

Peach Training System Trial 2012 Update

MAFVC 2013

Goals of an “Ideal” System:

- Valuable Crop
 - Variety
 - Size and Quality
- Early yield & ROI
- Sustained High Marketable Yields
 - Light interception
 - Light distribution
- Labor efficient production
 - Minimal ladder use
 - Simple tasks



Objectives:

- Compare and demonstrate
- 2 peach varieties:
 - Loring (conventional growth habit)
 - Sweet-N-Up (upright growth habit)
- 4 training systems: 172 - 484 trees / A



Upright Variety

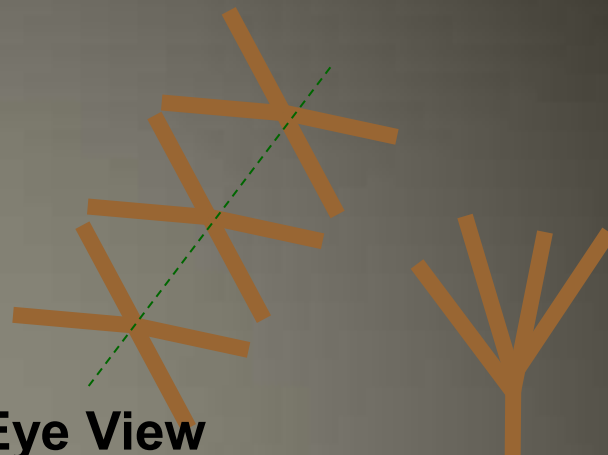


Peach Systems Trial

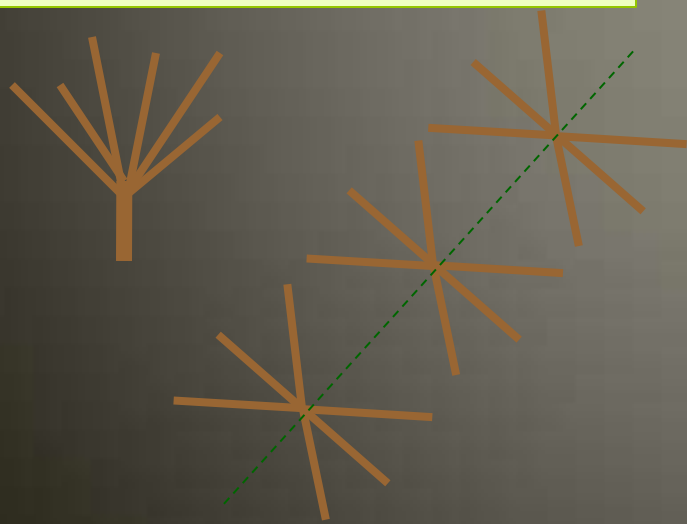
Perp V, 484 T/A



Bird's Eye View



Hex V, 242 T/A



Bird's Eye View

Quad V, 346 T/A



Open Ctr, 173 T/A

Peach Systems

- Planted 2007
 - All @18' cross row spacing
- Evaluate:
 - Tree growth
 - Yield and precocity
 - Fruit size & quality
 - Canopy light
 - (Labor efficiency)



Last Year Summary - Variety

- Similar tree size for both
 - Sweet N Up trees were taller (con)
 - Loring Trees were wider (pro)
- Loring trees had more yield in 2011
- Loring pulling away on cumulative yield
 - Sweet n Up had highest yield in 2009
 - Loring has been yielding more since 2010
- **Advantage: standard spreading habit**

Last Year Summary - System

- Closer = smaller tree continues
- Closer = higher yield?:
 - Perp V 2011 yield < quad and hex
 - Hex 2011 yield now = quad
 - Quad cumulative yield still > Hex
 - Open vase has lowest yield (half of best systems)

Last Year Summary - System

- Quad or Hex Vs Perp V – More scaffolds per tree did little to reduce tree height.
- V systems have filled their space
 - 2012: will manage for tree height at 14'
 - Vs may have peaked on yield / acre
- Open vase has ≥ 2 feet to go to fill space
 - Expect annual yield to keep rising

Last Year – Systems and Fruit Size

- OV has proportionately more large peaches
 - a) Lower yield / acre
 - b) We have lifetimes of experience with OV
 - Good at it!
 - c) Perhaps we need to prune V trees harder to eliminate some (small) fruit
 - d) Perhaps 500 Bu / acre is the target?
 - e) Adjust fertilizer practices to reflect high yields?
 - No signs of deficiency...yet

Sweet N Up

Loring



Open center system

- 14 ft. X 18 ft.
- 173 trees per acre
- Unspecified scaffold no. per tree (3-6)



OC14
System

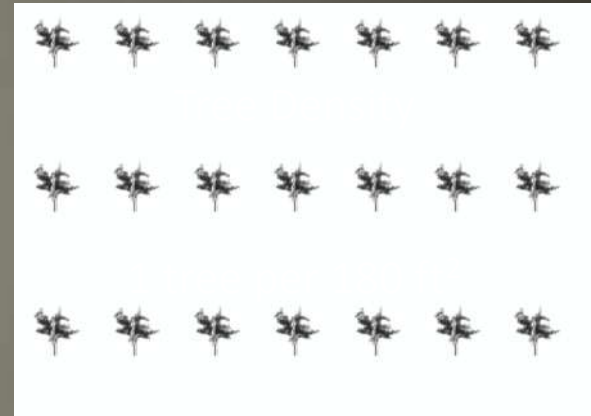
Tree Density
1 tree / 252 ft²

HV10 System



Hex V system

- 10 ft. X 18 ft.
- 242 trees / acre
- Six scaffolds / tree



Tree Density
1 tree / 180 ft²

QV7 System



Quad V system:

- 7 ft. X 18 ft.
- 346 trees per acre
- Four scaffolds per tree



Tree Density
1 tree per 126 ft²



Perpendicular V Syst:

