Olive Fact Sheet

- **Family:** Oleacea
- **Genus:** Olea
- **Commercially Important Species:**
  - *Olea europaea L.*
- **Description:** Evergreen tree; thick, leathery, oppositely arranged leaves; monoecious; flowers borne on an inflorescence with 15-30 small flowers - may be either perfect or staminate with staminate dominating; both cross- pollinated and self-pollinated; fruit is a drupe with a skin (exocarp), flesh (mesocarp), and pit (endocarp). Alternate bearing; fruit produced on one year old shoots in the presence of sunlight; require winter chilling.
- **Origin:** Mediterranean area
- **History of Cultivation:** 3000B.C.
- **Current Production:** 860,000 tons of table olives world-wide
  1,662,000 tons of olive oil world-wide
- **Site Requirements:** Nonstratified, moderately fine textured soils, mild winters, long, dry, warm summers.

Cultivation in California

- **History:** Brought to California in 1700s by Franciscan missionaries from Mexico, 1870 - 1900 resurgence of orchard plantings throughout the state.
- **Yield:** 4-7 tons/acre
- **Cultivars** Ascolano, Barouni, Manzanillo (most popular cultivar in California for canning), Mission, Sevillano
- **Rootstocks:** Most trees are grown on own rootstocks. Some cultivars are harder to root than others.
- **Propagation:** Seed propagation slow and unreliable. Cuttings taken from hardwood, leafy stems, suckers, ovuli, or truncheons. Budding or grafting onto rootstocks.
- **Spacing:** Standard: 30' x 30' (48 trees/acre), High Density: 30'x 30' hexagonal/equilateral triangle design (56 trees/acre), Hedgerow: 15' x 30' (97 trees/acre)
- **Irrigation:** Flood, furrow, sprinkler, drip and micro sprayer. Require approx. 3 acre-feet of water/year
- **Training System:** Modified central leader
  - At planting: shoots below 30" are removed.
  - First summer: Selection of 3-5 primary scaffolds to provide a strong framework.
  - Second and Third growing seasons: Early removal of suckers, watersprouts, and low hanging shoots. Excessive cutting delays bearing.
  - Avoid heavy cutting until moderate bearing begins.
- **Nutrition:** Critical nutrient levels in July leaf samples:
  - Nitrogen: 1.5%-2.0%; Phosphorus: 0.1%-0.3%

    - Potassium: 0.8%-up; Calcium: 1.0%
    - Magnesium: 0.1%; Boron: 19-150ppm (toxic over 185ppm)
- **Harvesting:** Harvest when 50% of the olives taken in daily samples fall within standard medium, large, or extra large size and the percentage is increasing at a rate of 3-5%/week. Begin- mid September, Finish- Mid November. A majority of orchards are harvested by hand, mechanical shakers and rollout tarps are being tested. Harvest (hand) accounts for 45%-65% of total production costs for olives.
- **Marketing:** 95% of the olives grown in CA are canned as black-ripe or green-ripe olives. The California Olive Committee established by a federal marketing order establishes quality guidelines and funds University of California crop research programs.

Production Problems

- **Environmental:** Cold injury, nutrient deficiency/ toxicity, water stress (though it is drought tolerant).
- **Insect/Pest:** Primary: Black Scale; Secondary: Root Lesion Nematode, Citrus Nematode, Root knot nematode, Scale (Olive, Oleander, Latania, Greed, California Red), Olive Mite, Western Flower Thrips, Branch and Twig Borer, American Plum Borer, Black Vine Weevil.
- **Disease:** Olive Knot, Olive Leaf Spot, Phytophthora Root and Crown Rot, Armillaria Root Rot, Diplodia Canker, Verticillium Wilt

References

- Ferguson, L., Sibbett, S. and Martin, G. Olive Production Manual. UC DANR Publications, Publication #3353. Oakland, CA.
- California Olive Industry Annual Report 1994-95, California Olive Committee, USDA.

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