

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

Dani Lightle, UCCE Orchards Farm Advisor, Glenn, Butte, & Tehama Cos.

## 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 equivalent to the yield loss in 3<sup>rd</sup> leaf plus an additional 36 lbs/ac.

## 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. Photo: C. Montes

## 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)



Trees at Orchard 2 topped November 2016. Photo: D. Lightle

## Data Collection

Trees will be monitored over the next few years to look for differences in:

- Yield
- Growth habit
- Height & caliper measurements
- Breakage or windthrow

**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.