- 5 ft. X 18 ft.
- 484 trees / acre
- Two scaffolds / tree



Tree Density
1 tree / 90 ft²

PV5
System

Platform Use



N.Blosi platform used
Thinning
Mating disruption
Summer pruning
Harvest



Darwin String Thinner 2011 & 2012

- All plots string thinned
 - 3 passes / row
 - Follow-up hand thinning



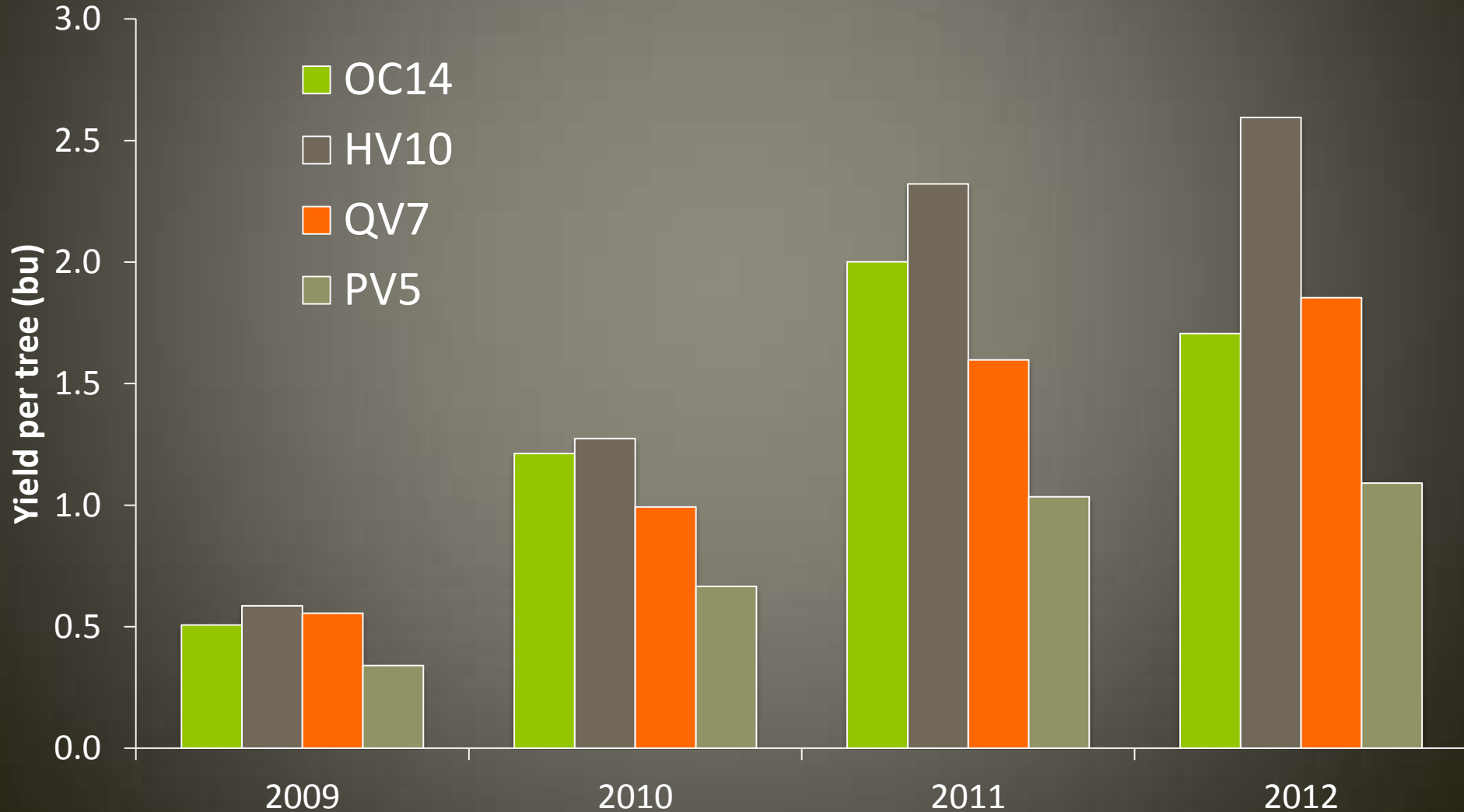
M. Wherley, ACTV

2011 & 2012:

