

Research Updates on Pepper Shading and Pole Lima Beans

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Trial Setup

- Trials in 2018 & 2019
- Bell pepper varieties 'Socrates' and 'Archimedes'
- Shade treatments:
 - No Shade
 - 30% Black
 - 30% Aluminet (silver)
 - 30% Red
 - 22% White
 - 40% White

Results Summary

- 30% black shade cloth increased marketable yield:
3x the marketable yield of no shade
- 30% black shade cloth increased the % marketable weight from 39% to 67% marketable.



Pepper Shade Timing Methods

Shade Treatments

- no shade
- June
- June/July
- July
- June/July/half August

Variety Treatments

- Aristotle
- Early Sunsation | Abay
- Mandarin Perfection | Milena
- Carmen

Production Procedures

- Double row plasticulture, staked
- Transplanted June 4, 2021 & June 1, 2022
- Drip irrigated

Trial Setup

- Split plot design (variety subplots)
- 40 plants per plot (10/variety)
- 3 replications in 2021
- 4 replications in 2022



Pepper Shade Timing Methods



Harvest

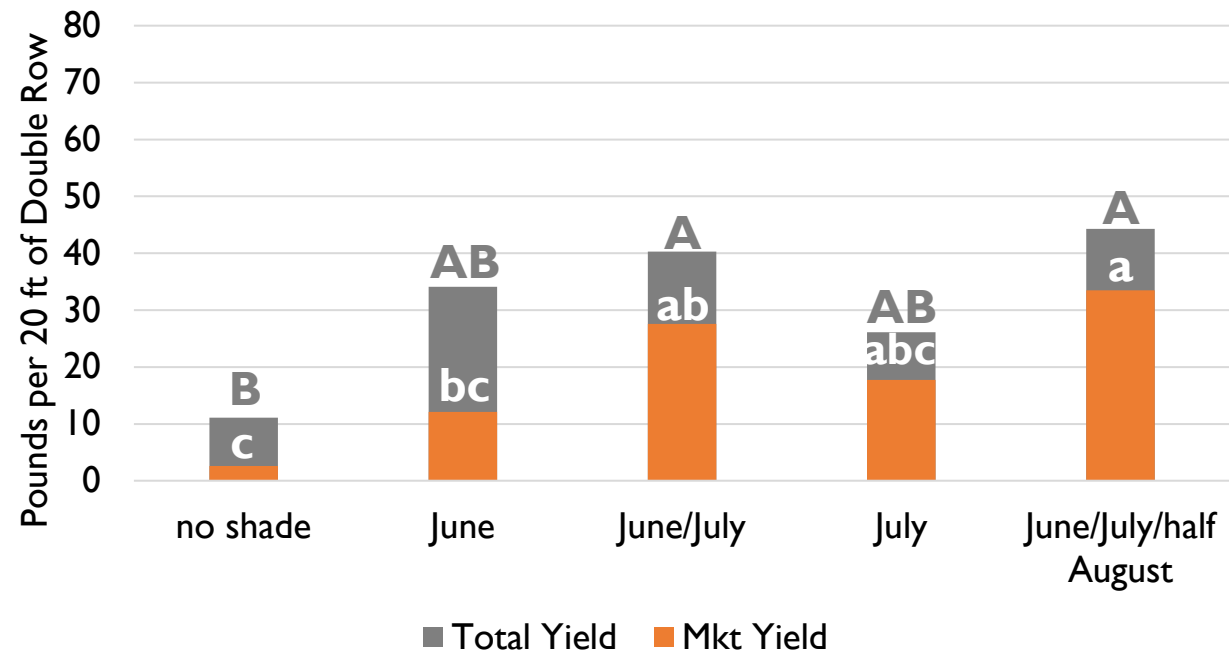
- Harvest began Aug 5 (2021) and Aug 16 (2022)
- Harvested weekly 5x (2021) 8x (2022)
- Varieties weighed and graded separately
- Grade Categories:
 - Fancy
 - No. 1
 - Small (unmarketable)
 - Misshapen (unmarketable)
 - Sunscald/BER (unmarketable)



