

2018 AOOPA Annual Member Meeting

San Antonio, TX, 02/24/2018

OLIVE ORCHARD DEVELOPMENT



AGROMILLORA CATALANA – AGROMILLORA IBERIA – AGROMILLORA SUR – AGROMILLORA PRODUÇÃO – NORTH AMERICAN PLANTS – AGROMILLORA CALIFORNIA
AGROMILLORA AUSTRALIA – AGROMILLORA AUSTRALIA JV – AGROMILLORA MÉDITERRANÉE – AGROMILLORA MAROC – AGROMILLORA FIDAN
AGROMILLORA MIDDLE EAST – AGROMILLORA USA – AGROMILLORA FLORIDA

- Property Analysis
 - Climate & Planting Timing
 - Soil Pits
 - Soil Mapping
- Soil Preparation
 - Ripping
 - Amendments
 - Mounding
- Irrigation
 - Drip Irrigation
 - Soil Moisture Monitoring
- Trellis
 - System to Suit your Planting
 - Wire vs. No wire
- Planting
 - Tree Format: Standard, Smarttree, Large
 - Planting Density
 - Planting Method
 - Pre/Post Planting Weed Control

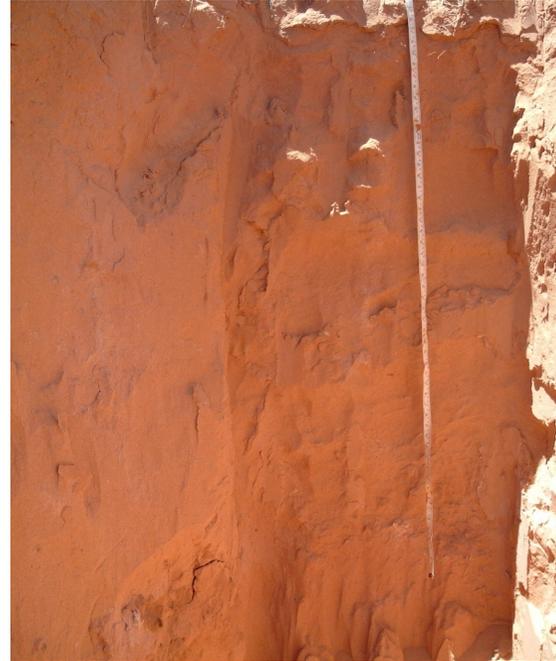
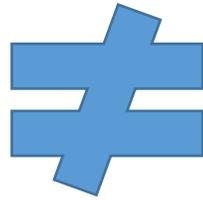
Climate Considerations:



- Olives need a minimum of 200 chilling hours to produce fruit.
- Olives can not survive in areas of prolonged sub-freezing temperatures and damage may occur in areas with moderate sub-freezing temperatures. (Some varieties are more suitable for cold temperatures than others)
- High humidity can create orchard management challenges.
- Freezing temperatures during harvest period can cause reduction in fruit/oil quality.
- Rain during spring flowering can affect pollination
- Prolonged warm weather (mild winters) can create orchard management challenges.
- In areas of frost, you want start planting after the last spring frost, and finish at least 45 days prior to the earliest winter frost.
- In areas of mild winter conditions you can plant throughout the winter.
- Olives can be planted throughout the summer as long as adequate water is available for plant irrigation immediately following planting. It is also recommended to have water and shade available for unplanted product.



What's on
Top
doesn't
always
show you
what's
below the
surface





Ideally Soil Pits should be dug in a 225x225 grid (1 pits per 2.5 acres) at a depth of 6-7 feet. Soil should be analyzed to understand the soil profile and samples should be taken to identify at least: pH, sodium, magnesium, calcium, potassium.



Olives grow well in marginal soil and can manage higher levels of pH, boron and some degree of salinity.

A suitable water source should be detected and tested at a minimum for: pH, electro-conductivity (EC), Sodium, Bicarbonate (HCO_3), sodium absorption ration (SARS), chloride, boron, nitrate (NO_3).

