Small Producers Panel

Effective Practices & Economics for Small-Scale Production

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Overview

- Small scale olive production in California

1. Large***vs*** Small scale olive production.
2. High Density (**HD**) ***vs*** Super High Density (**SHD**) olive production.
3. Mechanization of HD production in California (…is here).
4. The marketing strength of the producing region (?).
5. The marketing strength of the producing cultivar (?).

- Effective practices of small scale olive production

1. Planting, training & pruning considerations.
2. Irrigation and fertilizer applications' considerations.
3. Harvest and milling considerations.

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Large ***vs*** Small

Typical large olive production setting in California

- Typically, 50 acres and above (average size of ~500 acres).
- More often SHD, although some HD groves fit in the category.
- Mechanization (partial, or total), at least in pruning and harvest, is more often the rule than the exception.
- Monoculture environment.
- Olives are either contracted to a large processor, or processed in company's own mill.
- The higher percentage of large scale olive growers do not produce their own olive oil.

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Typical large olive production setting in California

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Large ***vs*** Small (cont.)

Typical small olive production setting in California

- Typically, 50 acres or less (average size of 10-20 acres).
- More often HD, with very few SHD groves.
- Hand labor intensive, from pruning to harvest.
- Often times planted adjacent to vineyards, orchards, even vegetable crop fields.
- Small scale growers often mill the olives in custom milling facilities and bottle/sell the oil themselves.

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Typical small olive production setting in California

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SHD*vs* HD

Typical SHD olive production setting in California

- Typical spacing of **11-13** feet between the rows & **4-5** feet between the trees, resulting in as many as **~900** trees per planted acre (ongoing experimentation on even tighter spacing).
- Typical "Central Leader" training system with supported canopy.
- Total harvest mechanization and, at least partial, pruning mechanization.
- Often a combination of three cultivars: Arbequina, Arbosana, Koroneiki (ongoing experimentation on new varieties).
- Irrigated grove setting.
- Higher demand for water, nutrients and control for pests and diseases.
- Average harvest cost: **~$350** per ton.

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Typical SHD grove

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SHD*vs* HD (cont.)

Typical HD olive production setting in California

- Typical spacing of **16-20** feet between the rows & **8-12** feet between the trees, resulting in **200-300** trees per planted acre.
- Typical "Scaffold Branches" training system with some tree support during the first years of training.
- For most part, and up to now, some partial harvest mechanization, while pruning is done mostly by hand.
- Over 150 varieties to select from. Some fit better than others to certain climatic and soil conditions.
- Can be irrigated, or non-irrigated, depending on location, cultivar, yield and oil quality specifications.
- Lower demand for water, nutrients and disease prevention measures, mainly due to relaxed spacing.
- Average harvest cost: **~$600** per ton.

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Typical HD grove

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Current small *vs* large production "market share"

- More than 35,000 acres and over 400 growers……..

- Higher acreage under large scale, mostly SHD production, but fewer growers, mostly concentrated in the Central and Sacramento Valleys.
- Arbequina, Arbosana and Koroneiki dominate the large scale production.
- Fresh, affordable, good quality oil, but with limited flavor profile span.

VS

- More growers and way more varieties typically under the small scale production.
- Unique flavor profiles can be achieved as a result of variety and site selection.
- Gourmet, ultra premium potential branding.

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Does small scale olive production pays off?

Some considerations:

- "Napa", "Sonoma" and "Paso" premium EVOO appellations, as is the case with wine, do not really exist with olive oil so far, although this might slowly change.
- The cost of land for potential development (especially small) skyrocketed within few years.
- The "story" of a unique variety behind a label that might justify a higher premium $, is about to change !

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Mechanization of HD groves in California

- Complete mechanization from pruning to harvest on HD groves.
- Premium varieties such as Coratina, Hojiblanca and Piqual.
- Ultra Premium quality and flavor profiles at significantly reduced cost of production.
- The first groves to be developed in 2016-2017 in the Northern Sacramento Valley.

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Making the most of a small scale production- planting

…by making the most of the land.

- Planting at a spacing that will accommodate as many trees as possible, without sacrificing adequate growth and light exposure.
- Depending on site and soil type, close to **~16'** between rows & **~12'** between trees.

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Making the most of a small scale production - training

…by giving the trees shape early on.

- Create early on the main scaffold branches.
- That will be the basis for future healthy canopy development and subsequently healthy crops.

