# The Olive Grove

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# Planting to Harvesting Made Simple



# THE OLIVE TREE POEM

(Author unknown)



We are just like the olive tree that I see now from my bedroom window. No matter how in the cold and harsh winter they are not broken.

Olive trees are cold tolerant down to 14 degrees Fahrenheit.



No matter how in the hot summer they are not dried and burned.

Olive trees are drought and heat tolerant.

No matter how in the autumn wind they are not scattered.

Olive trees are evergreen.



As days come and ages past they bloom again, fresh, young and so beautiful.

Olive trees can live for thousands of years and still produce fruit.

**The Olive Tree of Vouves** (vooves) Crete Greece is one of the oldest olive trees alive and still produces fruit.

University of Crete have estimated it to be 4,000 years old.

Cultivar: Tsounati

41 feet wide with a diameter of 15 feet.



**THE OLIVE GROVE**

# PLANTING AN ORCHARD

**TRADITIONAL PLANTING** has been practiced for centuries.
When an orchard is planted TRADITIONALLY it means that the trees are spaced 15' to 18' get apart. Traditional orchards are harvested by hand or by shakers and irrigation is not necessarily needed. The trees don't have to be fertilized as often. Also, several different varieties of olive trees can be planted together in the orchard. The Olive Grove Orchard now has 9 different



varieties : Arbequina, Manzanilla, Arbosana (Spanish Variety), Koroneiki (Greek Variety), Coratina, Frantioi (Italian). Chiquitita cross between Pictual & Arbequina (Spanish varieties)

The Olive Grove Orchard is Traditionally or Low Density planted.

## HIGH & SUPER-HIGH DENSITY PLANTING

Commercial farms most often plant "High Density" or "Super-High-Density" orchards. High density means that trees are planted 6 feet apart. This allows farmers to plant 600 trees per acre and still leave a 20 ft drive for machinery. Super high density means farmers space the trees 3 feet apart and can plant as many as 1200 trees per acre. When planting super high or high



THE OLIVE GROVE

density farms, irrigation is needed and the trees must be fertilized every 3 weeks for healthy fruit production.

With few exceptions, only three olive varietals are utilized in Super-High-Density or High-Density Orchards: Arbosana, Arbequina and Koroneiki. These are trees are of small vigor and allow for "Mechanical Harvesting". Mechanical harvesting was brought about due to the shortage of agricultural workers and the high labor costs.

**Super-High Density Olive Harvester**



**Olive Tree Mechanical Shaker**



**The Olive Grove Harvests by Hand.**



**EXTRA VIRGIN OLIVE OIL**

The Olive Olive Grove harvests when some are green, some are turning red and some are purple. (Purple their most ripened stage.) Usually the entire tree is harvested at once.

Olives harvested too soon will make an acidic oil and this is not considered high quality. For olive oil to be considered "EXTRA VIRGIN" or of the highest quality, it must meet special standards. First, the level of Oleic Acid must be less than 1% and it may not be heated or extracted by use of chemicals. Second, the oil should be of green-gold in color - have a strong green olive aroma, fresh olive taste and a peppery finish. The Olive Grove extra virgin olive oil meets all of these standards.

**Virgin olive oil** doesn't have to meet the same Oleic Acid standards and it can't have additives.

Virgin Olive oil is a lower quality oil due to higher oleic acidic levels of over 1 % but less than 3%, lighter yellow color, not as intense flavor or aroma. This can be caused by low quality fruit, heat, 2nd milling, storage and processing.

Poor quality oil may be contributed to the quality of the fruit as well. Insects may have gotten there first, chemicals were sprayed on the fruit, harvested too early or too late, sat too long, nutritional.






## What are refined oils and unrefined oils.

Refined oils are not high quality oils. Heat and/or additives were used to extract it. Unrefined oils are made only from the fruit, cold pressed (uses no heat) and have no additives.

**"PURE OILS" or "LIGHT OILS":** These are tricky names for products that are mixed with both "VIRGIN" oil and REFINED oil. These are packaged and sold as a cooking oils. These oils have very little flavor, are pale yellow in color, with an oleic acid of 3-4% and very little aroma.

It is very important that you understand the labels and the different types of olive oils on your grocery store shelf.

Extra virgin olive oil is usually found in tinted green glass bottles to preserve the quality. Lower quality oils are usually packaged in plastic or clear glass but not always.