From your soil pit grid you can create a soil map (by similar soil type) that will give you a practical overview of your orchard site.

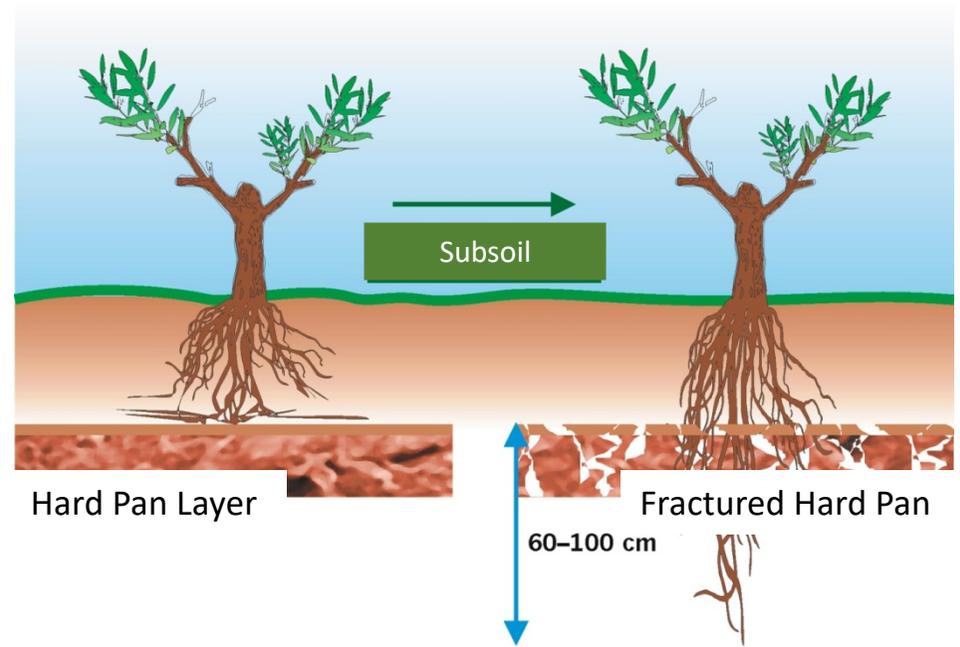
This map is the blueprint that will help you to identify the appropriate soil management practices, irrigation setup and management & varietal selection.



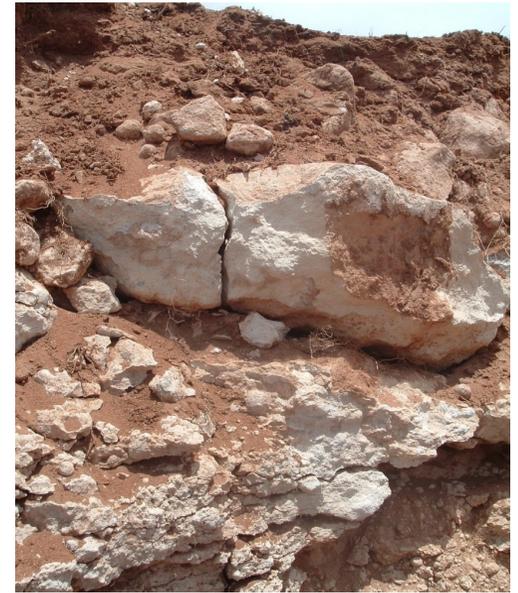
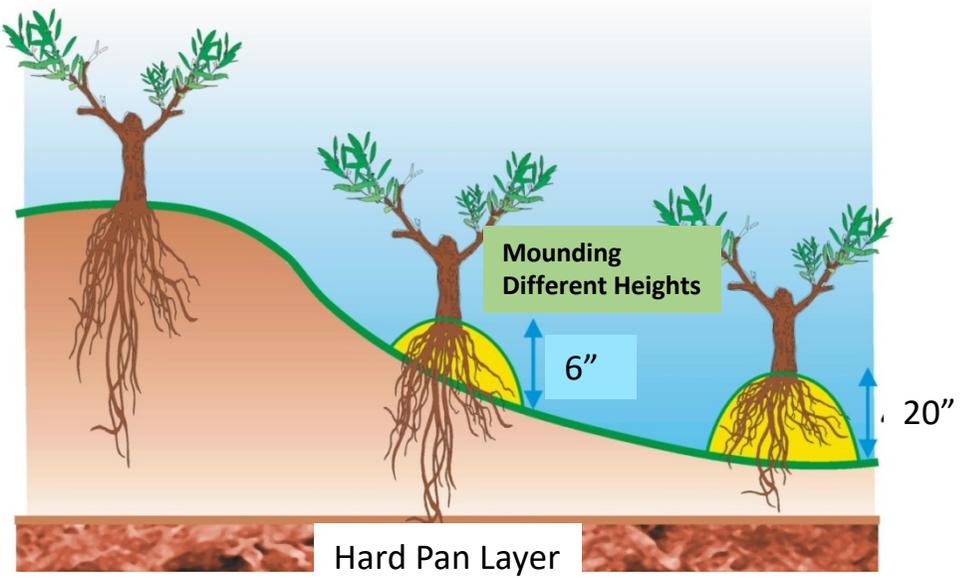
Escala 1:5000
AGOSTO 2007



