



UCDAVIS

Olive Center

at the Robert Mondavi Institute

WHO WE ARE

- A portal to UC Davis and global resources
- Self supporting, lean
- Research, education and outreach



RESEARCH SUPPORT

- Olive Oil Commission of CA
- California Olive Committee
- USDA and CDFA
- Olive Center resources
- Philanthropic



Firmin Berta at UC Davis Wolfskill Ranch

NEW RESEARCH

- 13 peer-reviewed papers in 13 months
- Analyzing quality
- Improving processing
- Managing olive knot



Dr. Selina Wang

ANALYZING QUALITY

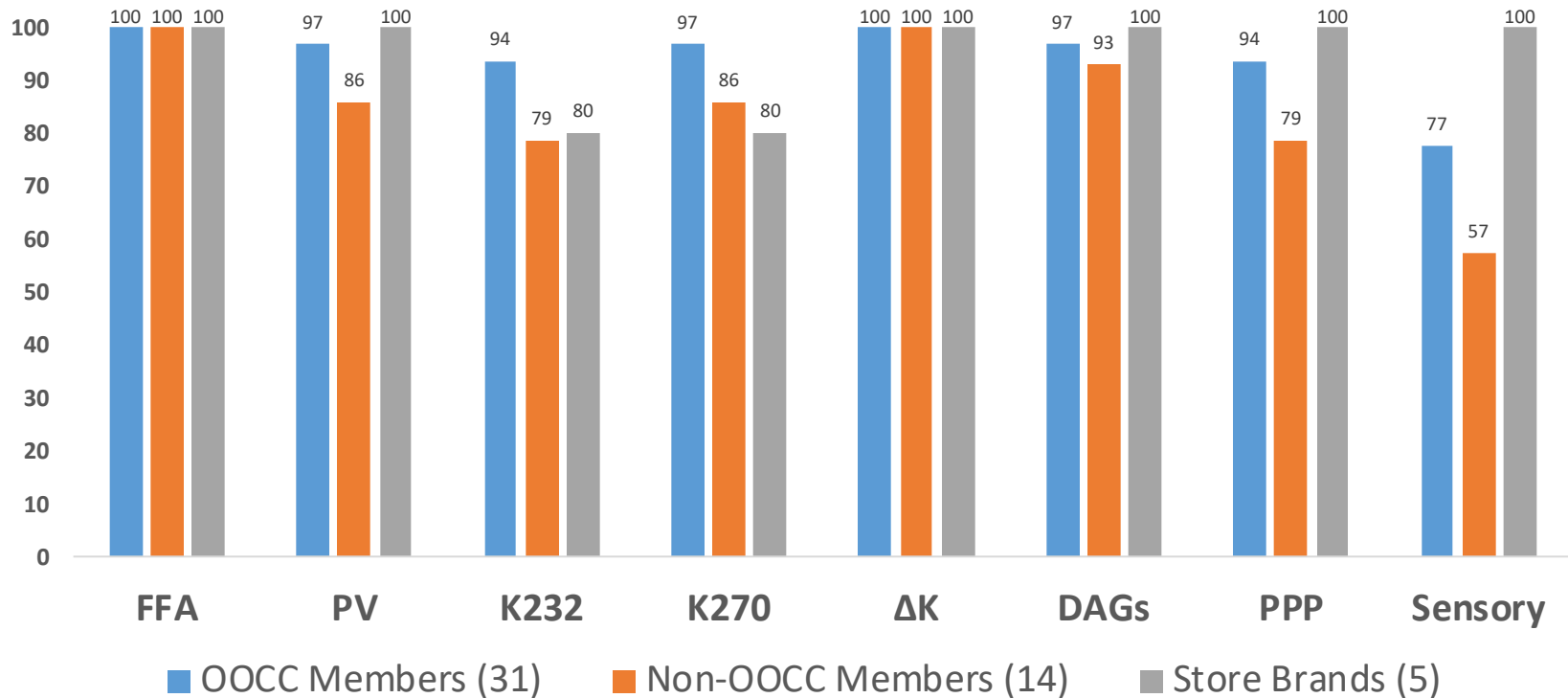
- Analyzed testing data shortly after harvest
- Analyzed CA olive oil > one year after harvest
- Analyzed four years of data on sterols and fatty acids



MANDATORY TESTING RESULTS

- All 161 samples designated as EXTRA VIRGIN grade prior to testing met those standards.
- 11 of 12 samples designated as VIRGIN or CRUDE grade met those standards.
- 13 of 14 samples UNDESIGNATED met extra virgin standards.