Pepper Shade Timing Total & Marketable Yields

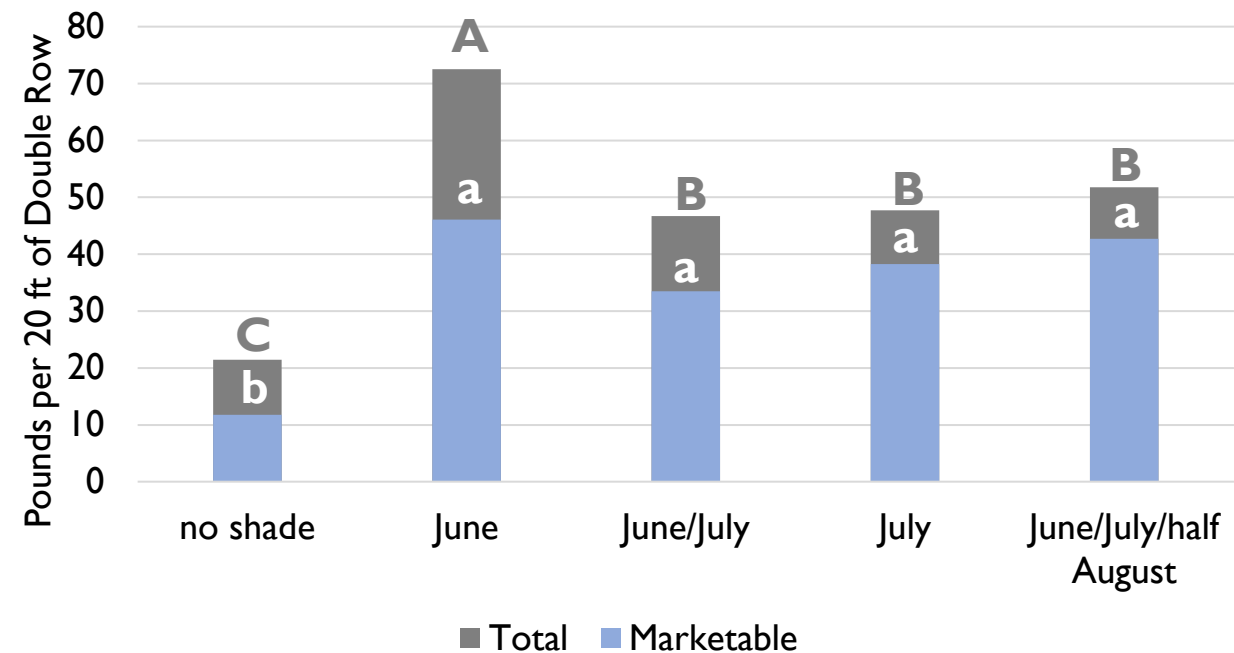
2021

Bell Varieties Total & Marketable Yield



2022

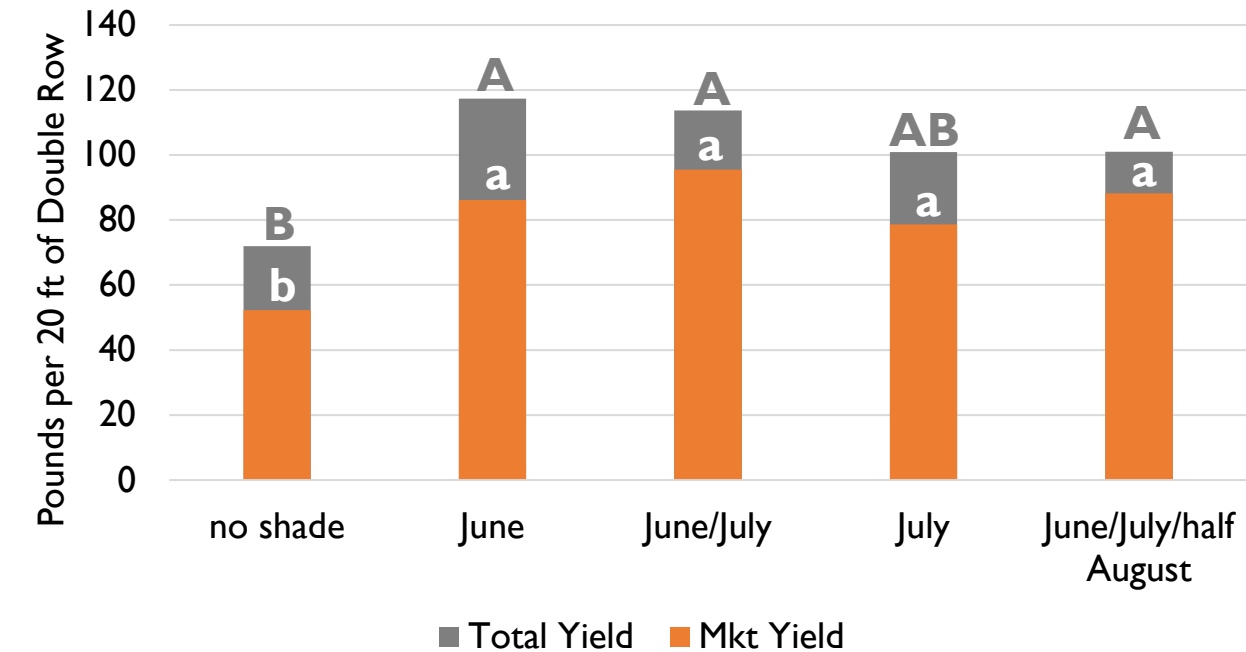
Bell Varieties Total & Marketable Yield



