



**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE (CDFA)
AVOCADO INSPECTION COMMITTEE (AIC)
March 10, 2026 Meeting Minutes
Hybrid Teleconference
United Water Conservation District Headquarters
1701 Lombard Street, Oxnard, CA 93030**

MEMBERS PRESENT

John Schaap – Chair
Hillary DeCarl
Jed Harrison

MEMBERS ABSENT

None

INTERESTED PARTIES

Bailey Diiioia
April Aymami – California
Avocado Commission (CAC)
Marlo Santos
Dr. Mary Lu Arpaia
Chiles Wilson – Rivermaid
Gerardo Huerta
Ken Melban - CAC
Monica Winters – San Diego
County
Rudy Valencia – Riverside County
Stacia Kierulff

CDFA

Danny Lee
Stacey Hughes
Karrie Batchelor
Marcee Yount
Sam Santander
Andrea Cano
Sarah Cardoni
Ben Kardokus
Leslie Fernandez

ITEM 1: CALL TO ORDER-INTRODUCTIONS/ROLL CALL

The meeting was called to order at 1:00 p.m. by Andrea Cano. Roll was called and a quorum was established.

ITEM 2: PUBLIC COMMENTS

There were no public comments.

ITEM 3: REVIEW OF SEPTEMBER 9, 2025 MEETING MINUTES

Chair John Schaap requested a motion to approve the September 9, 2025, Meeting Minutes as submitted.

MOTION: Hillary DeCarl moved to approve the September 9, 2025 Meeting Minutes as presented. Jed Harrison seconded the motion. A vote by roll call was taken. The motion passed unanimously, with no abstentions.

ITEM 4: COMMITTEE VACANCY AND TERMS REPORT

Stacey Hughes provided the Committee Vacancy and Terms Report. Current vacancies included one Handler Member, one Handler Member Alternate, two Grower Members, and one Grower Member Alternate. Harrison will be eligible for reappointment on June 1, 2026. Handler Member Schaap will be terming out on May 31, 2026. Aaruni Thakur resigned from his position in January 2026.

ITEM 5: REVIEW OF THE PROPOSED CDFA FISCAL YEAR 2026/27 BUDGET

Sam Santander presented the Proposed CDFA FY 2026/27 Budget. The proposed budget included \$229,925 for personal services; \$78,205 for operating expenses and equipment; a gas tax credit of \$4,980; and a pro rata cash adjustment debit of \$9,559, for a total budget of \$312,709.

Chair Schaap asked for a motion to approve the CDFA Proposed Budget for FY 2026/27 as presented.

MOTION: Jed Harrison moved to approve the Proposed CDFA FY 2026/27 Budget as presented. Hillary DeCarl seconded the motion. A vote by roll call was taken. The motion passed unanimously, with no abstentions.

ITEM 6: AVOCADO RESEARCH PROTOCOLS – DR. MARY LU ARPAIA

Dr. Mary Lu Arpaia began her presentation by emphasizing the difference between minimum maturity and optimal maturity, noting that minimum maturity represents the lowest level acceptable to consumers, not the ideal picking point. Dr. Arpaia compared maturity standards across commodities such as citrus, table grapes, and apples, illustrating how minimum maturity requirements differ by region and product type across California.

Dr. Arpaia then traced the historical development of avocado maturity testing. Early research by United States Department of Agriculture (USDA) researchers Church and Chase in the 1920s established an 8% oil benchmark, which was later criticized for being too low. A major shift occurred in the 1970s when the carcinogenic nature of the HaloWax method prompted University of California (UC), Riverside researchers Roy Young and Seung-Koo Lee to develop dry matter as the new standard, eventually adopted in 1982. Further refinements came from avocado grower Cliff Ranney during 1988 through 1993, and from policy adjustments in 1995 when Gwen variety growers raised concerns about excessive fruit drop, leading the industry to reduce dry matter standards across all varieties.