SHELF RESULTS



UC Davis Olive Center, "Evaluation 50 California Olive Oil Samples at Least One Year After Harvest," Submitted to the Olive Oil Commission of California, August 2018

IMPROVING PROCESSING

- Impact of crushing speed on oil extraction and quality (Arbosana)
- Interaction between crushing variables and malaxation time (Arbequina)

Juan Polari

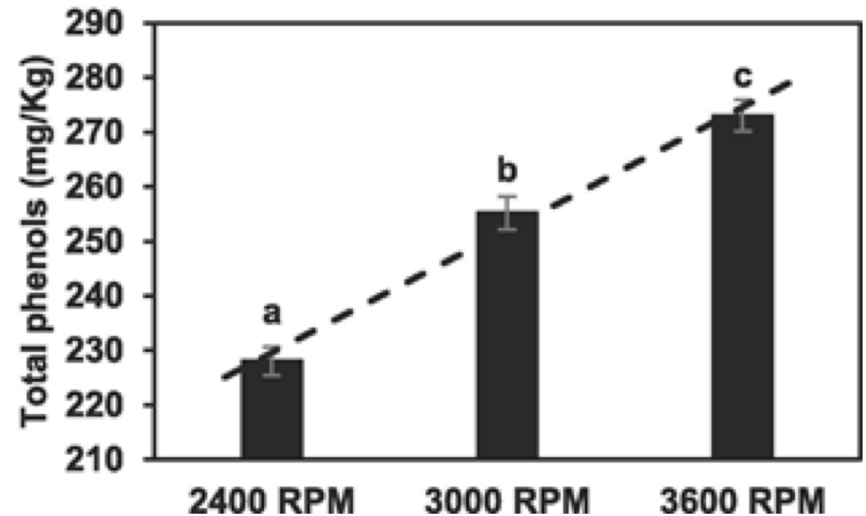
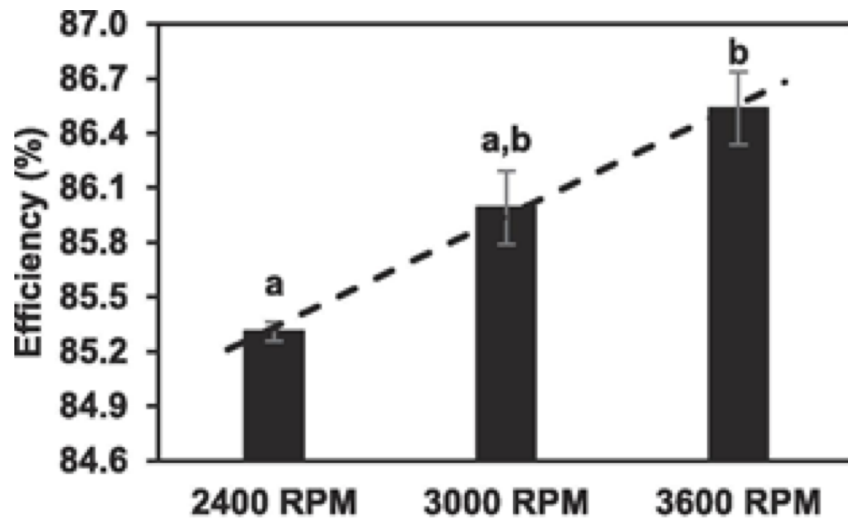


CRUSHING SPEED RESULTS

- Hammer mill rotor speed at 2400, 3000, 3600 rpm. At 3600 rpm:
- Oil extraction +1.2%
- Pungency +29%, other sensory unchanged
- Total phenols +18%
- Chlorophyll increased

Impact of industrial hammer mill rotor speed on extraction efficiency and quality of extra virgin olive oil. Polari, J. J., Garcí-Aguirre, D., Olmo-García, L., Carrasco-Pancorbo, A., & Wang, S. C. (2018). *Food chemistry*, 242, 362-368.

CRUSHING SPEED RESULTS



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CRUSHING AND MALAXATION RESULTS

- crushing speed (2400 or 3600 rpm)
- grid size (5 mm or 7 mm)
- malaxation time (30 or 75 minutes)

Interactions between hammer mill crushing variables and malaxation time during continuous olive oil extraction. Polari, J. J., Garcí-Aguirre, D., Olmo-García, L., Carrasco-Pancorbo, A., & Wang, S. C. (2018). *European Journal of Lipid Science and Technology*, 120(8), 1800097.

CRUSHING AND MALAXATION RESULTS

- Combination of smaller grid size, lower rotor speed, and longer malaxation time gave the highest yield (89.4%)
- Same variables with shorter malaxation time gave the lowest yield (84.7%)
- FFA, PV, and DAGs adversely affected by longer malaxation time
- Lower bitterness with smaller grid size

Interactions between hammer mill crushing variables and malaxation time during continuous olive oil extraction. Polari, J. J., Garc-Aguirre, D., Olmo-Garca, L., Carrasco-Pancorbo, A., & Wang, S. C. (2018). *European Journal of Lipid Science and Technology*, 120(8), 1800097.

MANAGING OLIVE KNOT

- Top olive disease
- Spread in wet conditions via wounds
- Diminishes productivity, detrimental to tree health and oil quality
- Copper main management strategy
- Research funded jointly by olive oil and table olive sectors



OLIVE KNOT RESULTS

- High virulence of copper-resistant strains
- Kasugamycin performed equally or better to the standard copper hydroxide treatment
- Treatments within 24 h of inoculation resulted in better disease control
- Copper or copper-kasugamycin applied to wounds 7 days before inoculation persisted and reduced knot incidence by >50%
- Author registered quaternary ammonia for sanitizing equipment and seeking registration for Kasugamycin

Efficacy of Copper and New Bactericides for Managing Olive Knot in California. K. A. Nguyen, H. Förster, and J. E. Adaskaveg, [†] Plant Disease May 2018, Volume 102, Number 5, 892-898

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