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Making the most of a small scale production – irrigation-fertilization

- Adequate (but not excessive) irrigation benefits:
  1. Increased yield.
  2. Increased quality through reduction of bitterness, as well as woody and astringent flavors.
  3. Better milling (adequate fruit moisture for better oil extraction).
- Adequate fertilization benefits:
  1. Healthier canopy for better tree function.
  2. Increased set and yield with Boron application pre-bloom.
  3. Potassium also important early in the season, as well as during oil accumulation stage.

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Making the most of a small scale production - pruning

…by reshaping and removing excess and unproductive wood through pruning.

- Do not let the tree shape and vigor get out of control.
- Negotiate "**piece rate**" work with your labor contractor. It will save you money, granted you supervise the crew closely.
- Alternate between **"heavy"** and **"light"** pruning every other year as a way to save costs.

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Making the most of a small scale production - pruning

Skipping pruning passes will eventually:

- Decrease yields.
- Deteriorate quality of olives and olive oil, mainly due to decreased light in the canopy and increased debris (MOO) at harvest.
- Increase harvest costs.

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Making the most of a small scale production - pruning

- Labor intensive harvest due to untrained, unpruned tree.

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Making the most of a small scale production - harvest

- Unless it's a 'heritage tree', not allowed to be pruned, there is no reason to keep trees tall enough that have to use ladder.
- Increased liability and expensive harvest.
- The cherry-picking box makes it even more expensive. Try to avoid!

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Making the most of a small scale production - harvest

- Using nets and shaker tools is a much more efficient way to speed up the harvest process.
- Supervision is necessary in order to avoid excess stepping over harvested olives.
- Negotiate a "**per ton**" price with your labor contractor. No billing surprises at the end of the day, and faster overall harvest for a lower cost.

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Making the most of a small scale production - milling

- Quality of the milling process is very important, but at the same time cost of milling is important as well.
- The number of mills has been increasing and pricing is becoming more competitive.
- $450 per ton milling cost used to be more of the norm, but you can find excelled milling services closer to **$250** per ton currently.

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Thank you

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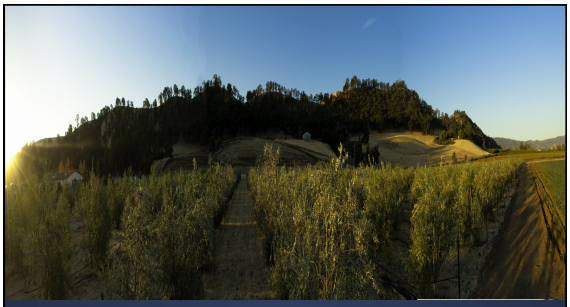

Pamela Marvel, Owner - Grumpy Goats Farm
Milagros Castro, Agronomist and Olive Management Advisor

Introducing Grumpy Goats Farm

- Twenty acre family farm in Capay Valley
- Eight acre olive orchard established in 2008-2010; first harvest 2010
- Certified organic in 2012
- Specializing in producing robust extra virgin olive oils (Picual, Coratina)
- Award winning: 17 gold medals, Best of Show in Los Angeles IOCC 2013
- Farming practices: High density planting (13' x 18'), Drip irrigation; Fertigation, Annual pruning, Summer spraying for olive fruit fly, Yearly leaf analysis for nutrition needs, Weed control by mowing, Harvest by hand--moving to electric shakers, Irrigation control by multiple means
- Using groundwater from domestic well
- Farmed by owners Pamela Marvel and Stuart Littell

Examples of Economical Practices

- Pruning: The advantage of keeping an open middle and skirt pruning at ground level on harvesting efficiency (Milagros)

- Weed control: Efficiency of having no berms, no plastic mulch, using organic spray, using french plow or similar (Milagros)

- Harvest: Efficiency of experienced teams for harvest with shakers (Milagros)

- Harvest: Advantage of ripe full sized olives over unripe undersized olives for speed of harvest (Pamela)

- MIlling: Advantage of having a competent mill that knows you (Pamela)

- Harvest: Efficiency of using electric shakers over hand harvest (Pamela)

- Comparison hand vs electric shakers for 3 picking days in 2015
- Two teams of 16-17 – team1 using picking baskets, team 2 using shakers and nets
- Results:
  - Team 1 picked 130 Coratina trees at cost of $5900
  - Team 2 picked 576 Coratina trees at cost of $8741
- Shaker team picked 82% of the trees at 60% of the cost

- Packaging: Choosing sturdy economical shippers

END