Dr. Arpaia reviewed the significance of her collaboration with Donella Boreham, Avocado Program Supervisor and Reuben Hofshi, founder of Avocadosource.com which led to the adoption of the equatorial core sampling method in 2002. Dr. Arpaia explained the two step structure of California's minimum maturity system which is: establishing a minimum dry matter weight for acceptability, then establishment of release dates based on fruit size. She compared three foundational studies that include: Lee's, Ranney's, and her own work from 2001 through 2002 highlighting major methodological differences in fruit selection, ripening protocols, statistical analysis, and taste panel design.

Dr. Arpaia presented a detailed comparison of ripening protocols. Lee used ethylene and high humidity; Ranney used no ethylene and relied on feel; and Dr. Arpaia's team used controlled ethylene treatments with penetrometer-based ripeness measurements.

Dr. Arpaia also compared tasting methodologies. Lee used a trained 20-member sensory panel; Ranney used growers and industry representatives who evaluated fruit openly; and Dr. Arpaia used untrained volunteers who developed semi-expertise, applying a blind nine-point hedonic scale. Dr. Arpaia cited earlier work by Art Schroeder showing natural dry matter gradients within fruit, establishing the relevance of equatorial sampling.

Dr. Arpaia summarized the major findings of the three major studies. Lee demonstrated the strong correlation between oil and dry matter and helped the industry transition to dry matter measurement. Ranney's multi-year work informed today's maturity standards and release dates. Dr. Arpaia's own studies refined Lamb Hass dry matter standards and re-evaluated Hass thresholds using taste panels. She reiterated the importance of using unripe fruit for dry matter sampling, since dry matter drops slightly during ripening, a finding that implies Lee's original standards may have underestimated true unripe maturity values.

Dr. Arpaia's presentation then shifted to GEM avocados. The GEM variety originated from a seed planted in 1986, later evaluated and patented as 3-29-5 in 2003. Dr. Arpaia's early work linked GEM eating quality to dry matter, and in 2006 the AIC requested a recommended minimum dry matter, which she set at 22.8%. Later, from 2018 through 2021, she was asked again to assess GEM release dates. Working with a data set from multiple California regions, including the San Joaquin Valley site ran by Jed Harrison, her group, using SAS statistical code originally developed with Carol Adams, identified clear regional differences in dry-matter gathering.

Dr. Arpaia's analysis revealed that fruit in the San Joaquin Valley reached minimum maturity significantly earlier than fruit from southern or northern coastal regions; therefore, the final recommendation was to set separate GEM release dates: December 11th for the San Joaquin Valley, and February 4th for the combined northern and southern regions. Dr. Arpaia stressed that multi-year data is essential due to seasonal variability, referencing differences seen between 2018, 2019, and 2020. She also noted the need for substantial fruit sample sizes, to ensure strong standard setting.

Dr. Arpaia spoke on regional differences in fruit size, shape, ripening behavior, and grower practices. For example, Bailey Diiioia asked why San Joaquin Valley fruit tends to accumulate dry matter earlier, prompting Dr. Arpaia to explain the role of heat units and tree stress. Participants in the meeting asked questions toward Dr. Arpaia that were raised about taste differences, elongated fruit shapes, dead seed fruit, holding fruit too late into the season, and differences observed in areas such as the Sacramento Delta. Dr. Arpaia emphasized that many of these issues require future research.

Participants in the meeting expressed increasing concern about how maturity standards should apply to emerging regions like the Sacramento Delta (Delta), where Chiles Wilson and neighbors are producing GEM with varying conditions and canopy systems.

There was agreement that current release dates may not accurately fit Delta conditions. Growers requested studies comparing Delta fruit to Ventura County, the lower San Joaquin Valley, and standard Hass benchmarks. Dr. Arpaia explained that such work would require multi-year sampling, collaboration with multiple growers, and possibly temperature monitoring, though this would involve a separate project.