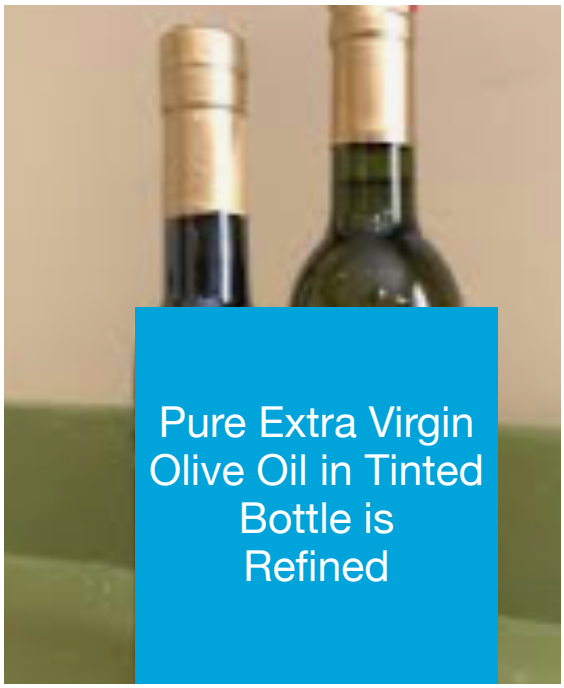
You may find tinted glass bottles that use words like pure or light. Always read the fine print and look for a harvest date.

Unfortunately, the USDA does not require test results to be put on labels. The USDA does require that oils are labelled Extra Virgin, Virgin, Pure, Light and Pomace but most consumers don't really understand what the labels mean.










“Extra Virgin Olive Oil” has a flash point (burn / smoke point) of 410 degrees and can also be used for low heat pan frying, salads and dips. Once the flash point is reached some oils begin to breakdown and can become toxic and generate free radicals. Research has shown that extra virgin olive oil does not become toxic or lose any of it health benefits even after reaching it’s flash point. It can lose some of it’s flavor though. Refined oils have a higher flashpoint but lack the nutritional value of unrefined oils.

## How does our extra virgin olive oil compare?

**From:** Selina C Wang
**Date:** Tuesday, Sep 11, 2018, 5:14 PM
**To:** Davis, Cambren <
**Cc:** Louise Ferguso
**Subject:** Re: Florida Oil

Dear Cambren,

Both chemistry and sensory tests show that your oil is extra virgin grade (well below the USDA limits) with positive sensory attributes such as fruitiness, bitterness and pungency.

Hope you find the below information helpful.

Best regards,
Selina

**FFA:** 0.14±0.00
**PV:** 5.0±0.14
**K232:** 1.66±0.01
**K268:** 0.11±0.01
**ΔK:** 0.00±3E-04
**Sensory:**
Fruitiness: 2.8
Ripe fruit: 1.7
Green fruit: 1.1
Bitterness: 1.8
Pungency: 2.2

Selina Wang, Ph.D.

Assistant Specialist in CooperativeExtension, Department of Food Science and Technology

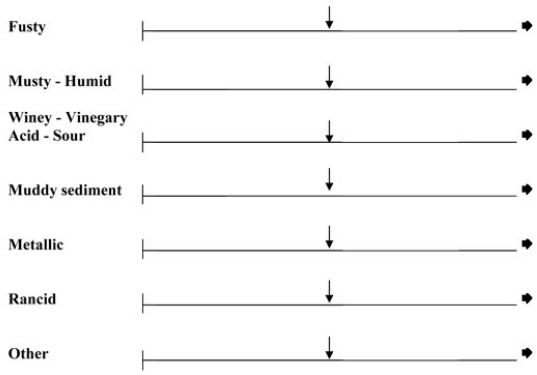
Research Director, Olive Center at Robert Mondavi Institute for Food and Wine Science

University of California, Davis

## INTERNATIONAL OLIVE OIL COUNCIL (IOOC)

**Profile Sheet**

**DEFECTS**




**POSITIVE ATTRIBUTES**




**Name of Taster**:

**Sample Code**: **Date:**

## INTERNATIONAL OLIVE OIL COUNCIL (IOOC)

**Profile Sheet**

**DEFECTS**

Fusty
Musty - Humid
Winey - Vinegary
Acid - Sour
Muddy sediment
Metallic
Rancid
Other

**POSITIVE ATTRIBUTES**

Fruity
Bitter
Pungent

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# OLIVE TREE PESTS



## Verticillium Wilt

Verticillium is a fungus that survives in the soil and in the roots of an infected tree. The disease can be spread when the soil is tilled, by water irrigation and by pruning tools that have not been disinfected after pruning a diseased plant. When an olive tree has verticillium wilt, the leaves on one or several branches will wilt and stick to the branch. This wilting will take place during the growing season and will progress to other branches. Verticillium wilt can kill a tree. There is no known method of control. The only way to manage verticillium wilt is to avoid planting an olive tree in an infected site.