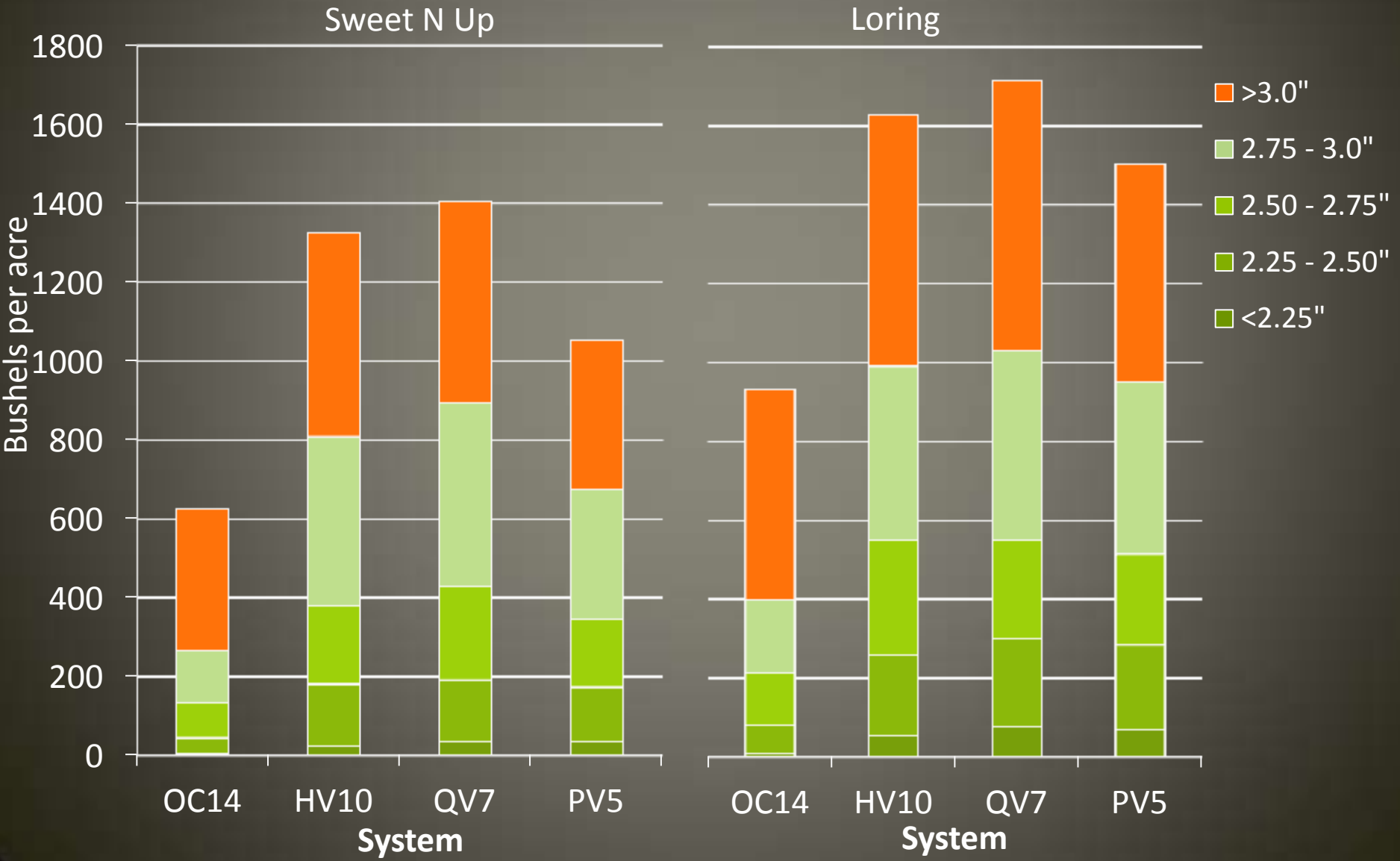


**IRRIGATION DURING
FINAL SWELL!**

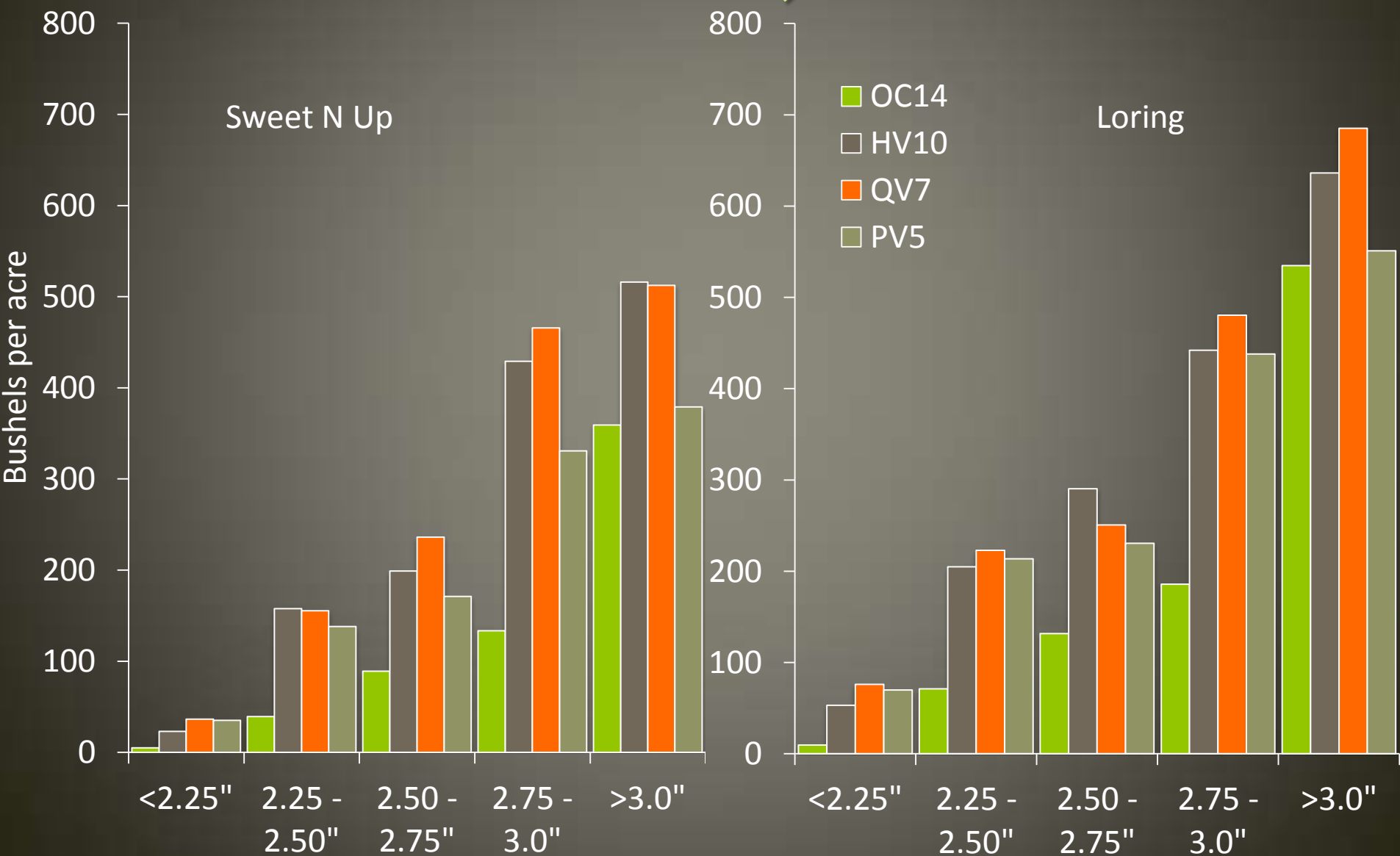
Yield per tree by year, Loring



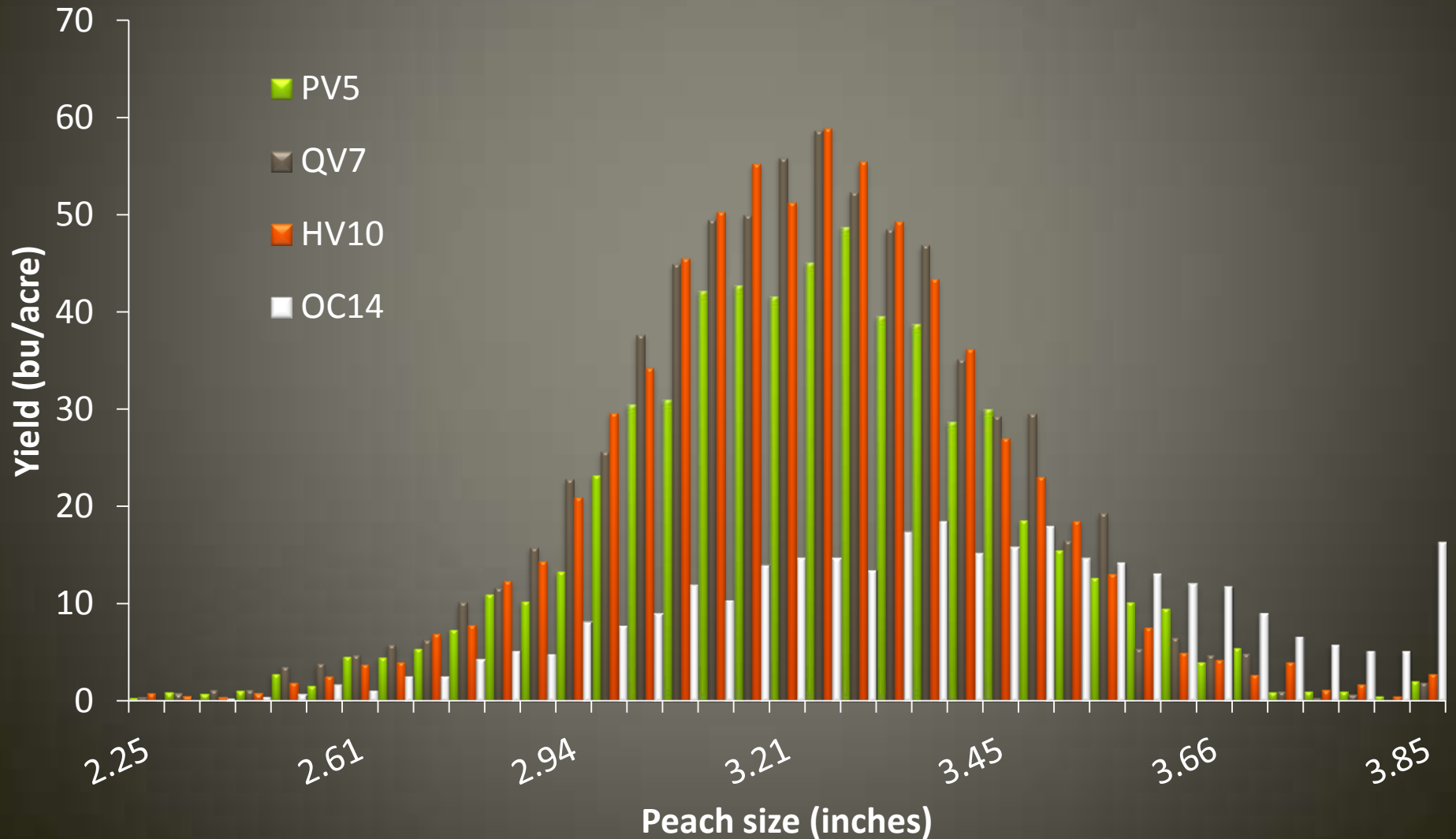
Cumulative Yield, 2009-2012:



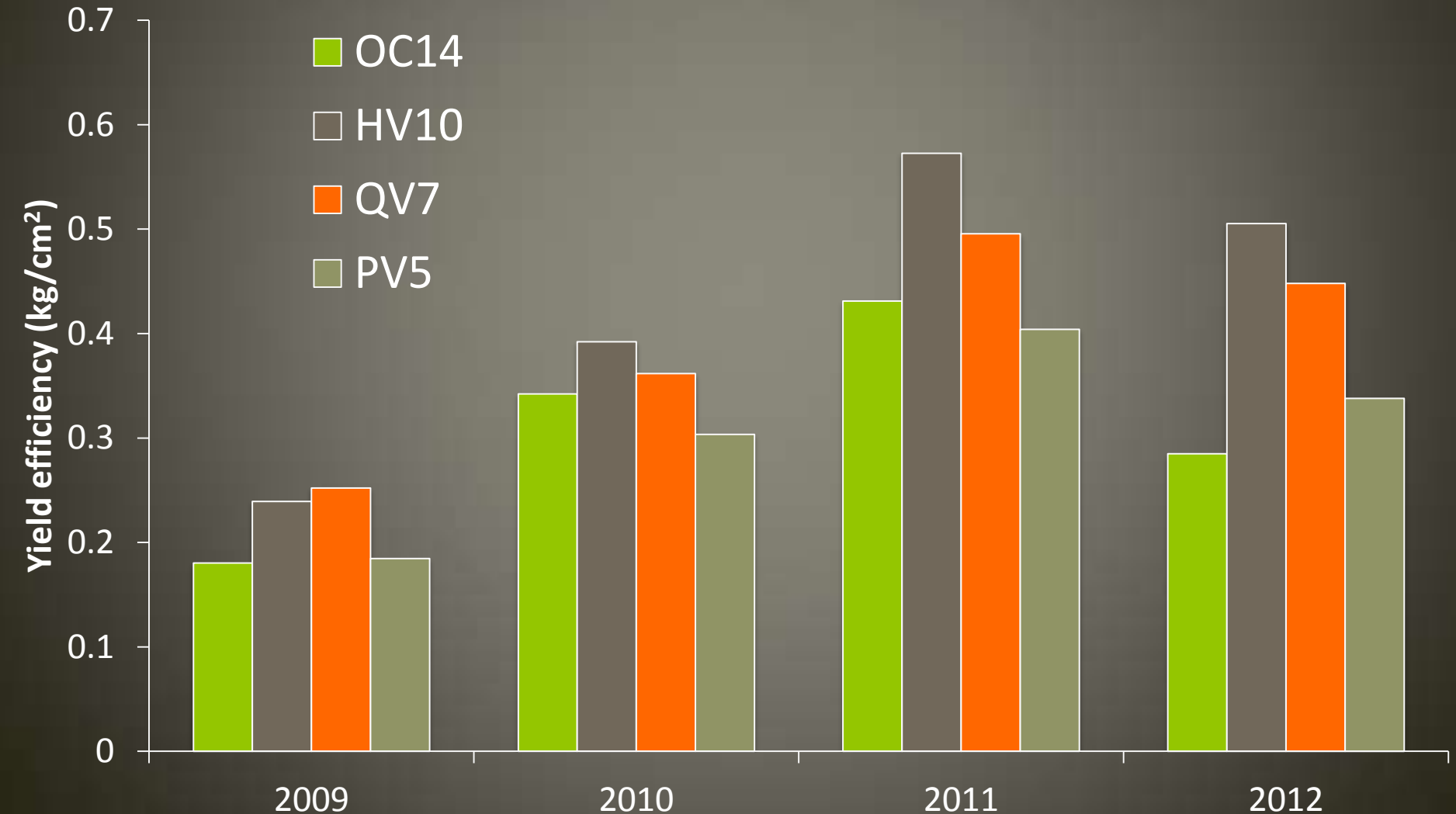
Cumulative Yield, 2009-2012:



2012 Fruit Size Distribution



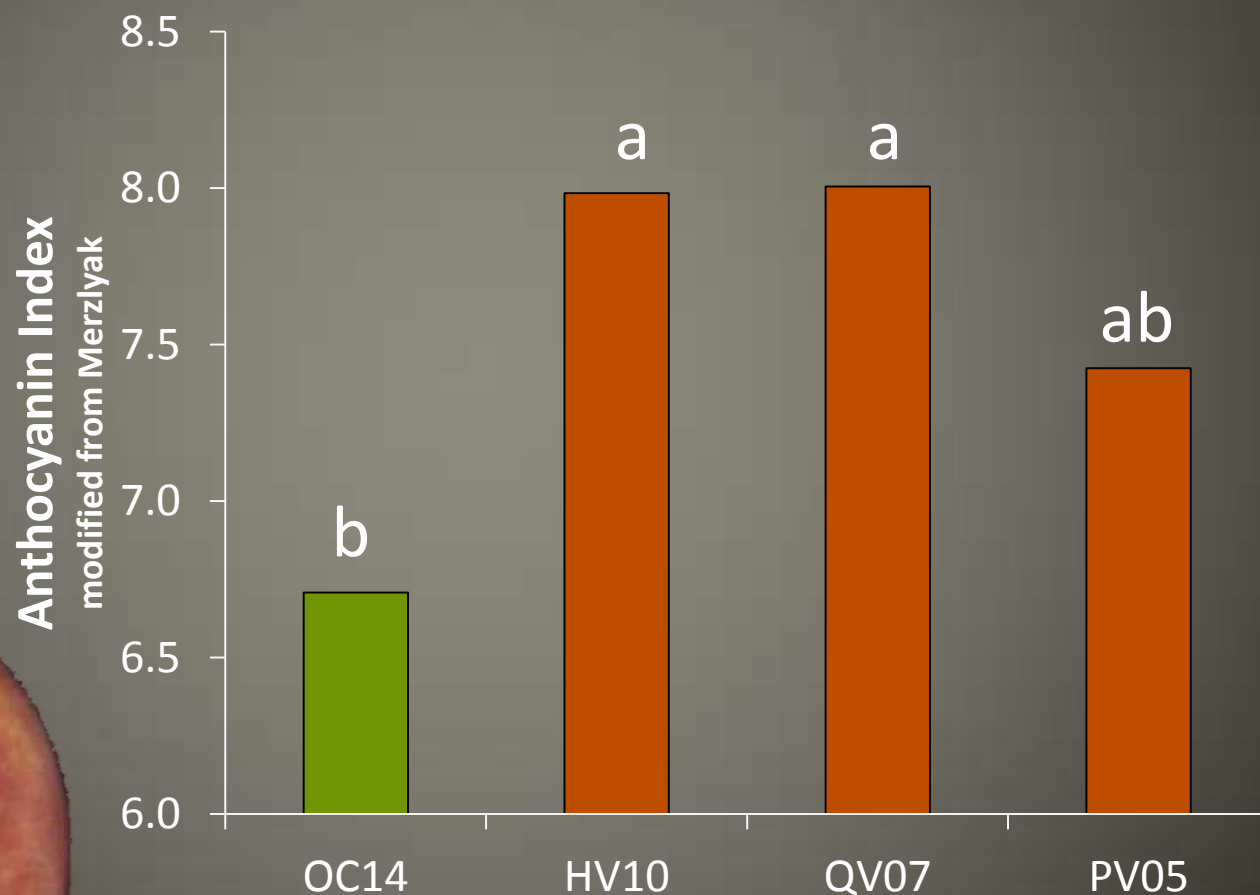
Yield efficiency by year, Loring



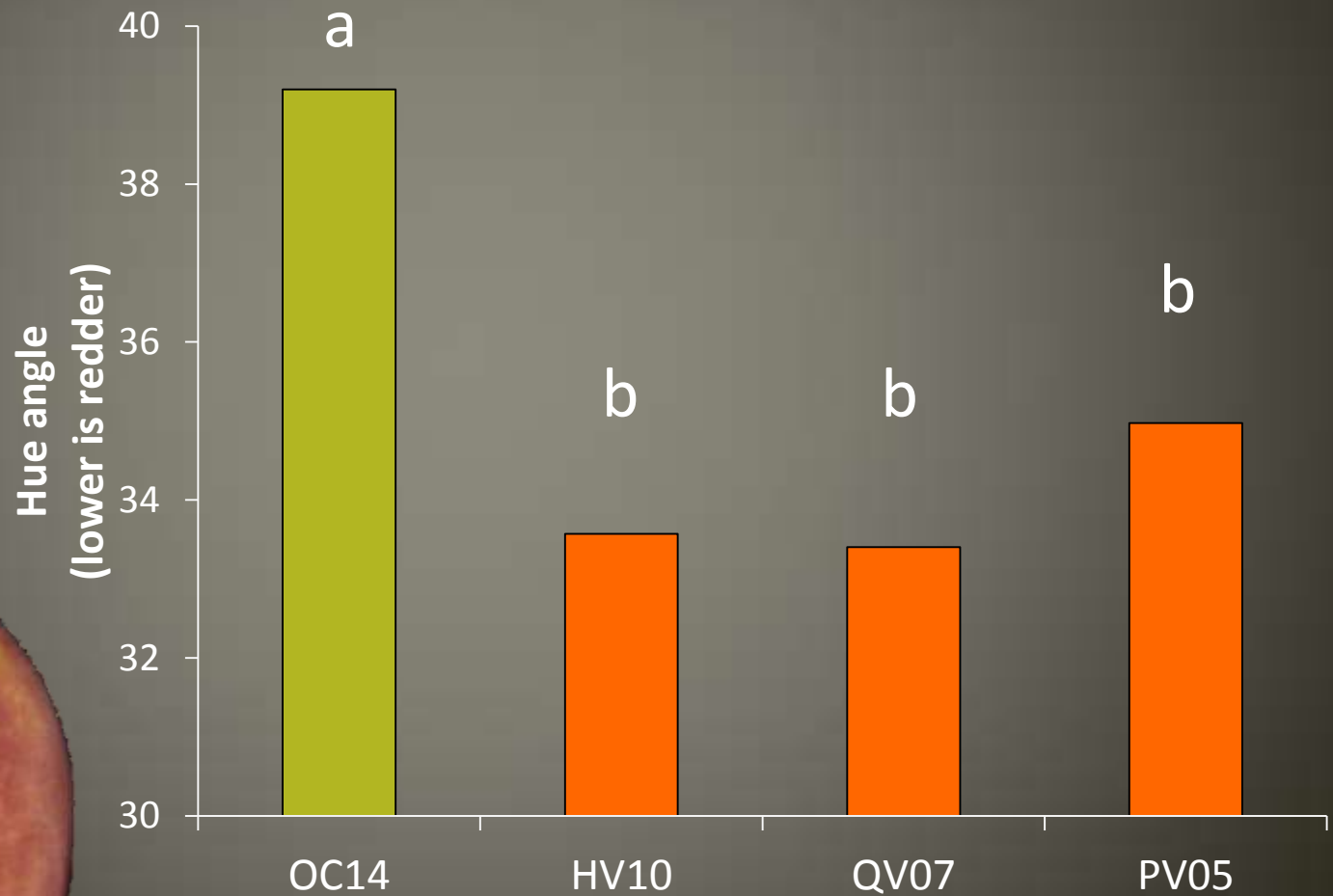
Red Fruit Color

- Sampled peaches in lower canopy
- Measured color using a spectrophotometer
- Measured 24 fruit per plot X 7 replicates X 4 systems X 2 varieties = 2,096 measurements
- Took digital photos under constant lighting conditions
 - analyzed them for percent of blush coverage
 - on blush and background sides

