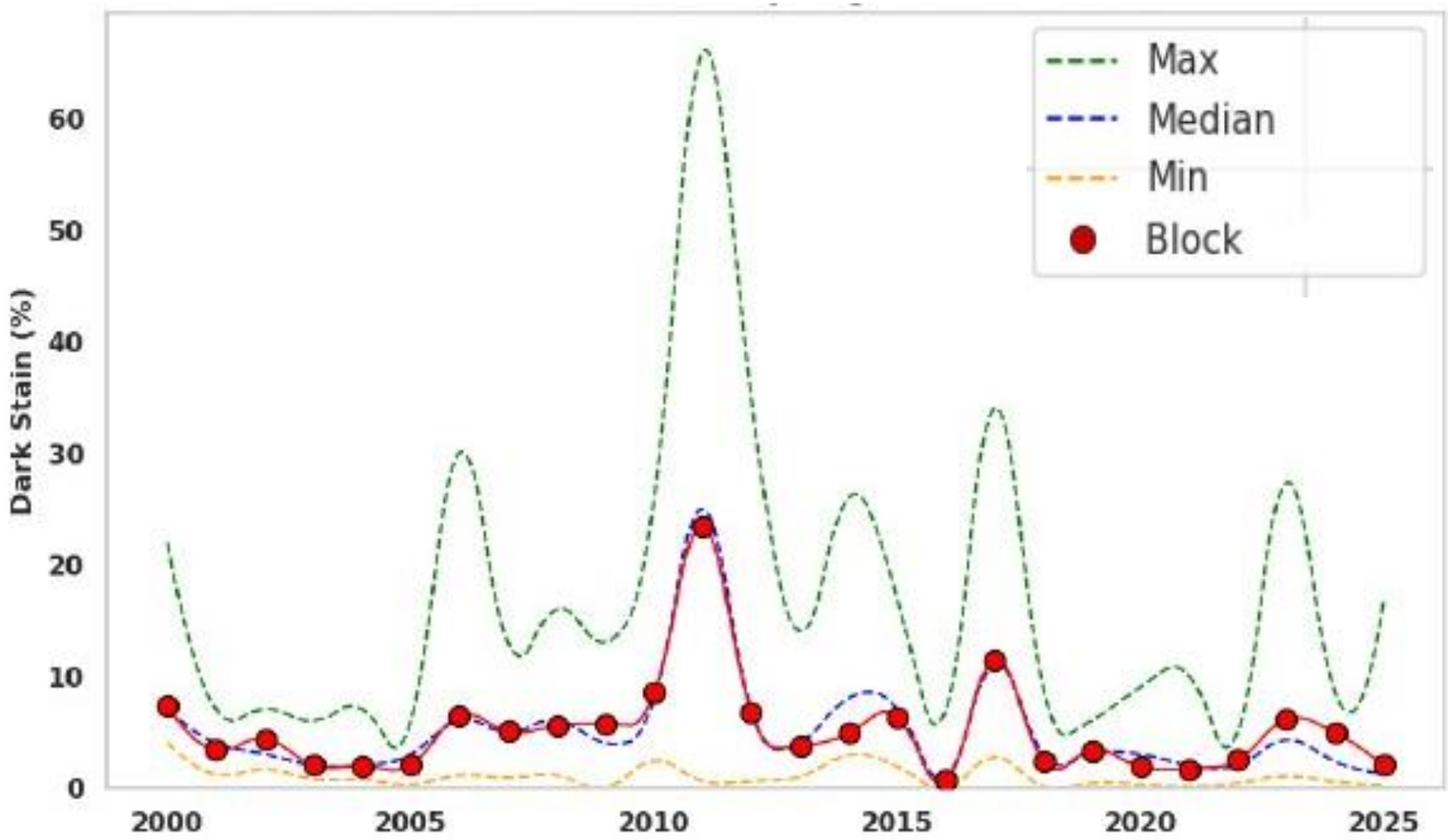
Nut size


Max
Median
Min
Block
Nut size - Count per 100g
140
120
100
80
60
2000
2005
2010
2015
2020
2025

Closed shells



Dark stain


Max
Median
Min
Block
Dark Stain (%)
0
10
20
30
40
50
60
2000
2005
2010
2015
2020
2025