## Olive Knot

Olive knot is a bacterial disease. It is generally found on primary and secondary branches. Signs of olive knot are galls/knots that are ½ inch to 2 inches in diameter. The bacteria enter through a wound or opening in the tree. Olive knot interrupts the water and sugar supply to the tree; when this happens it causes defoliation and dead branches. The bacteria are present in the olive knots, and this bacterial disease spreads by watering and rain. The treatment is preventative.



## Ants

Ants can be a sign of a bigger problem in your grove. Ants crawling on tree trunks and branches can indicate a scale insect problem. If you find ants, you should check the tree for scale insects or signs of scale insects like sooty mold.





## Olive Bud Mite

Olive bud mites are not native to Florida, but they have been found on olive trees in several Florida olive-growing areas. Symptoms of olive bud mite presence include leaf curling (Figure 4) and flower or bud drop. Preventing the spread of these pests is very important. As always, do your best to only import and move olive trees that you know are free from pests.



## Olive Shootworm

The olive shootworm, *Palpita persimilis* has been found in central and southern Florida on various plants, but it is rarely reported on the olive trees in Florida. The larvae can cause defoliation of new growth. The larvae tie leaves together with silk to make nests on shoot tips and as larvae age they will chew holes in leaves. If you find this pest in your olive grove it must be reported. The larvae also feed inside the fruit destroying the pulp and making way for secondary bacteria and fungi which then rot the fruit and degrade the quality of the oil.



## Processing Olives into EVOO



To produce the highest quality extra virgin olive oil, the olives must be milled within 24 to 48 hours of harvesting.

Olives are washed and fed into the HOPPER of our HAMMER MILL. As they are fed in they're driven against a metal grate and pulverized.



The paste is then fed into the MALAXATION chamber. The temperature of the oil should not rise above 86 degrees Fahrenheit to be considered cold pressed and to preserve the quality and nutritional value. This cycle can last 20 to 60 minutes. The paste is churned or malaxed to help separate the oil and water.





The oil is extracted from the paste using a process known as CENTRIFUGE.
The centrifuge chamber extracts and separates the oil from the fruit water. The water and mash are discarded. The oil is caught in Stainless steel containers.

Naturally the sediment falls to the bottom and is drained out, this is called RACKING. The oil is bottled & labeled with the harvest date and year.



The leftover pomace and crushed pits are mixed with the compost and scatted back onto the trees for natural fertilization. Olive pits are high in Potassium. Potassium is the most abundant mineral, followed by odium, calcium and magnesium. Olives need these nutrients to produce healthy fruit.

TOPPING the TREES, COLLECTING the LEAVES and FERTILIZING with POMACE.









Olive trees need to be topped every few years and should be kept to the height of 12 feet to make them easy to harvest.

# Fertilization Schedule

Valentine's Day - Soil Sample

Easter - Fertilizer Application

4th of July - Tissue Samples and Soil Sample

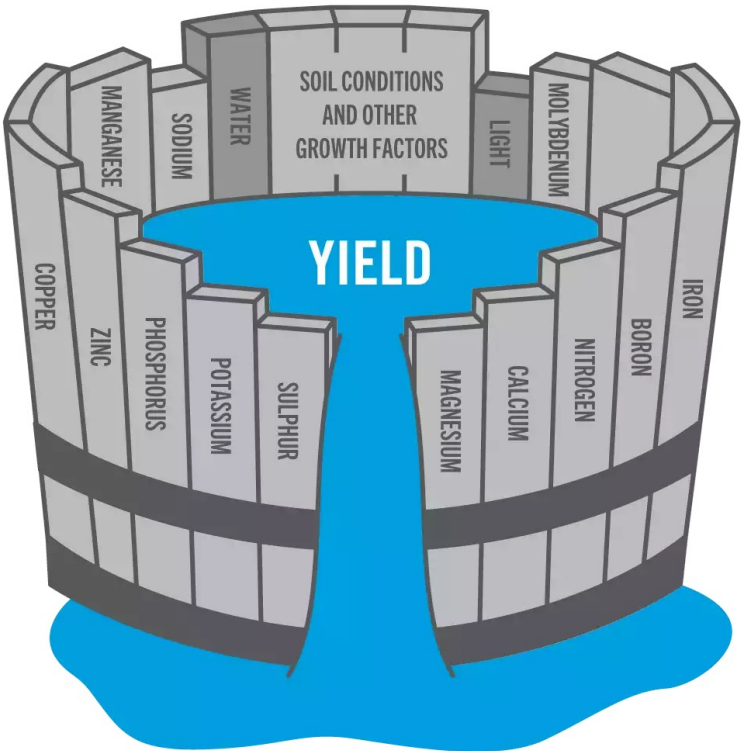
Labor Day - Last chance to correct Soil and Tissue composition