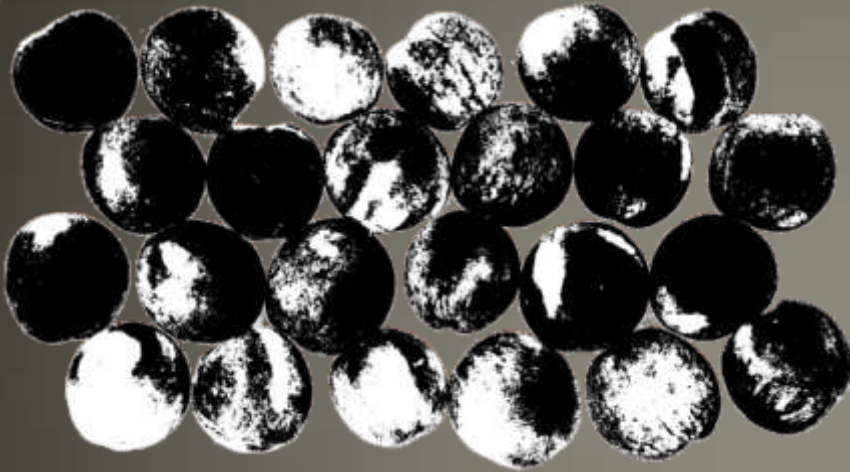
Blush “Redness” , Loring



Blush side hue angle, Loring



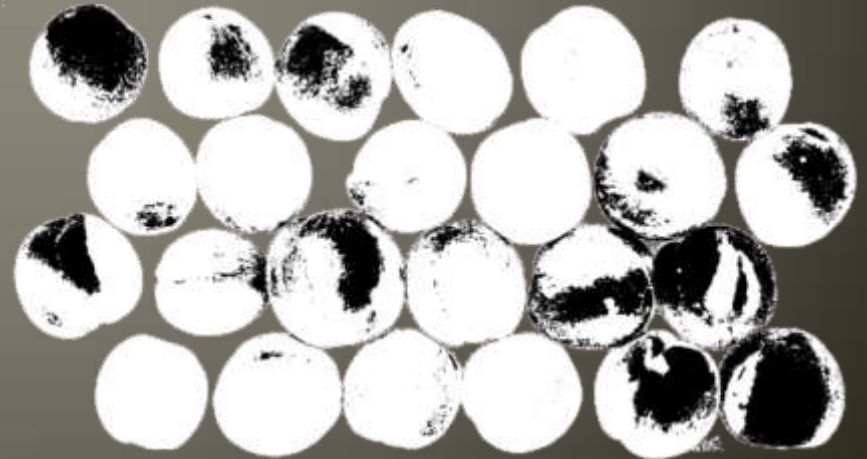
Percent Blush Coverage



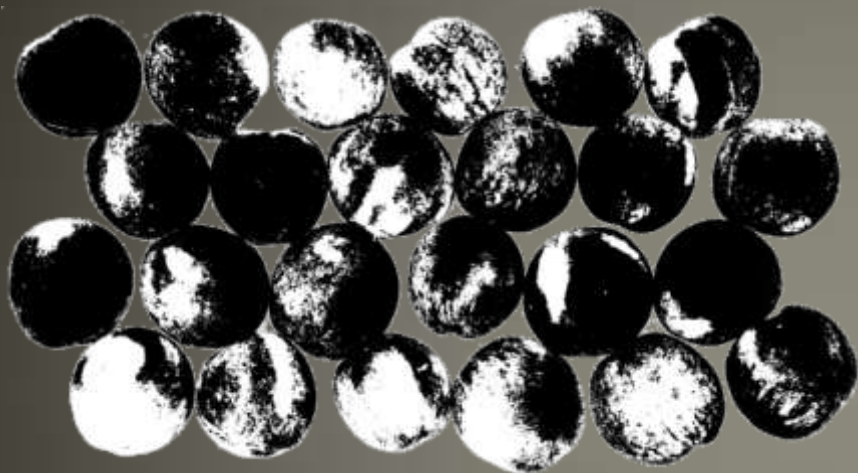
HV10 system, 24 randomly chosen peaches, blush side



