WHO WE ARE

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

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

Firmin Berta at UC Davis Wolfskill Ranch
NEW RESEARCH

- Published 13 peer-reviewed papers, 3 OOCC reports in past 13 months
- OOCC studies: Analyzing CA quality and purity
- Olive Center studies: Improving processing

Dr. Selina Wang
Mandatory testing data collected shortly after harvest

Olive oil purchased at retail at least one year after harvest

Four years of purity data
MANDATORY TESTING: ALMOST PERFECT

- 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.

UC Davis Olive Center, “Evaluation of Mandatory Testing California Olive Oil 2017/18 Season,” Submitted to the Olive Oil Commission of California, August 2018
OFF-THE-SHELF

- 50 samples selected at retail
- 2016 Sacramento area, 2017 Fresno area
- Selection methodology based on USDA and IRI data

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
NUMERO OF OLIVE OILS AT EACH OUTLET

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
TEMPERATURE HIGHER ON TOP SHELF

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
OFF-THE-SHELF: ROOM FOR IMPROVEMENT

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
OFF-THE-SHELF: ROOM FOR IMPROVEMENT

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
OFF-THE-SHELF CONCLUSIONS

- Quality a bit lower in 2017 than in 2016 study
- Could be related to more brands, warmer shelf temperatures and more two-year-old samples in 2017
- Commission may want to consider “best practices” for producers, persuading retailers to move category to cooler section, and investigating whether all producers are paying commission assessment.

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
PURITY REPORT

- Four years of data; 261 single-cultivar samples
  - 71% Central Valley
  - 42% SHD cultivars
  - 33 cultivars

UC Davis Olive Center, “Evaluation of Sterol and Fatty Acid Profiles, California Olive Oil 2017/18 Season” Submitted to the Olive Oil Commission of California, August 2018
PURITY RESULTS

- 11% (28 samples) outside USDA limits
  - ¾ SHD varieties
  - ½ Central Valley (8% of Central Valley samples failed overall)
  - ~½ Desert (41% of Desert samples failed overall)

UC Davis Olive Center, “Evaluation of Sterol and Fatty Acid Profiles, California Olive Oil 2017/18 Season” Submitted to the Olive Oil Commission of California, August 2018
The commission may want to recommend modifications to California olive oil standards so that fatty acid and sterol profile standards accommodate all olive oil produced in California.
IMPRESSING PROCESSING

- Impact of crushing speed on oil extraction and quality (Arbosana)
- Interaction between crushing variables and malaxation time (Arbequina)
- Conducted at industrial scale (25,000 kg) at Corto Olive

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

CRUSHING SPEED RESULTS

CRUSHING AND MALAXATION RESULTS

- We investigated multiple variables:
  - crushing speed (2400 or 3600 rpm)
  - grid size (5 mm or 7 mm)
  - malaxation time (30 or 75 minutes)

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

WHAT’S NEXT

- Results of 2018 processing trials conducted at California Olive Ranch
- Large-scale pomace composting with California Olive Ranch (CDFA grant)
- Faster, better and cheaper testing methods
- OOCC mandatory testing reports
- Olive Growing Certificate Course: Leandro Ravetti and Paul Vossen, March 15-16
RESEARCH, EDUCATION, OUTREACH

- Self-supporting
- Independent
- Collaborative