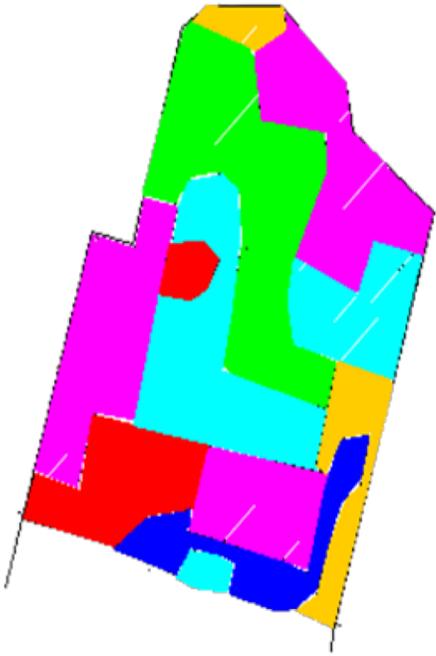
HORTIPRO MANAGEMENT SERVICES
29 Smith Drive, Walkerie SA 5330
ph: 08 85413600 fx: 08 85413285



Mounding



Olives DON'T like wet feet!



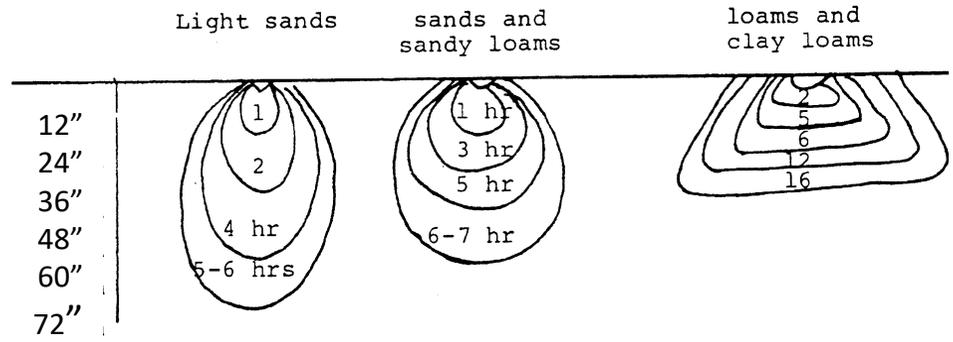
IRRIGATION MANAGEMENT UNITS 821-701 112 10 0' SCALE Scale: 1:3000 Date: June 2004 Drawing: 0

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IRRIGATION MANAGEMENT UNITS RAW (Readily Available Water)

- Soils with low RAW values, poor drainage.
- drainage.
- Soils with moderate RAW values, poor drainage
- Soils with high RAW values, poor drainage.
- Soils with low RAW values, good drainage.