Pepper Shade Timing Total & Marketable Yields

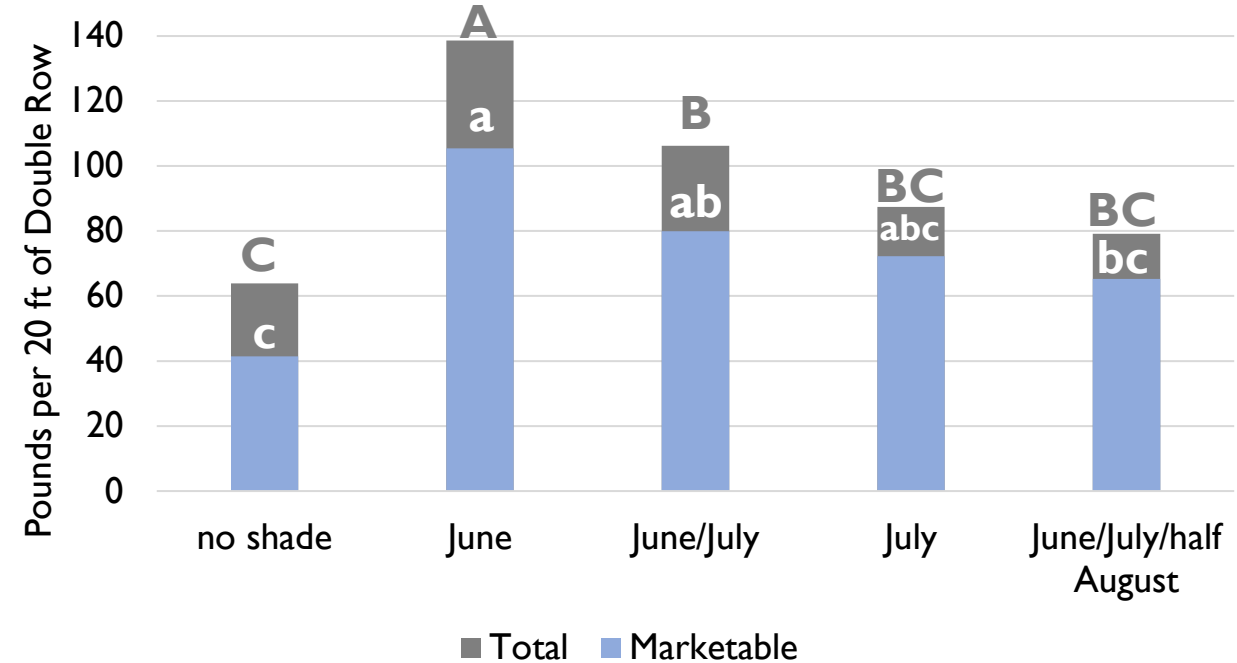
2021

Carmen Total & Marketable Yield



2022

Carmen Total & Marketable Yield



Pepper Shade Timing

What does shade cloth do?