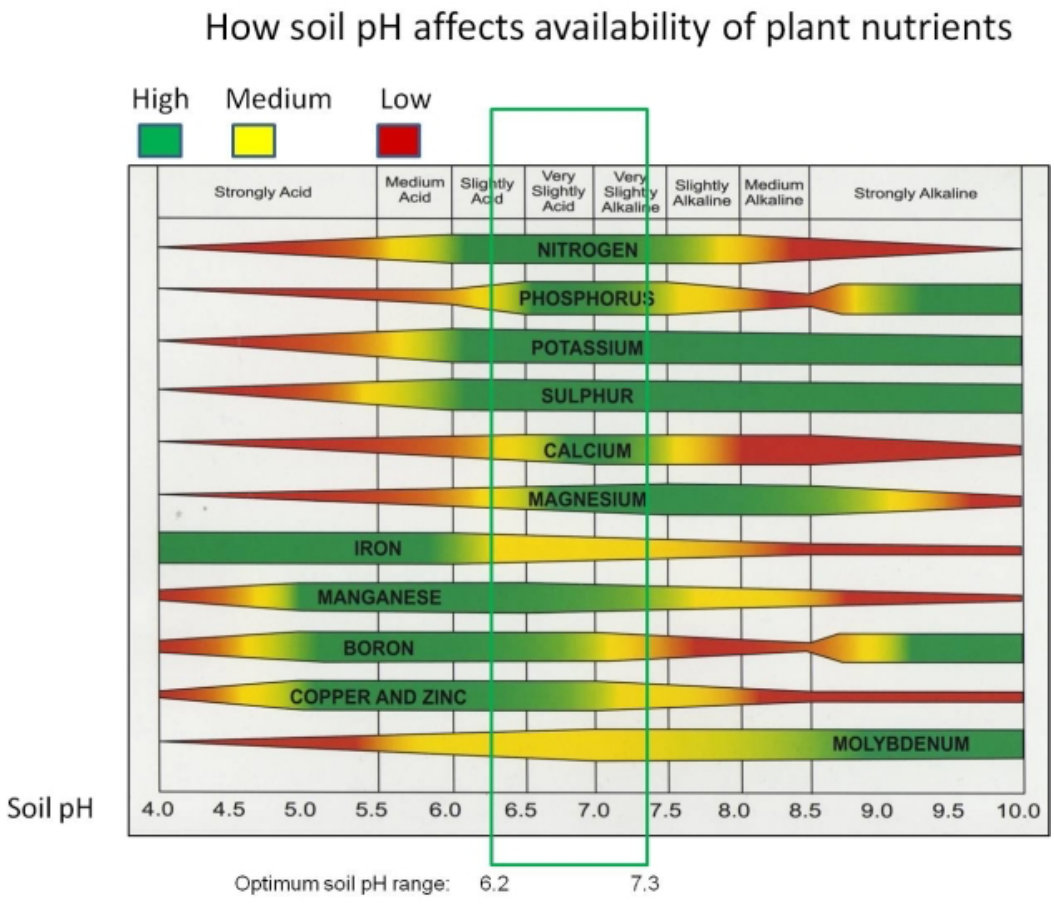
Christmas - Boron boost

## Fertilization Numbers

| 10 | - | 10 | - | 10 |
|---|---|---|---|---|
| N | | P | | K |
| Nitrogen | | Phosphate | | Potassium |

Expressed as Percentage by Weight


SOIL CONDITIONS AND OTHER GROWTH FACTORS
WATER
LIGHT
MANGANESE
SODIUM
MOLYBDENUM
COPPER
ZINC
PHOSPHORUS
POTASSIUM
SULPHUR
MAGNESIUM
CALCIUM
NITROGEN
BORON
IRON
YIELD


How soil pH affects availability of plant nutrients
High
Medium
Low
Strongly Acid
Medium Acid
Slightly Acid
Very Slightly Acid
Very Slightly Alkaline
Slightly Alkaline
Medium Alkaline
Strongly Alkaline
NITROGEN
PHOSPHORUS
POTASSIUM
SULPHUR
CALCIUM
MAGNESIUM
IRON
MANGANESE
BORON
COPPER AND ZINC
MOLYBDENUM
Soil pH
4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0
Optimum soil pH range: 6.2 7.3

# Plant/Soil Analysis

"Improving Growth... With Science"