- Irrigation is very critical in hot regions and an added support in mild areas.
- One or two drip lines with pulse irrigation recommended.
- Distance and flow of emitters should be dictated by soil type, water holding capacity and tree spacing.
- Soil mapping critical to proper irrigation design.



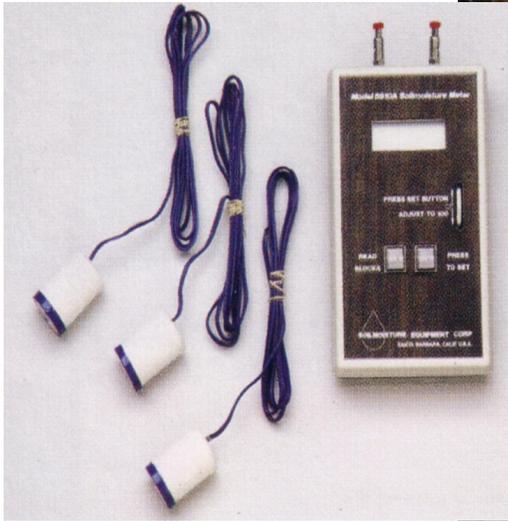
RAW is the water available for the plant in the rootzone

Measured between pressure suctions of field capacity and 60 kPa.

Many types of monitors.

- Gypsum Blocks
- Tensiometers
- Neutron Probes
- TDR (Time-domain Reflectometer)
- Capacity Probe

❖ Build into your development Plan



Things to think about:

- You will need sensors at different depths.
- Depth will depend on soil and root zone characteristics.
- Sensors should be placed at varying depths. (example)
 - 10"
 - 20"
 - 30"
 - 40"





Tall Trellis, with wires



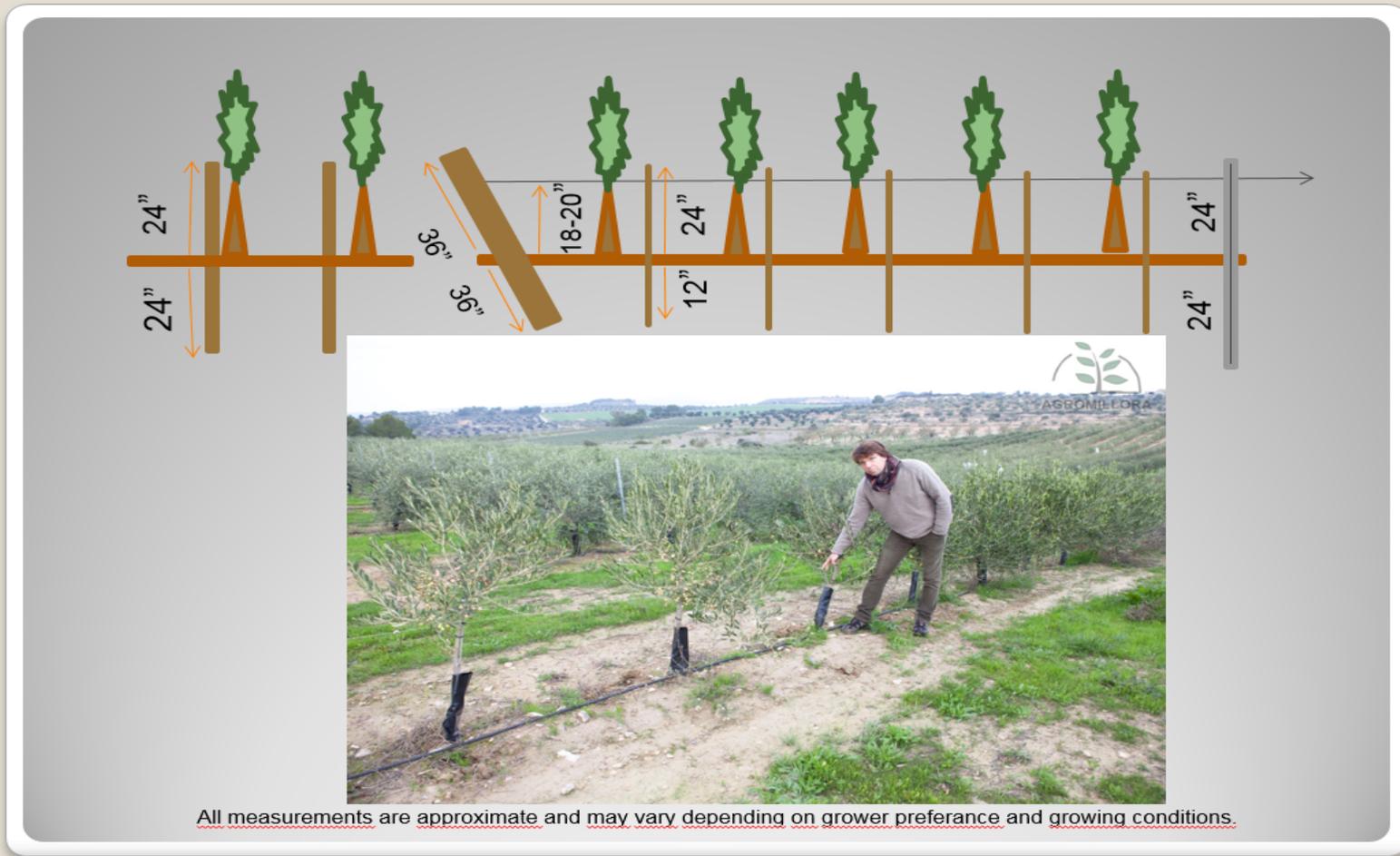
Short Trellis Smarttree System (or Medium Density) With single wires