OC14 system, 24 randomly chosen peaches, blush side



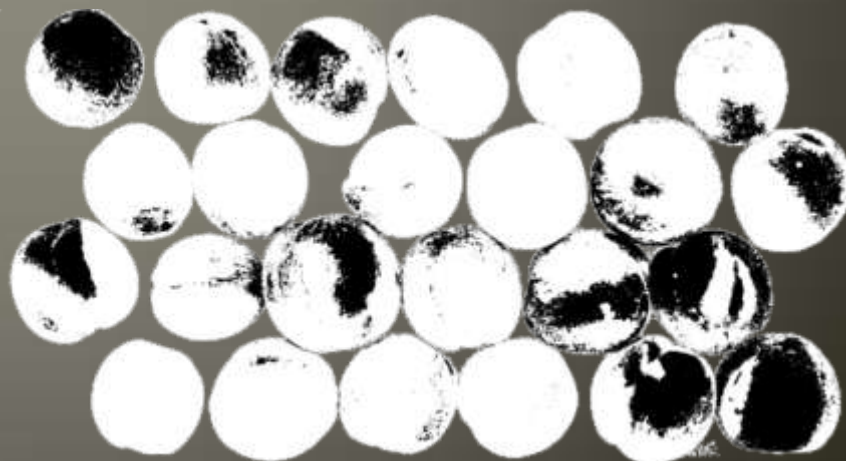
Percent Blush Coverage



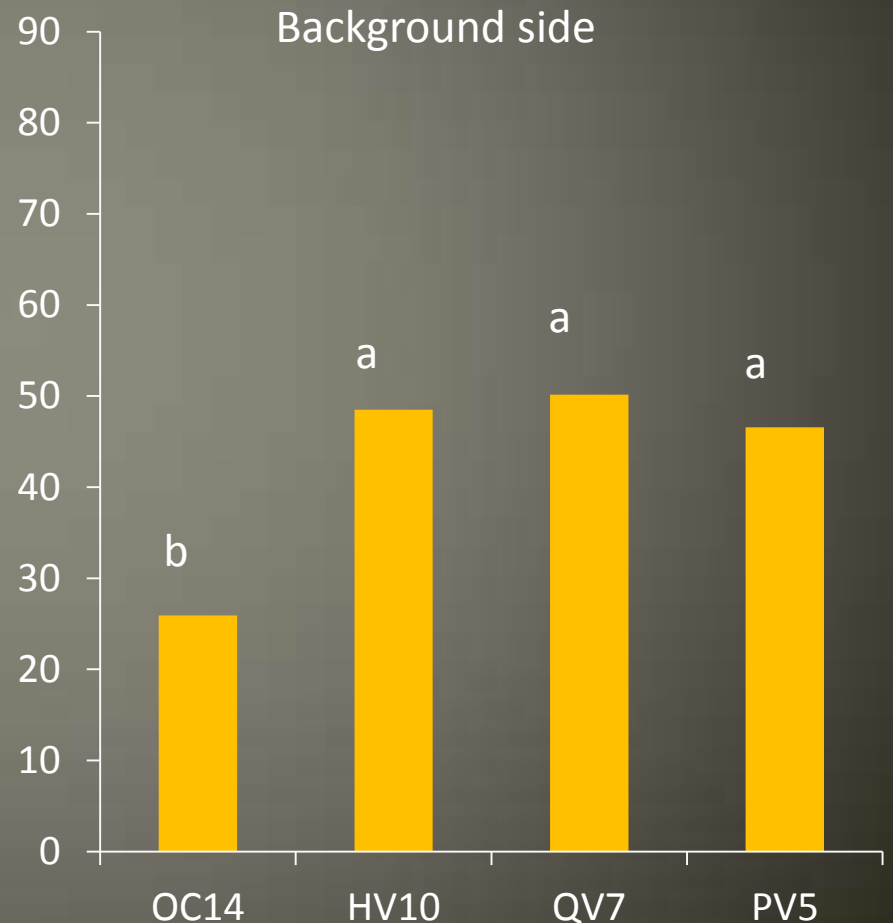
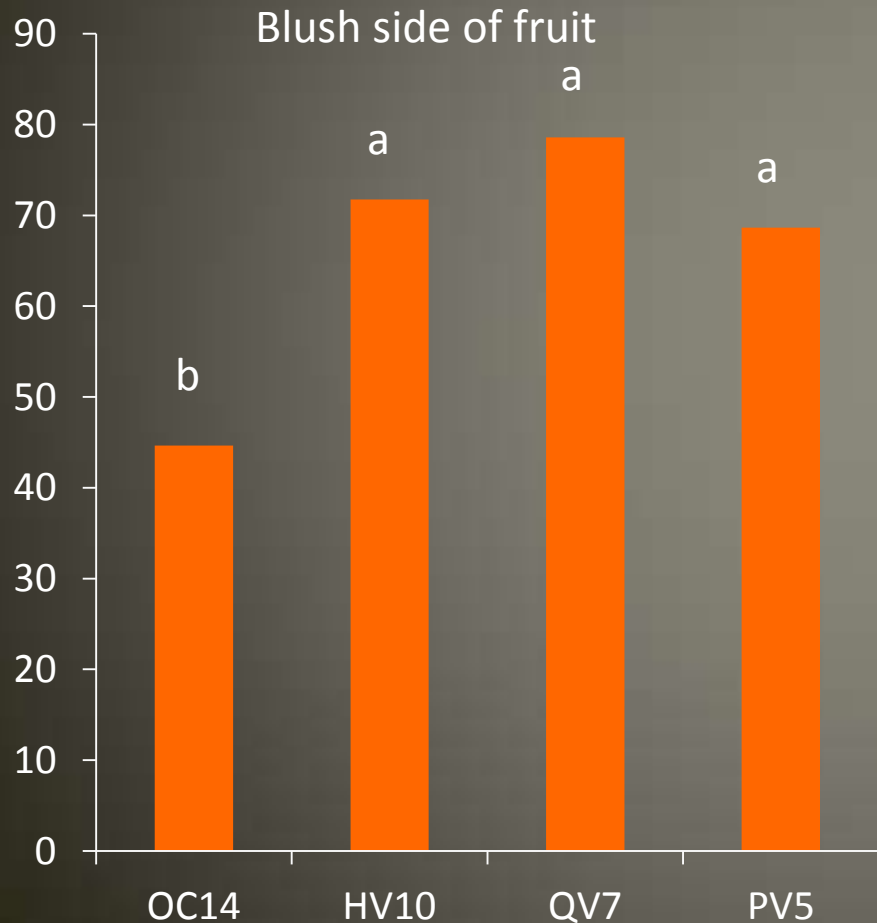
45.4% blush (indicated in black)