**Waters Agricultural Laboratories, Inc**
257 Newton Hwy | Camilla, GA 31730- | Phone (229) 336-7216

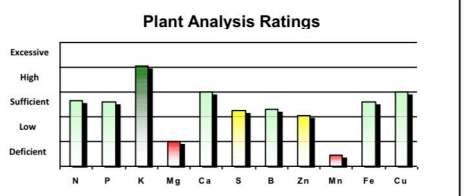
| Customer: 26463 | Sample ID: GROVE 1--GROVE 2 |
|---|---|
| CAMBREN DAVIS<br>15016 RESTER DR<br>BROOKSVILLE, FL 34613-<br>UNITED STATES | Grower: CAMBREN DAVIS<br>FarmID: CAMBREN DAVIS<br>FieldID:<br>Crop: OLIVES<br>Stage: VT |
| | Received: 6/17/2026<br>Processed: 6/18/2026<br>Lab Number: 233105PT<br>Layer ID:<br>Rep. Name: |

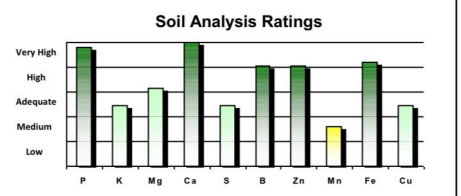
**Plant Tissue Laboratory Data: 233105PT**

| Element | N % | P % | K % | Mg % | Ca % | S % | B (ppm) | Zn (ppm) | Mn (ppm) | Fe (ppm) | Cu (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Result | 1.96 | 0.29 | 1.49 | 0.10 | 1.01 | 0.23 | 32 | 23 | 11 | 65 | 9 |

**Soil Laboratory Data: 231908SP** **Test Method: Mehlich I**

| Element | P | K | Mg | Ca | S | B | Zn | Mn | Fe | Cu |
|---|---|---|---|---|---|---|---|---|---|---|
| Result (lbs/a) | 249 | 119 | 175 | 4262 | 40 | 2.1 | 10.5 | 13 | 36 | 1.2 |




**Plant Ratios - Actual / Sufficient**

| Ratio | N / S | N / K | P / S | P / Zn | K / Mg | K / Mn | Ca / B | Fe / Mn | Ca / K | Ca / Mg |
|---|---|---|---|---|---|---|---|---|---|---|
| Actual | 8.5 | 1.3 | 1.3 | 126.1 | 14.9 | 1354.6 | 315.6 | 5.9 | 0.7 | 10.1 |
| Sufficient | 6.3 | 2.3 | 0.9 | 45.0 | 1.2 | 123.1 | 156.3 | 1.0 | 0.8 | 1.0 |

**Additional Soil Laboratory Data**

| pHw | pHb (Adams-Evans) | CEC (meq/100g) | Na (lbs/a) |
|---|---|---|---|
| 7.1 | 7.95 | 11.9 | |

**Base Saturation**

| K % | Mg % | Ca % | H % | Na % |
|---|---|---|---|---|
| 1.3 | 6.1 | 89.3 | 3.4 | |

**Recommendation Comments**

**The following Plant nutrient levels are low, deficient or borderline: Magnesium-Manganese-**

**The following Soil nutrient levels are low, deficient or borderline: Manganese-**

~ Apply 1/2 gallon magnesium chelate or 5 lbs of magnesium per acre, application should be applied as a foliar spray in a minimum of 25 gallons of water per acre or applied through irrigation.
~ Apply 1/2 gallon of manganese chelate per acre or comparable manganese material. Application should be applied as a foliar spray in a minimum of 25 gallons of water per acre or applied through irrigation.
~Above applications should be made only if crop is NOT within 30 days of maturity. If more than one foliar application is made, suggest that 1/2 be applied now and 1/2 5-7 days later. Use only material approved for foliar application.
~pH of 7.1 is adequate.

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**Every part of the olive tree can be used.**

Leaves are used medicinally in teas and extracts.

Olives can be cured and stuffed for the table and in martinis.

Old or expired olive oil can be used for heat and light.

Castile Soap (olive oil soap) is made from olive oil.

Olive wood can be carved into spoons, bowls, tools and other items.

Olive oil can be used to polish and clean wood.

Olive oil can be used as moisturizer for your face and body.

Olive leaf tea can boost the immune system and cure some bacterial, viral and fungal infections.

You can BONSAI an olive tree and it will still blossom and fruit. You can keep an olive tree in a pot forever.

Olive oil can be heated and used to treat dry scalp and brittle hair and help mend split ends.

The crushed pits can be scattered back on the trees for fertilizer.