

# Training Young Walnut Trees

- Do you really need to prune them? -

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# Training Young Walnut Trees

- exploring new ideas -

“Training” occurs in years 1-6

- Traditional way: modified central leader

- Active scaffold selection & heading cuts
  - Establish a strong branching structure
  - Keep the tree growing to fill in space
  - Allow equipment access
  - Early crop will stunt the trees

- The new way: The No Heading method

- Minimal scaffold selection (thinning cuts only)
- NO heading cuts... ever
- Results:
  - Well developed trees
  - Earlier fruit production
  - Lower pruning costs

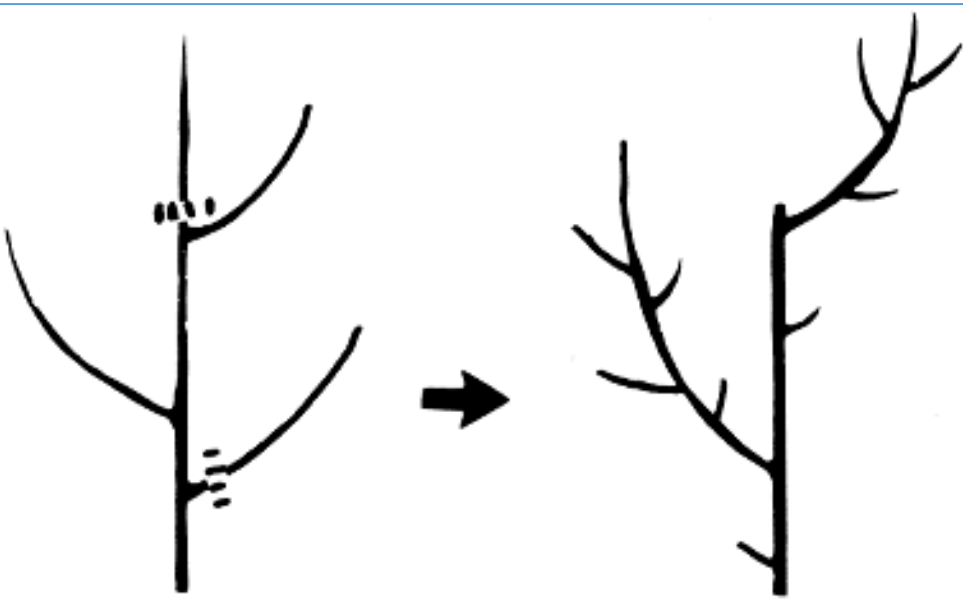


# UCCE “No Heading” Training Trials

Researcher	Dates	County	Variety	Rootstock	Spacing	Vigor
Lampinen	2004-2010	Colusa	Howard	Paradox	12' x 25'	Fair
Lampinen/ Hasey	2008 ->	Colusa	Chandler	Paradox	15' x 22'	Fair
Doll	2011 ->	Merced	Chandler	Paradox	22' x 24'	High
Caprile	2011 ->	Contra Costa	Chandler Chandler	Paradox Own rooted	18' x 24'	Good
Caprile	2011 ->	Contra Costa	Howard	Own rooted	24' x 24'	Low

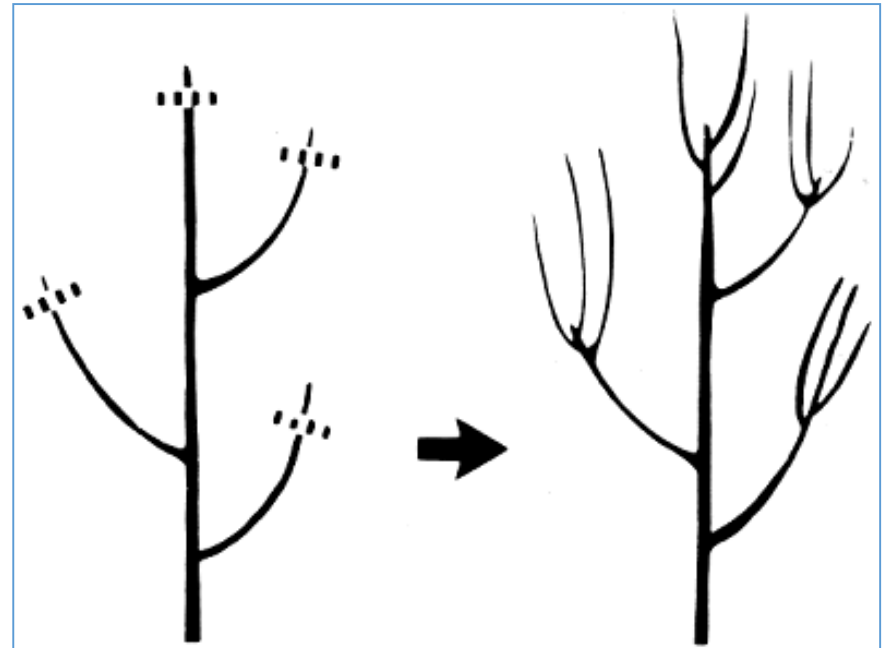
## Thinning Cut:

- Remove the entire branch
- Redirects growth to remaining branches
- Open's up the canopy



## Heading cut:

- Remove top of a branch
- Encourages branching below the cut
- Makes a denser canopy





# STEP BY STEP COMPARISON:

At planting: Both systems -> head at 3-5 buds

1<sup>st</sup> season: Both system -> grow a strong leader





# 1<sup>st</sup> Dormant Pruning:

- Select single leader
- Remove other branches



No Heading

- Select single leader
- Remove other branches
- head leader at 6-8'



Modified Central Leader

# 2<sup>nd</sup> Dormant pruning:

[2<sup>nd</sup> Season Goal: grow 1<sup>o</sup> scaffolds]

- Remove branches below 4-5'



- Select leader (tallest)
- Select 4-5 1<sup>o</sup> scaffolds
- Head leader/scaffolds by 1/4 - 1/3
- Remove branches below 4-5'





# 3<sup>rd</sup> Dormant Pruning

[3<sup>rd</sup> Season Goal: grow 2<sup>o</sup> scaffolds]

- Prune for access

Alternate year  
shoot growth

Less water use

First crop?

Central leader



No Heading



Modified Central Leader

- Head leader (1/4 – 1/3)
- Head a few to all 2<sup>o</sup> scaffolds
- Prune for access



# 4<sup>th</sup> dormant pruning:

[4<sup>th</sup> Season Goal: grow 3<sup>o</sup> scaffolds]

- Prune for access

1<sup>st</sup> or 2<sup>nd</sup>  
harvest




No Heading

- Head leader
- Head a few to all 3<sup>o</sup> scaffolds
- Prune for access



Modified Central Leader



The background image shows a large orchard with many trees. The ground is covered with a thick layer of fallen walnuts and leaves, suggesting a harvest season. The trees have dense green foliage, and the sunlight filters through the leaves, creating dappled shadows on the ground. A white text box is overlaid on the middle of the image.

~ 5<sup>th</sup> year and beyond: Both systems

- Prune for orchard access



# UCCE “No Heading” Trials Summary

Parameter	Unheaded	Modified Central Leader
Tree size – trunk caliper	similar	similar
Tree size – Light interception	similar	similar
Nut quality	similar	similar
Limb breakage	similar	similar
Water use	similar (less in year 3)	similar
Yield	Higher early yield	
Scaffold development	≥ , smaller, well balanced	Fewer, heavier scaffolds
Tree structure	Central leader, open	Spreading, denser
Pruning costs (year 1-5)	~\$ 120/A	~\$ 600/A

# 2015: Blank Bud Problem



- Poor budbreak on 2<sup>nd</sup> leaf trees
  - On headed and unheaded trees
  - Few branches below 8' on unheaded trees
- Why?
  - Excessive shoot vigor -> blind wood?
  - Low chill year -> poor leafout?
  - Leaders painted white!
- Solution
  - Don't paint where you want bud break
  - Head by mid May if bud break is poor



# Still To Be Determined:

## Will the UNHEADED trees on STANDARD SPACING:

- Fill in their tree spacing
- Develop strong structure to support high crop load
- Maximize productivity over the life of the orchard
  - Lower cost with early pruning & fewer trees
  - Earlier harvest (like hedgerows)
  - Without hedging -> maximize full yield potential (years 8 to 30+)

## Precautions:

- 1<sup>st</sup> year leader vulnerable
- Sunburn, frost, excess vigor, white paint can reduce bud break
- Option: head in May if leaders don't break correctly

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Presentation & handouts posted on Contra Costa County website:

<http://cecontracosta.ucanr.edu>

More detailed information:

- Walnut Research Reports: <http://walnutresearch.ucdavis.edu>