

UCCE Merced County Walnut Minimal Pruning Trial | 2015

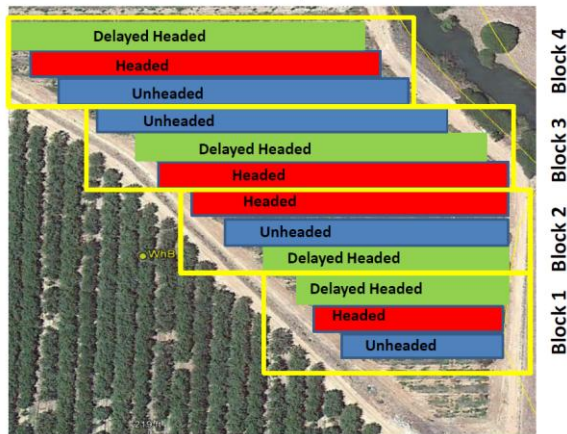
Trial Collaborators:

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Findings after five years:

- As of 2015, 5th leaf walnut cumulative yields of unheaded trees have outyielded headed and delayed headed treatments.
- With the exception of the 3rd leaf, trees are yielding similarly.
- Outside of the cumulative increase in yield, there were no differences in trunk diameter or light interception of the three treatments.
- Minimal breakage through plots - mostly wind twisting.
- Applied "No Pruning" to delayed headed treatments in 2014, which explains increased yield in 2015.

Plot Layout



Treatment Pruning Schedule:

	After planting	After year 1	After year 2	After year 3	After year 4
Headed	Three buds	Headed at 6.5'	Headed: removed 6-12" of shoot tip	Headed: removed 12" of shoot tip	Headed: removed 12-18" of shoot tip
Delayed Headed	Three buds	Headed at 6.5' once buds broke	Headed: removed 6-12" of shoot tip once buds broke	Left unheaded, some branch removal	Left unheaded, some branch removal
Unheaded	Three buds	Trained central leader	Access removal (<1 cut/tree)	Access removal (<1 cut/tree)	Access removal (<1 cut/tree)

Treatment Growth Measurements:

Treatment	Year 1 diameter change (mm)	Year 2 diameter change (mm)	Year 3 diameter change (mm)	Cumulative diameter change (mm)
Headed	21.5	30.4 B	78.4	108.8
Unheaded	22.6	35.3 A	78.5	113.8
Delayed Headed	21.6	32.AB	80	112.4

Different letters indicate different statistical groupings at p<0.05

Treatment Yields and PAR:

Treatment	July '13 PAR (%)	2013 Yield - 3rd leaf (tons/acre)	July '14 PAR (%)	2014 Yields - 4th leaf (tons/acre)	2015 Yields - 5th leaf (tons/acre)	Total (tons/acre)
Headed	24.8	0.350 B	48.1	1.36	1.41	3.12 B
Unheaded	24.6	0.675 A	49.3	1.57	1.78	4.02 A
Delayed Headed	23.9	0.303 B	46.7	1.41	1.68	3.39 B

Different letters indicate different statistical groupings at p<0.05



Unheaded (Spring 2014)



Headed (Spring 2014)

Current working hypothesis:

- Yield and growth will be the same this point forward, and only minimal cuts will be made.
- In order to help with an even bud break, whitewashing of the trees is not currently recommended for 2nd leaf unheaded trees
- Issues experienced in 2014-2015 suggest that a delayed heading should occur if trees fail to break buds in lower half of the tree.
- Delayed heading of walnuts in late May had minimal effect on growth in Merced County in 2015, providing the ability to "wait and see."