Comparison of nut quality

Quality parameter		2023	2024	2025
Nut count/100 g	Maximum	147	110	91
	Median	88	97	83
	Minimum	82	86	77
Closed shells (%)	Maximum	35.5	13.8	45.3
	Median	4.3	2.1	6.5
	Minimum	0.9	0.5	1.7
Dark stains (%)	Maximum	27.3	8.5	16.7
	Median	4.2	2.3	1.3
	Minimum	1.0	0.5	0.2

Research Update (PS22000)

Objectives of PS22000 as Contracted

- Understanding chill and optimising new chill mitigation management with oil and polymer applications
- Investigating the causes and techniques to manage juvenile shoot dieback
- Investigating nut blanks and abortion and options for their management
- Understanding and addressing sub-optimal productivity in young Kerman
- Understanding specific project outputs as determined by industry needs

Polymer trial 2024/25

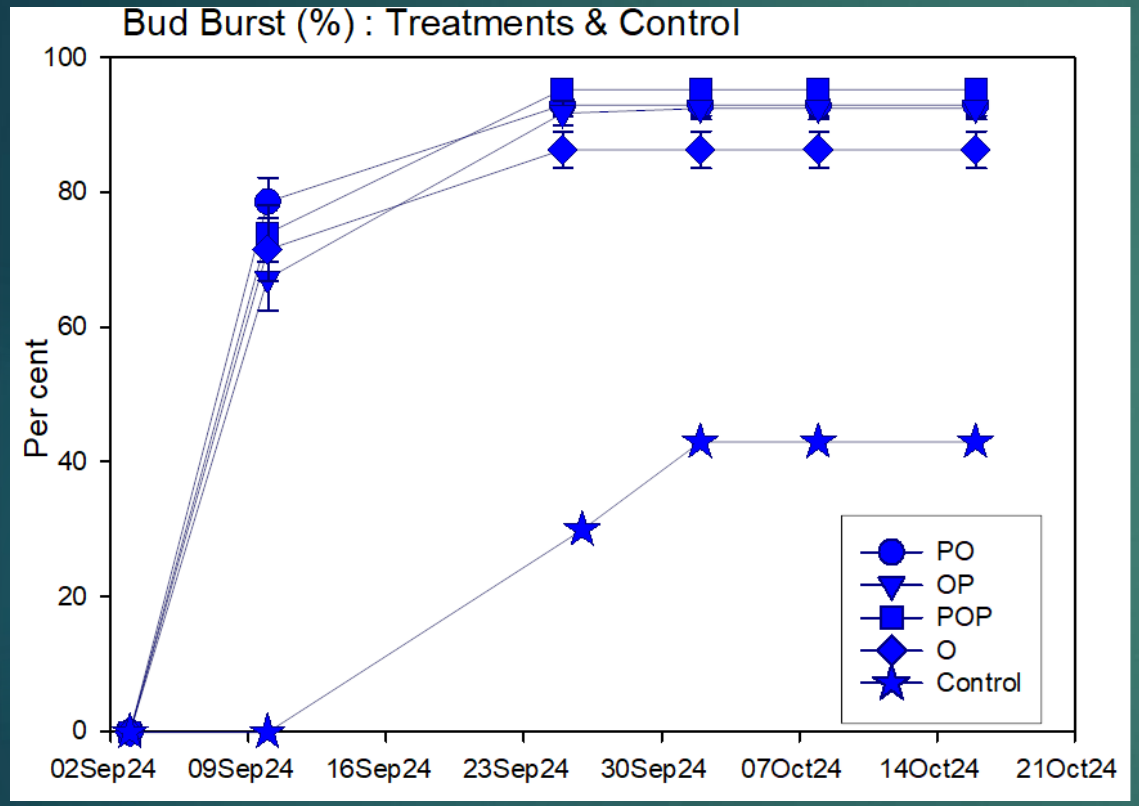
Rob Haynes Orchard, Waikerie, SA

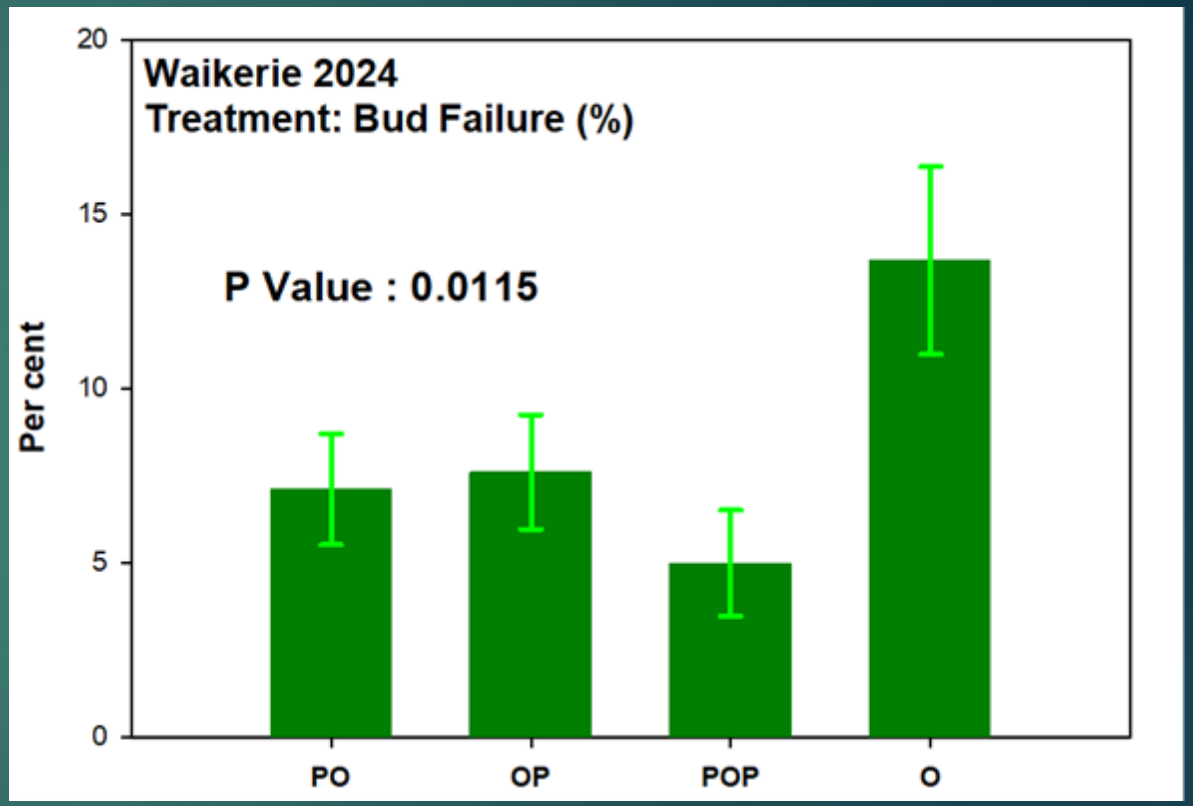
Chill portions accumulated = 53

7% more budburst in polymers than oil alone