Increased Percent Marketable

Trt	% Marketable
no shade	52 c
Jun	62 bc
Jun/Jul	74 ab
Jul	77 ab
Jun/Jul/Aug	81 a

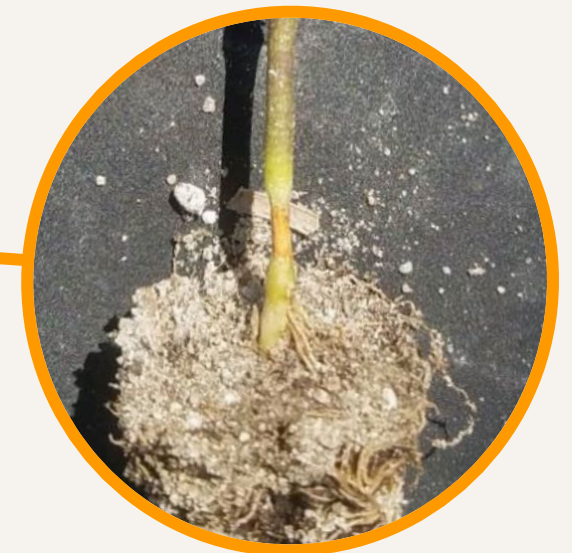
Increased Fruit Size

Trt	Avg Fruit Wt (lb)
no shade	0.16 c
Jun	0.21 b
Jun/Jul	0.24 ab
Jul	0.24 ab
Jun/Jul/Aug	0.30 a



Increased Plant Survival (2022)

Trt	% Survival
no shade	64 c
Jun	97 a
Jun/Jul	98 a
Jul	81 b
Jun/Jul/Aug	97 a



Pepper Shade Timing

What does shade cloth do?



Unshaded Treatment Jul 20, 2022



Shaded Treatment Jul 20, 2022

Pepper Shade Timing

What does shade cloth do?