Smarttree System (or Medium Density) Stake only, No wire



- Smarttree Trellis, No Wire
 - Individual (1"dia.) thick bamboo stake (Wood or Fiberglass stakes are also options)
- Smarttree Trellis, With Wire
 - (4-5"dia.) Short Wood post, Short metal posts, (3/8"-1/2"dia) thinner bamboo and 1-13ga wire



All measurements are approximate and may vary depending on grower preference and growing conditions.



Olint Olive Trees is the

Standard Olive Tree:

- Small plastic or fiber pot.
- Minimum height of 12".
- Single Leader
- Shortest Production Time
- Least expensive product



Smarttree Olive Tree:

- Small plastic or fiber pot.
- Topped at 18" (multiple branching)
- Includes preinstalled protector



Large Olive Tree:

- Large plastic or fiber pot.
- Typically taller than 30"
- Multiple Branching
- Longest Production Time
- Most expensive product with higher product, transport and planting cost.





SHD Planting Density:

Can range from:

- 3-6 feet between Trees
- 10-13 feet between Rows
- Current standard: 4'-5' x 12'

Tree spacing depends on soil type, climate, harvester dimensions and variety.

Size controlling varieties currently limited to:

- Arbequina, Arbosana, Koroneiki
- Chiquitita (Picual x Arbequina)
- Oliana (Arbequina x Arbosana)
- 9806-10 (Leccino x Arbosana)

Modern Medium Planting Density:

Can range from:

- 8-14 feet between Trees
- 18-25 feet between Rows
- Current standard: 8'-10' x 22'

Tree spacing depends on soil type, climate, harvester dimensions and variety.

Range of Varieties:

- Leccino, Picual, Manzanilla, Hojiblanca, Frantoio, Coratina, Mission, Pendolino, Arbequina, ect...

North-South Row Orientation is preferred in any planting method utilizing a hedge row.





Hand Planting vs. Mechanized Planting

Things to consider:

- Availability
- Cost
- Planting Duration

- Spray a Pre-emergent herbicide when possible.
- Plant with a protector to avoid herbicide damage when spraying post planting herbicide.



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