14% bud failure in oil only and 7% in polymer

Polymer Trial





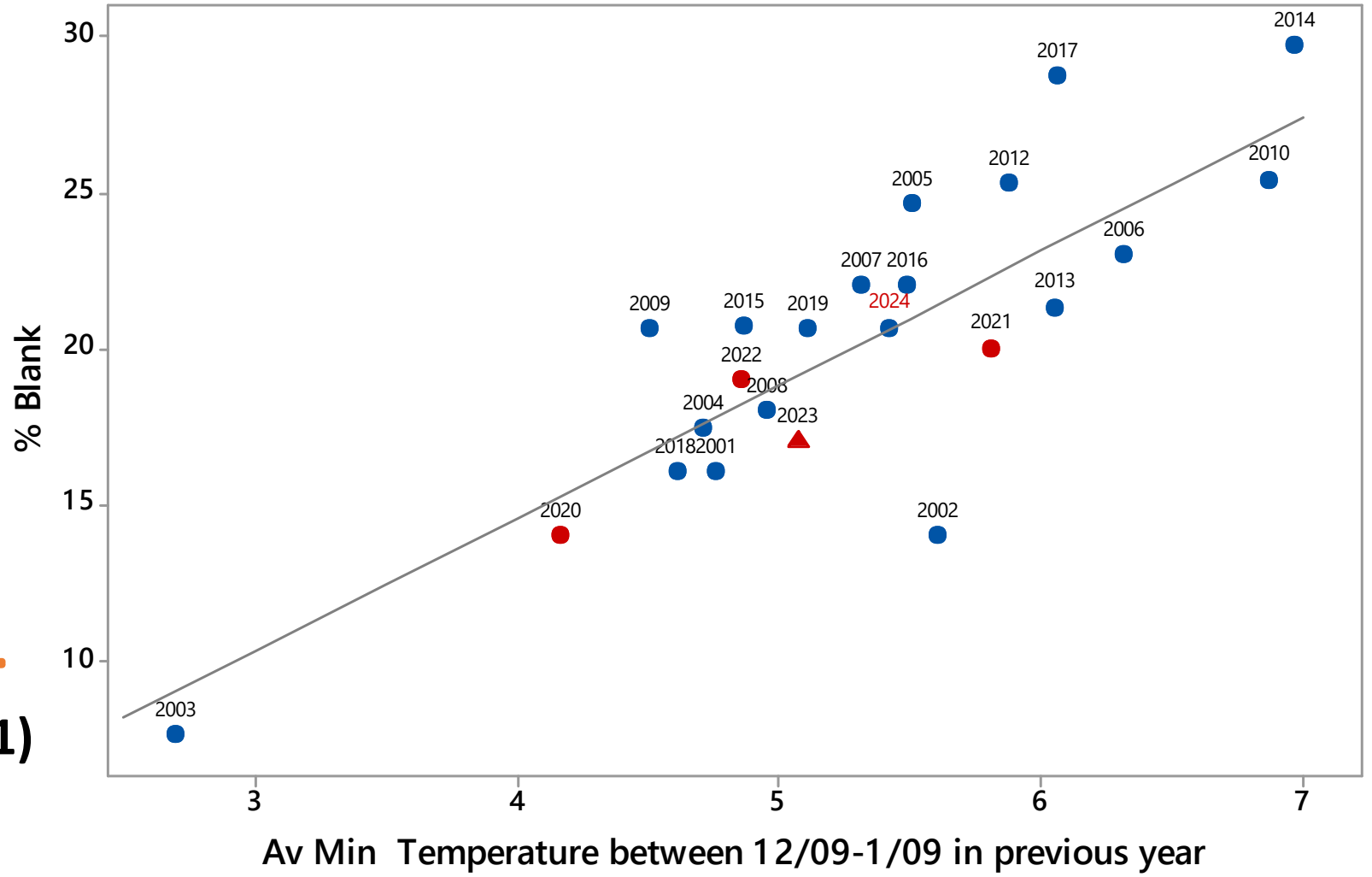
Juvenile Shoot Dieback (JSDB)

Juvenile Shoot Dieback (JSDB)

Practices/factors	Severe symptoms	Less symptoms
Oil application	> 3%	≤ 3%
Temperature at spray	< 2°C (early morning)	> 7°C (daytime)
Solar radiations	Cloudy day	Sunny day
Day & night temperature	Higher difference	Low differences
Post spray temperature	Below 2°C	Above 5°C

Blanks

(Zhang and Ranford, 2021)