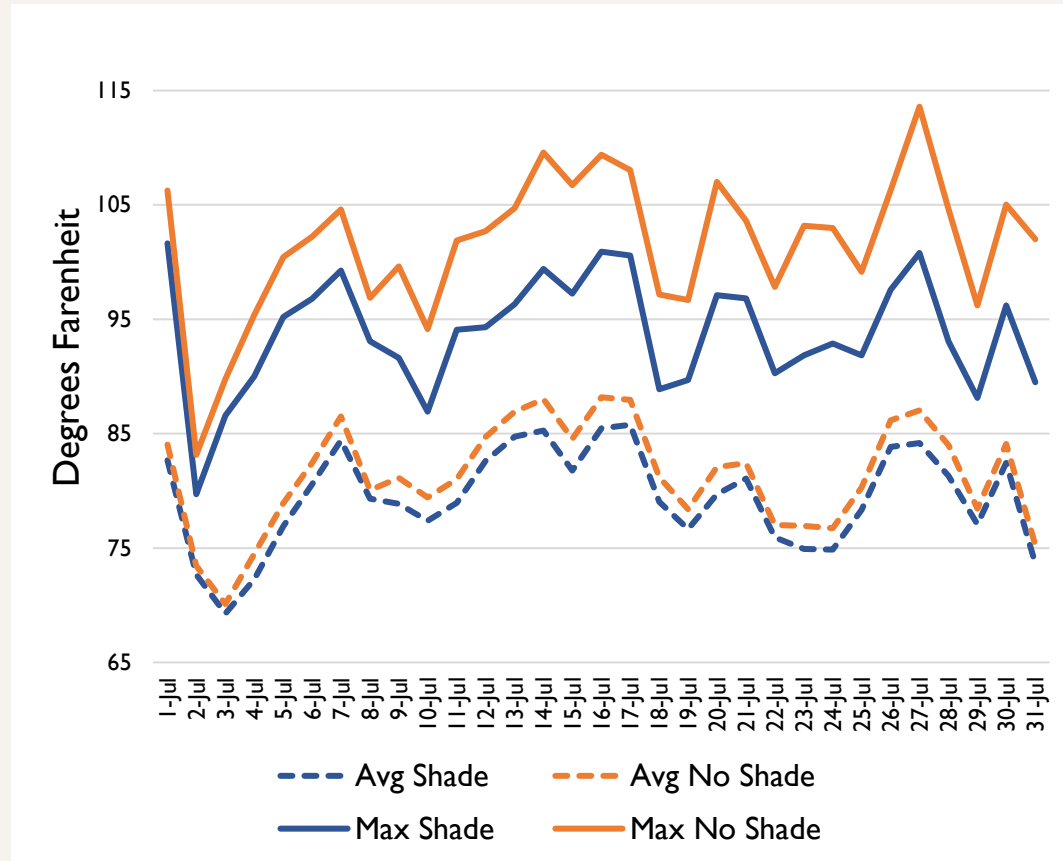
Reduces Soil Temperatures

- 98 °F vs 85 °F in mid July in early afternoon

Reduces Canopy Temperatures

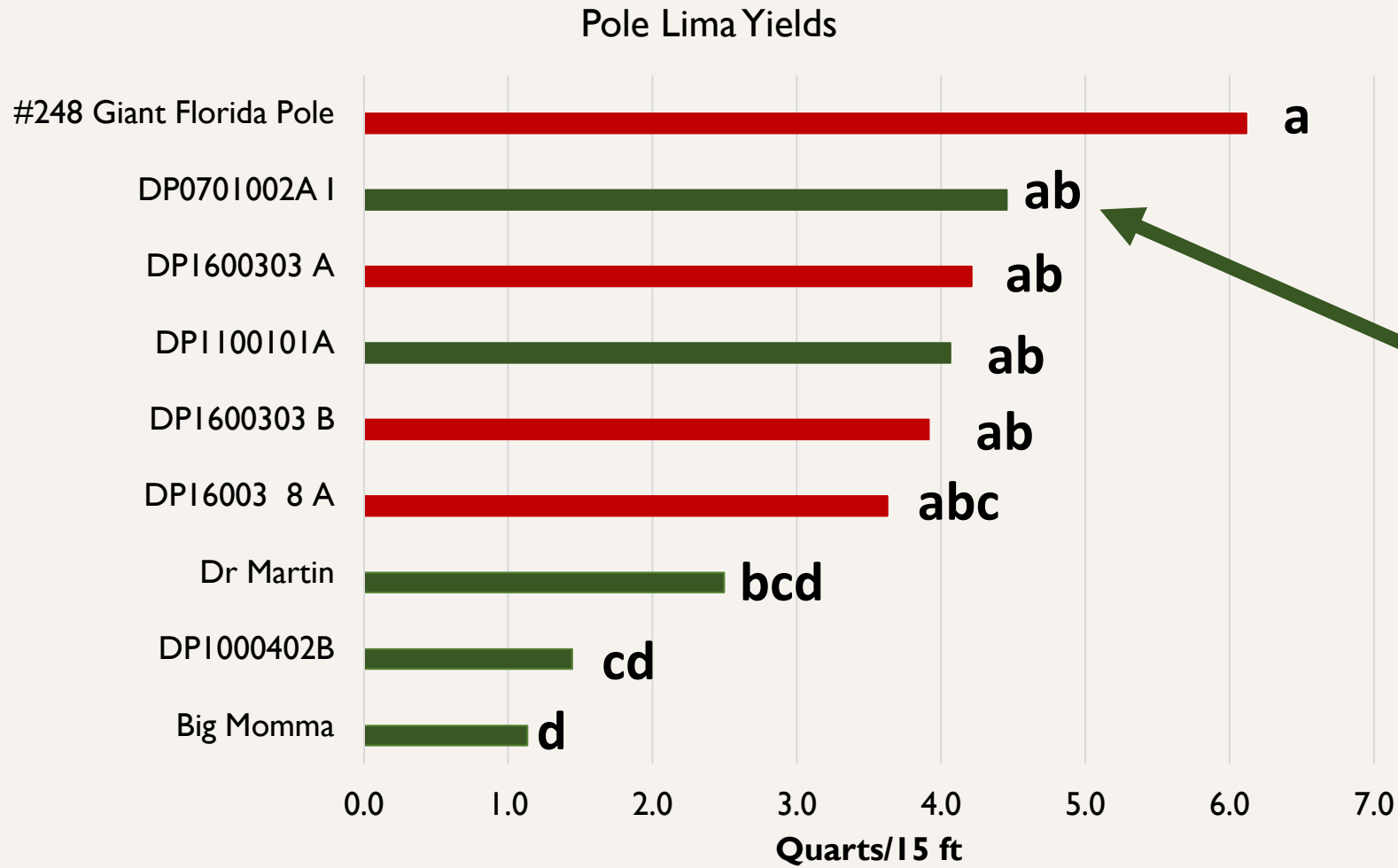
- ~2 °F lower average daily temperature
- ~8 °F lower maximum daily temperature