The committee ultimately asked Dr. Arpaia to prepare a budget proposal for a new three-year study that would evaluate dry matter, and potentially taste panels, for GEM, Hass, and Lamb Hass avocados across the Delta, Ventura County, and the San Joaquin Valley. April Aymami clarified that funding would come from Avocado Inspection Committee (AIC) reserves and would require formal approval in a future meeting. Dr. Arpaia agreed and reiterated that controlled ripening, large sample sizes, and consistent protocols would be crucial for credible outcomes.

The presentation concluded with members thanking Dr. Arpaia for her extensive explanation, acknowledging how vital her work is to current and future maturity standards. Dr. Arpaia agreed to revisit her budget proposal at the next committee meeting, tentatively scheduled before the next harvest season, with the goal of initiating research in October.

ITEM 7: STATE MARKETING ORDERS – CDFA MARKETING BRANCH

Ben Kardokus from the CDFA Marketing Branch started with explaining how marketing orders can be used to establish quality standards or seasonal regulations. Kardokus noted that some commodities, such as cantaloupes, olive oil, and strawberries, already use marketing orders with seasonal components. Kardokus also outlined that creating a new marketing order is possible and involves working directly with CDFA, depositing funds for staff work and a required vote, and drafting the proposed order. Approval requires a 40% ballot return rate as well as meeting specific majority and volume thresholds.

Hughes asked Kardokus to clarify whether this advisory committee could oversee a marketing order or if a separate board would be required. Kardokus explained that there are two possible paths: using the existing authorities of the California Avocado Commission, as outlined in Article 10, or establishing an entirely new marketing order with its own board, staff, and assessments. Participants then discussed whether the industry's goal was long-term regulatory standards, such as a fixed 26% dry matter requirement, or whether a more flexible system was needed to adjust for year-to-year variations in maturity. Kardokus noted that flexibility is one advantage of marketing orders, though new testing methodologies and added costs would need consideration.

The advisory committee members also explored examples from other commodities and recognized that changes to quality standards in mid-season would be difficult due to impacts on growers. Discussion emphasized operational challenges, such as expanded testing infrastructure, that would accompany stricter or more frequent maturity testing. Some committee members expressed concern about increased costs to growers and

suggested reevaluating existing Hass standards instead of establishing a new marketing order.

ITEM 8: PROGRAM UPDATES

Santander stated that there were no current program updates. Marcee Yount provided clarification on the costs and approval history of Dr. Arpaia's maturity related research contract. Yount explained that a committee meeting was held in December 2018 to approve the Gem Release Dates Research Project proposal and its first-year budget of \$31,560, followed by \$44,934 for year two and \$50,886 for year three, with an additional carryover of about \$9,000. Yount confirmed that the committee could hold another noticed meeting to review and approve a new proposal before the June board meeting if needed, though she recommended receiving a draft budget by July so the Commission could incorporate it into financial planning ahead of the September budget-approval meeting. Dr. Arpaia indicated she could prepare the budget and noted that the project would likely begin mid-October, including new data collection and reanalysis of past dry-matter data, such as work from Seung Koo Lee's research.

Toward the end of the meeting, Hughes announced that it would be John Schaap's final meeting as a committee member. In recognition of Schaap's eight years of service on the California Avocado Inspection Committee, a formal resolution was read honoring his dedication, integrity, and contributions to the Avocado Inspection Program within CDFA's Inspection and Compliance Branch. The resolution acknowledged Schaap's impact on supporting California's avocado growers, helping maintain a strong inspection program, and serving as an example of professionalism and commitment. He was thanked on behalf of the department and the Secretary for his service to California agriculture.

ITEM 9: NEXT MEETING/AGENDA ITEMS

The next meeting will be held Tuesday, September 22, 2026, from 1:00 p.m. to 3:00 p.m., at a location to be determined.

ITEM 10: ADJOURNMENT

The meeting was adjourned at 3:05 p.m. by Chair Schaap.

Respectfully submitted by:

Sam Santander, Program Supervisor
Inspection and Compliance Branch
Inspection Services