17.7% blush



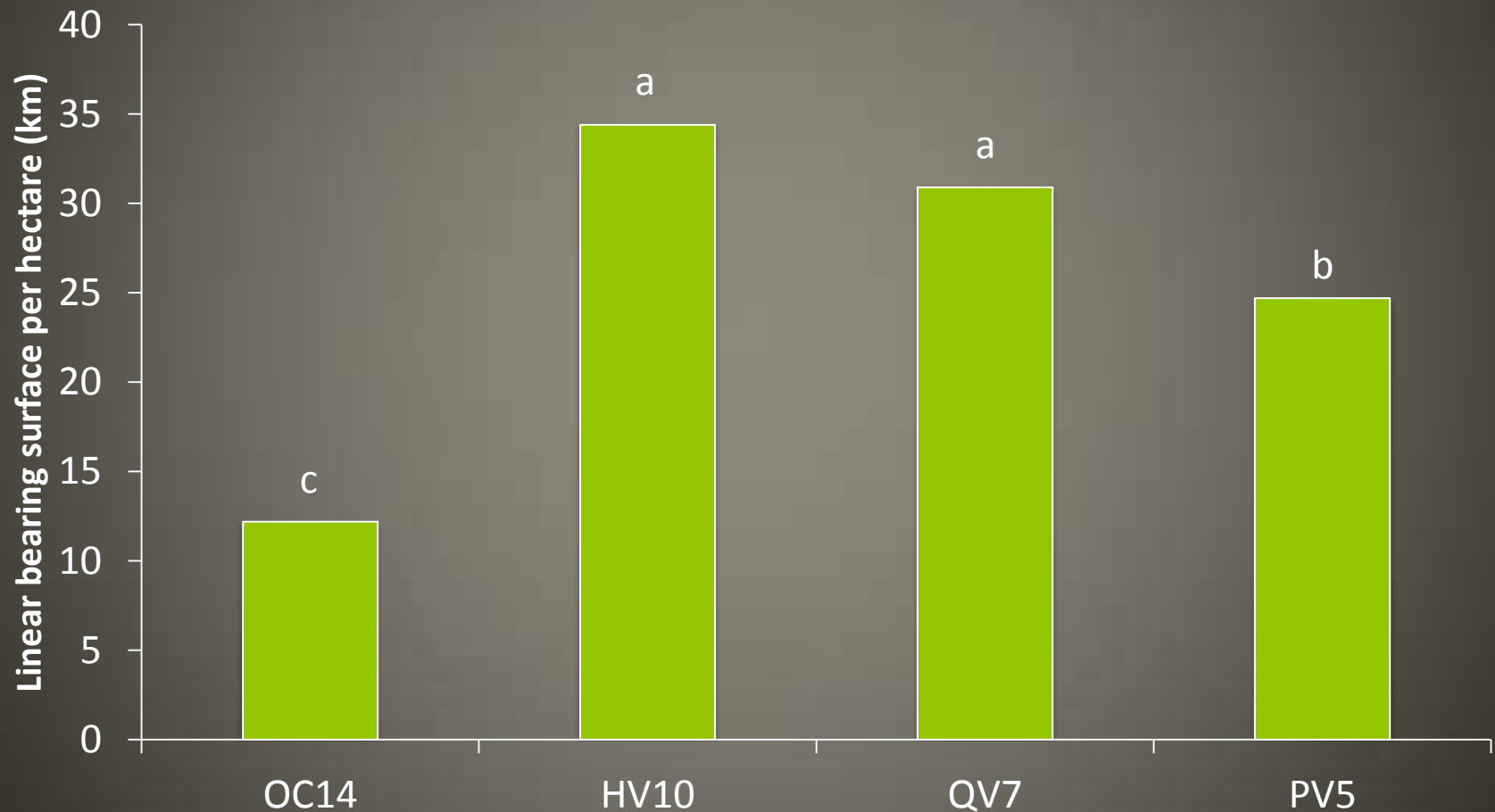
Blush Coverage (%), Loring



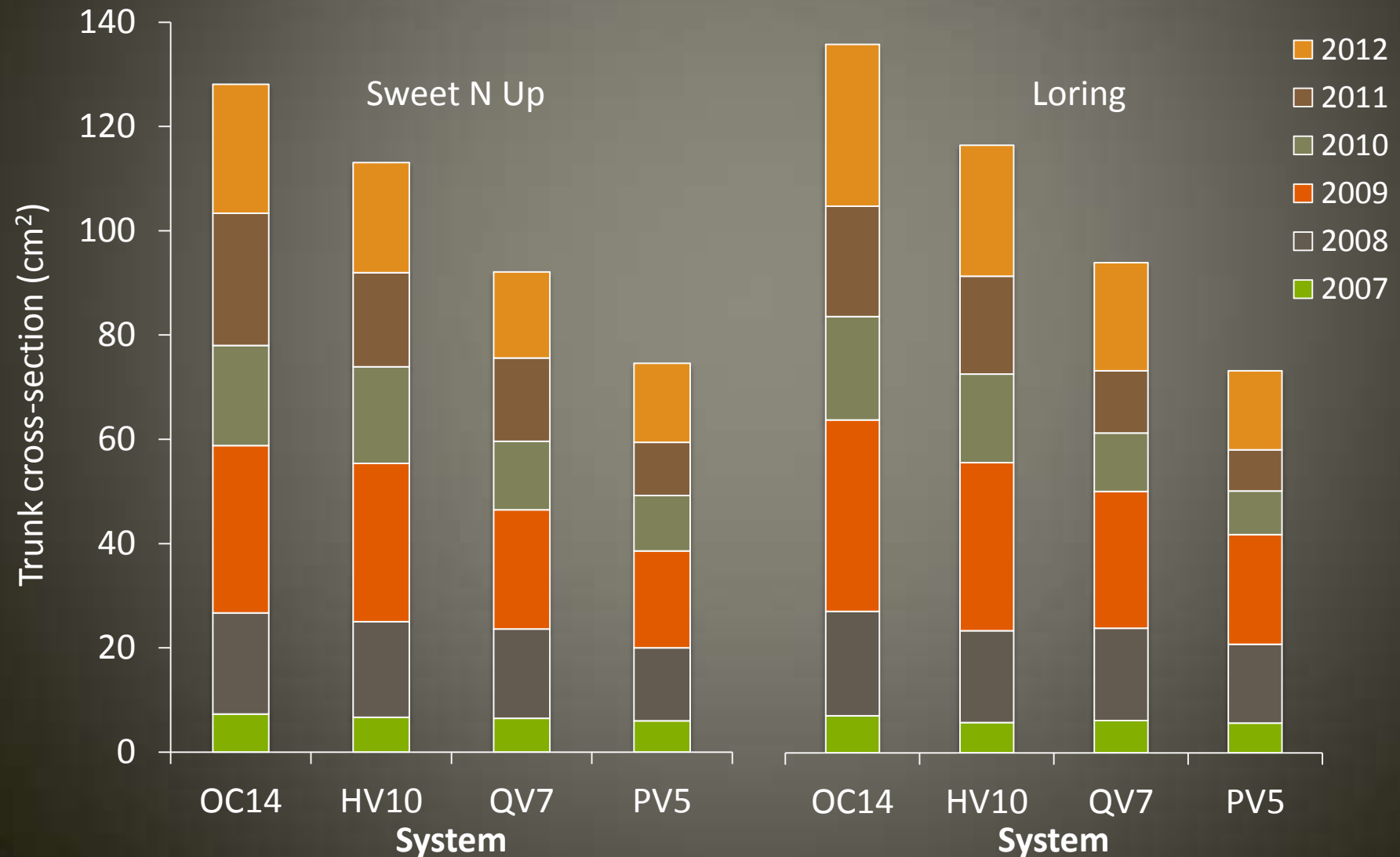
Why do V systems perform better?

- More linear bearing surface per acre
- Better light interception
- Training compatible with natural growth
- Less aggressive, 'retaliatory' growth
- They don't shade themselves excessively

Linear Bearing Surface by System, Loring



Trunk size by year and system



Income over specified costs / A, 2012

| Sweet N Up | | | | | |
|-------------|----------|----------|----------|----------|------------|
| | 2009 | 2010 | 2011 | 2012 | Cumulative |
| OC14 | \$ 1,741 | \$ 633 | \$ 2,014 | \$ 4,575 | \$ 8,963 |
| HV10 | \$ 2,938 | \$ 2,283 | \$ 4,534 | \$ 9,930 | \$19,685 |
| QV7 | \$ 2,556 | \$ 240 | \$ 4,255 | \$ 9,628 | \$ 16,680 |
| PV5 | \$ 2,809 | \$ (162) | \$ 2,169 | \$ 5,871 | \$ 10,687 |

Income over specified costs / A, 2012

| Loring | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------------|
| | 2009 | 2010 | 2011 | 2012 | Cumulative |
| OC14 | \$ 1,246 | \$ 1,764 | \$ 3,880 | \$ 7,455 | \$ 14,346 |
| HV10 | \$ 1,647 | \$ 3,311 | \$ 6,277 | \$ 15,886 | \$ 27,120 |
| QV7 | \$ 3,911 | \$ 436 | \$ 5,861 | \$ 15,677 | \$ 25,886 |
| PV5 | \$ 1,855 | \$ 226 | \$ 4,546 | \$ 11,952 | \$ 18,579 |

Summary

- V systems
 - Higher yield / A
 - Redder fruit color
 - More economic value
 - More efficient use of land
 - More bearing surface per acre
 - More large fruit, more small fruit, more fruit
- Open center systems
 - Very slight savings on labor
 - Larger average fruit size
 - Less fruit, also less large fruit (per acre)
 - More wood

Take Home Message.

2012 & 2013:

- **Best:** Hex V at 10 x 18 & Quad V at 7 x 18
- Quad:
 - Easier to get 4 good scaffolds
 - Earlier Bu. / A = best system for high value crops
- Hex:
 - Similar performance to Quad V with less initial investment
 - Scheduled replacement of declining peach blocks

Acknowledgements

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- Tom Kon
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- Summer crew



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- SHAP Extension Committee