Average and Maximum Daily Temps With and Without Shade



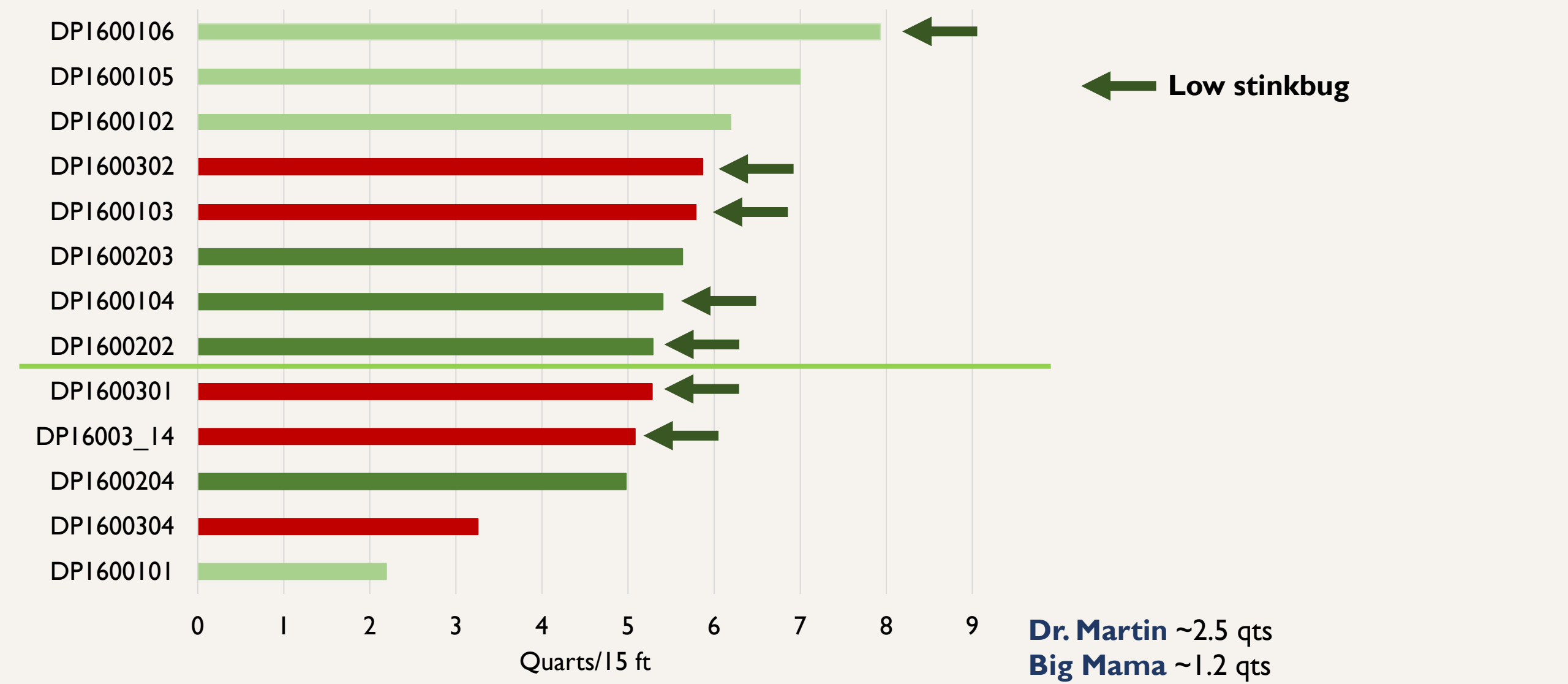
Using Shade Cloth





DP070002A I

Beautiful and good yield but failed the taste test.