Blanks trial, Kyalite Pistachios

01

0.5% polymer + oil

02

Weekly observations with 150 nuts per treatment

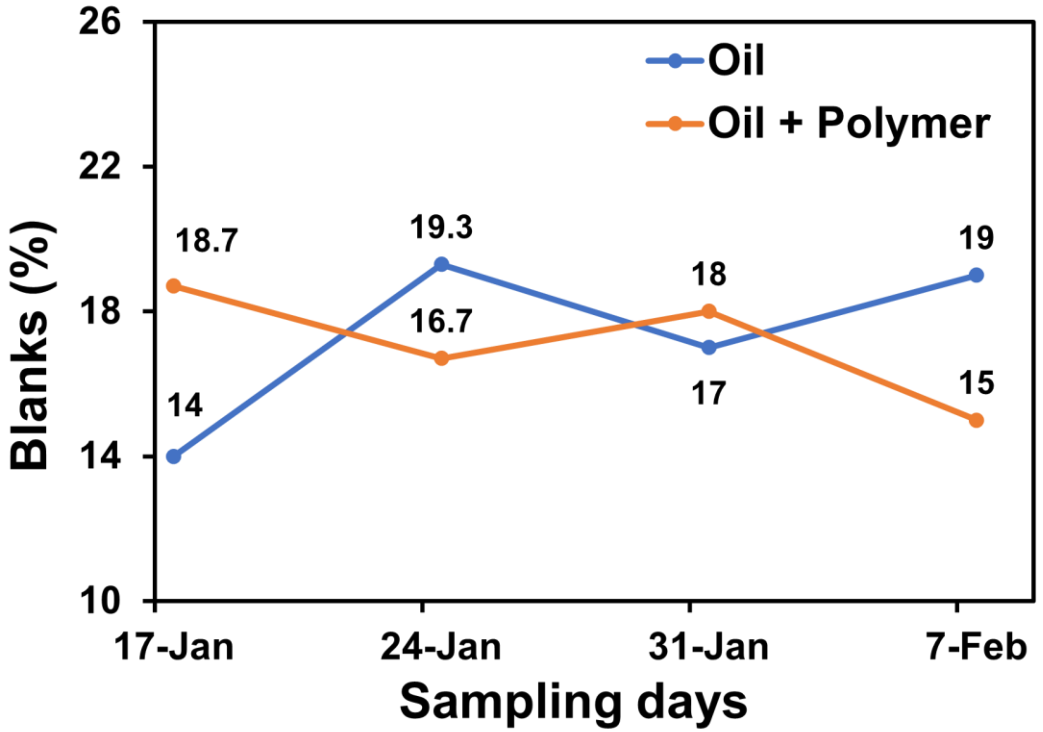
03

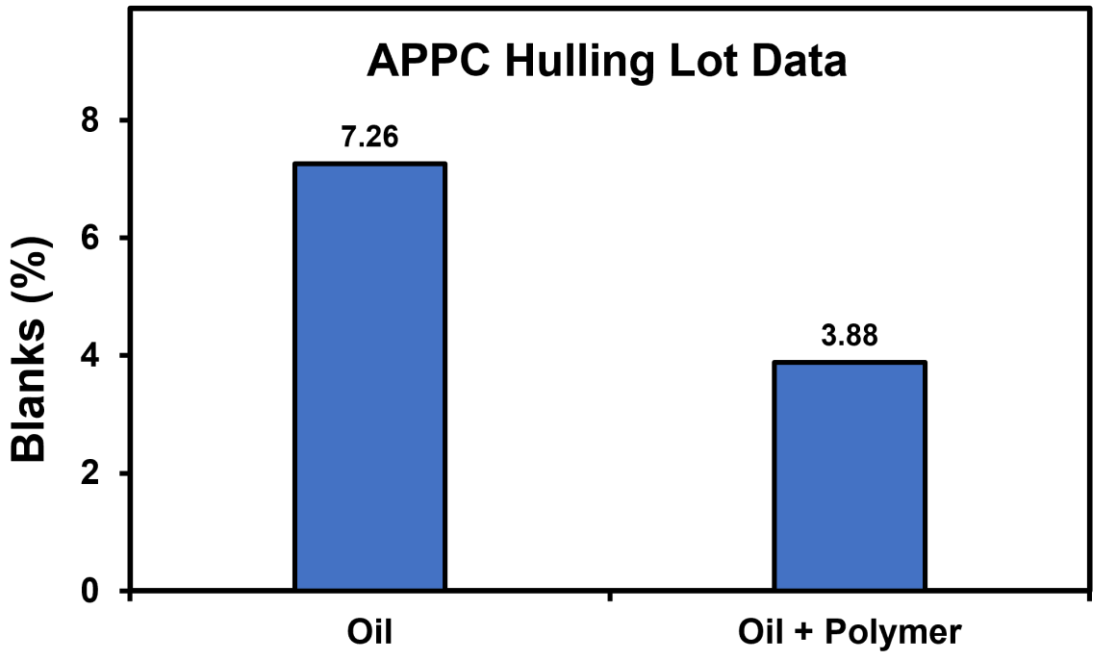
15% blanks in polymer and 19% in oils only

04

APPC: 3.8% in polymers and 7.2% in oils only

Blanks


Oil
Oil + Polymer
Blanks (%)
26
22
18
14
10
18.7
19.3
18
19
16.7
14
17
15
17-Jan
24-Jan
31-Jan
7-Feb
Sampling days


APPC Hulling Lot Data
Blanks (%)
8
6
4
2
0
7.26
3.88
Oil
Oil + Polymer

Sub-optimal productivity of young ‘Kerman’

Less yield as compared to California

Leaf analysis: higher nitrogen, copper, manganese & zinc

Higher bud failure or abscission rate?

What's Next….

Chill newsletters and review	Chill mitigation through polymer and oil application	More observations on JSDB
Blanks trial	Understanding *Carpophilus* in pistachios (AgVic)	Causes of sub-optimal productivity in young 'Kerman'

Acknowledgments

GROWERS & ORCHARDS

RESEARCH COMMITTEE

HORT INNOVATION

AGRICULTURE VICTORIA

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Thank you