

# Mechanical Topping of Dormant 2<sup>nd</sup> Leaf Almonds

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## Are There Benefits to Mechanically Topping Trees?

- Many growers are mechanically topping almonds during the 2<sup>nd</sup> dormant season with the aim of drastically increasing yield in the 4<sup>th</sup> leaf harvest
- Other potential benefits may be decreased wind-throw while trees are establishing.
- Possible risks include increased disease potential or unrealized yield gains.

## Previous Almond Research Shows:

- Annual topping resulted in fewer *Alternaria* leaf infections than the control (Viveros 2003).
- No clear trends on yields were apparent from annual topping of three varieties (Viveros 2003).
- Mechanical hedging and topping of a 14<sup>th</sup> leaf orchard decreased total yield over the next four harvests (Edstrom & Viveros 1991).
- Fewer mummies remained on trees mechanically hedged and topped (Edstrom & Viveros 1991).
- Concerns about multiple heading cuts at same height on future tree structure & shading (Duncan 2015)

## Costs Associated with Mechanical Topping

Estimated Costs / Acre (2015)	
Machine Topping	\$50
Brush Stacking	\$20
Brush Removal	\$20
<b>Total Cost</b>	<b>\$90</b>

To break even at an almond price of \$2.50/lb, yields in 4<sup>th</sup> leaf would need be an additional 36 lbs/ac.

## Orchard Establishment & Treatments

### Establishment & Training

- Potted trees planted winter 2014/2015
- Headed at planting
- 1<sup>st</sup> dormant: 3-4 scaffolds selected and tipped
- 2<sup>nd</sup> leaf: removed crossing limbs & made balancing cuts

### Treatments

- **Control treatment:** trained as above, but left untopped & unpruned
- **Topped treatment:** mechanically topped at 9 ft. (Nov. 2016)

## Study Sites

### Orchard 1 (Tehama County)

- Nonpareil, Butte & Carmel on Nemaguard
- Soil type: Tehama loam
- 3 replicates; 20 trees each rep per variety

### Orchard 2 (Glenn County)

- Nonpareil & Monterey on Hansen
- Soil type: Cortina gravelly sandy loam
- 4 replicates; 20 trees each rep per variety



Mechanical topping of 2<sup>nd</sup> leaf almond trees.  
November 2016



Mechanically topped tree (left) compared to an untopped tree (right).  
May 2017

## Nonpareil yields in 3<sup>rd</sup> leaf (2017)

	Average yield (lbs / acre)	
	Topped	Untopped
Orchard 1	1157± 238	1149± 248
Orchard 2	304± 11	308± 46

There was no difference in yield between topped and untopped trees in either orchard. Yield data will be collected again in 2018 (4<sup>th</sup> leaf).

Right: White arrows point to multiple branches developing at the site of the mechanical heading cut.



**References:** Duncan 2015. Almond Board Project 15-Hort3-Duncan. Viveros 2003. Almond Board Project 03-MV-01. Edstrom and Viveros 1991. Almond Board Project 91-S3.

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