DPI600106



DPI600105



DPI600102



DPI600302



DPI600103



DPI600203



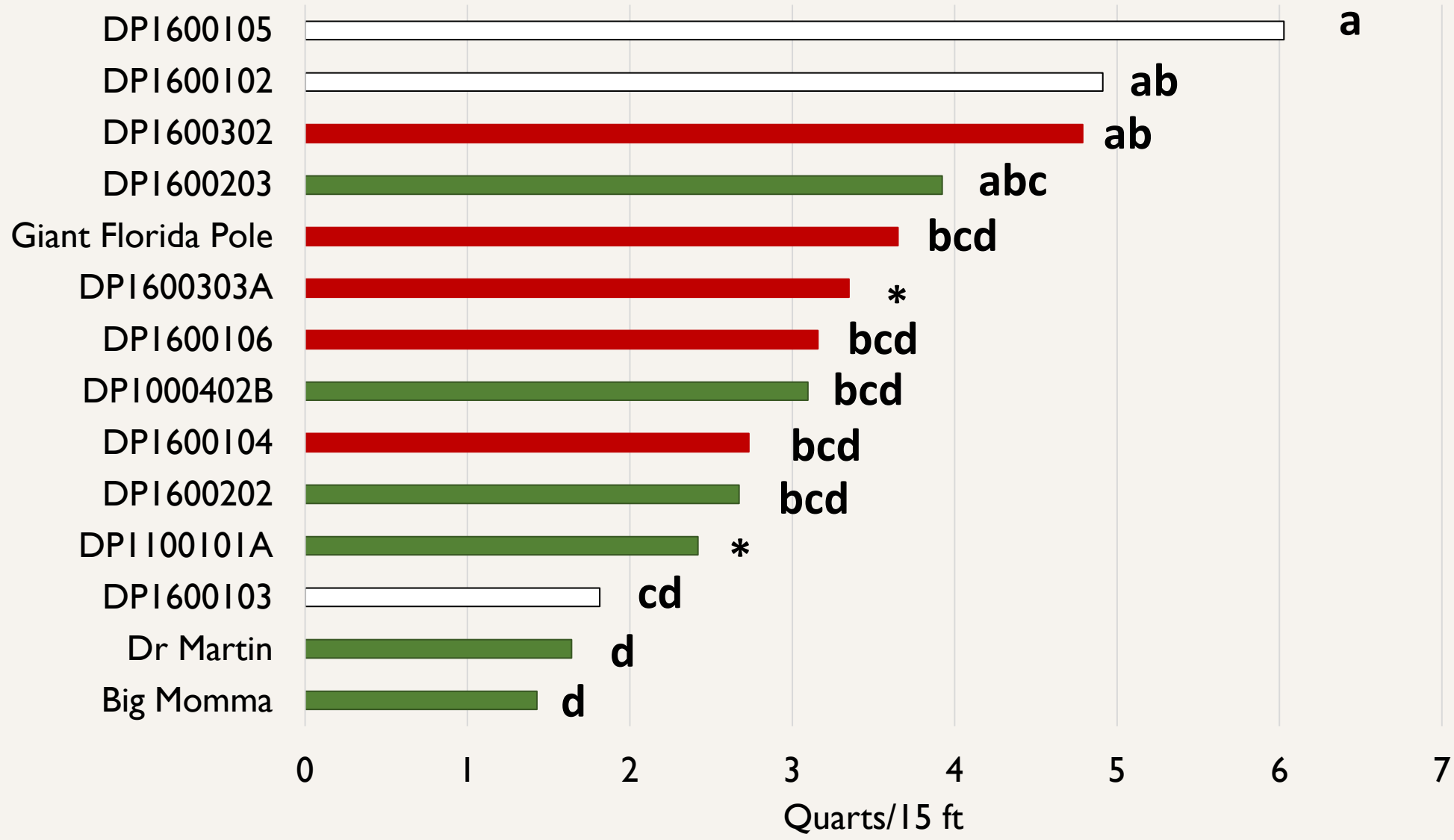
DPI600104

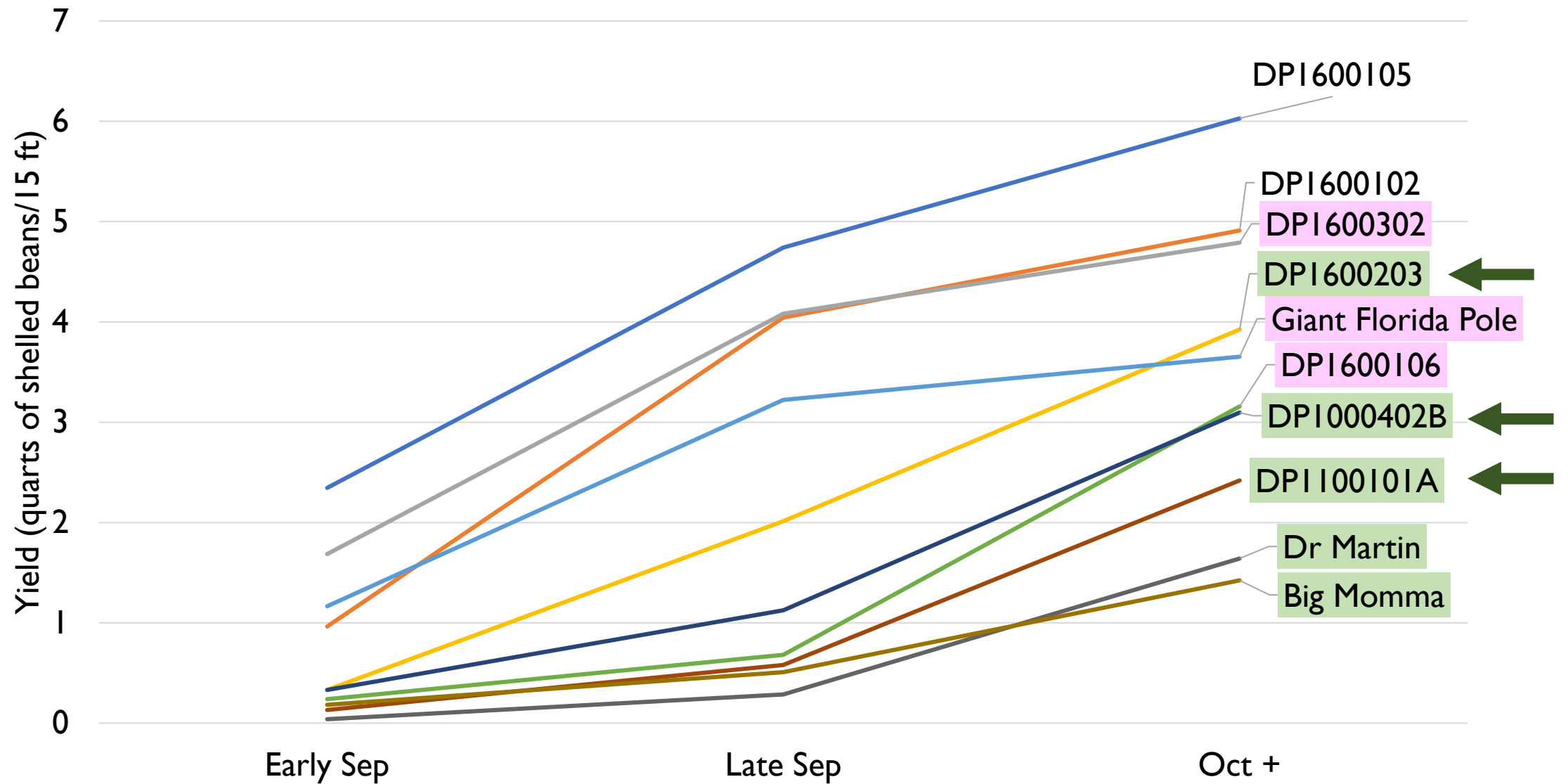


DPI600202



Pole Limas **2022 Yields**





Do you want to test these lines?



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302-233-4719

Thank You



2022 Summer Crew

Aaron Doll
Amber Green
Austin Truitt
Emily Jones
Jenna Anger
Maya Jones

Carvel Farm Staff