California Department of Food and Agriculture (CDFA)
Fertilizer Research and Education Program (FREP)
Fertilizer Inspection Advisory Board (FIAB)
Technical Advisory Subcommittee (TASC)

HYBRID TELECONFERENCE MEETING

MINUTES

Date: Thursday, June 18, 2026
8:00 AM – 5:00 PM

Location: Center for Analytical Chemistry
3292 Meadowview Road
Sacramento, CA 95823
(916) 262-1434

MEMBERS PRESENT	MEMBERS ABSENT	CDFA STAFF
Chris Shogren	Dr. Jairo Diaz	Dr. Emad Jahanzad
Dan Cook		Jenna Leal*
Daniel Rodrigues		Jennifer Harmon
Dave McEuen		Madison Goodman
Devin Clark		Maria Tenorio Alfred
Dr. Mike Almasri		Natalie Jacuzzi
Dr. Sebastian Saa		
Dr. Tom Bottoms		
Ehsan Toosi*		
Franklin Gaudi		
Gina Bella Colfer*		

*Attended remotely

WELCOME AND INTRODUCTIONS

Dr. Tom Bottoms, Chair, called the meeting to order at 8:12 AM. Introductions were made and a quorum was established.

REVIEW AND APPROVE MINUTES

Dr. Bottoms requested TASC review the minutes of the February 13, 2026, meeting.

MOTION: Dan Rodrigues moved to approve the February 13, 2026, meeting minutes as submitted. Dr. Sebastian Saa seconded; the motion passed unanimously with a vote of 11-0.

DEPARTMENT, DIVISION, AND BRANCH UPDATES

Jenna Leal briefed the TASC on department updates including the upcoming transition year of the Governor and the CDFA Secretary, retirements, and position changes in the Executive Office. Leal updated TASC on Assembly Bills (AB)1812 and Senate Bill (SB) 1031 on organic compostables. Additionally, Leal informed TASC that AB 2447 did not pass committee.

Leal discussed a quarantine case from the Fertilizing Materials Inspection Program (FMIP) that escalated to the Department of Justice (DOJ). The Commercial Feed Inspection Program (CFIP) has been addressing a selenium toxicity case with the U.S. Food and Drug Administration (FDA) in dairy feed.

Leal notified TASC that they may be contacted by GoBiz, an agency that represents the Governor's Office, regarding an ammonia production source initiative.

After discussion with the TASC about ongoing issues, Leal suggested that FMIP's Environmental Program Manager I, Nick Young, give a presentation on bio-stimulants to TASC at a future meeting.

PROGRAM UPDATES

Natalie Jacuzzi introduced FREP's new Environmental Scientist, Madison Goodman, to the TASC. Goodman has taken over the Irrigation and Nitrogen Management Training Program (INMTP) and assisted in creating the review form for the pre-proposals TASC will review. Jacuzzi also shared that the Ag. Expert Panel published their final recommendations to the State Water Board earlier in the month.

FREP staff received guidance from TASC, FIAB, the Subject Matter Expert Review Panel (SMERP) and the California Air Resources Board (CARB) on a NOx Request for Proposal (RFP). FREP staff plan to solicit researchers to submit a full proposal by fall.

2026 PRE-PROPOSALS

Dr. Bottoms led the discussion in reviewing and voting on 76 pre-proposals submitted from FREP's most recent RFP:

TASC voted *yes* on the following pre-proposals:

- Evaluating the phosphorus needs of mature almond trees – *Gordon, P.*
- Standardizing Farm-Scale Nitrogen Accounting for Sustainable Nutrient Management–*Kortman, S., Haffa, A., Smith, C., Horwath, W.*
- Optimizing Irrigation and Nitrogen Management of Broccoli and Bell Pepper Across Contrasting Soils in Southern California– *Verdi, A., Diaz, J., Waisen, P., Geisseler, D.*
- Improving Nitrogen Use Efficiency and Reducing Nitrate Leaching Using Biologically Based Fertility Practices in Asian Leafy Greens – *Kim Doan, H.,*

Teiken, C., Geisseler, D.

- Pistachio field trials demonstrating fertilizer value of irrigation water nitrate and residual soil N –*Culumber, M., Miller, K., Bischak, E., Cahn, M.*
- Do Nitrogen Management Programs Improve Water Quality? Evidence from California's Central Valley –*Porse, E., Shellabarger, R., Nemati, M.*
- Development of crop conversion coefficients and analysis of best nitrogen management practices for California-grown cut flowers and foliage –*Volk, E., Spinelli, G., Brown, C.*
- Validating alternative cover cropping and fertilizer strategies for annual crop production systems –*Xu, S., Lazicki, P., Geisseler, D., Bai, X., Light, S., Lloyd, M., Singh, M.*
- Supporting Small Farm ILRP Compliance and Nitrogen Management in the San Joaquin Valley-*Teiken, C., Sharma, H., Maung, Z.*
- Validating AI-Enabled Satellite Estimates of Crop Nitrogen and Biomass for Winter Cereals and Cover Crops– *Lundy, M. Pittelkow, C., Kayad, A.*

TASC voted *no* on the following pre-proposals:

- Improving Nutrient and Water Efficiency in Aeroponic Systems for Small Farms-*Casler, M.*
- Improving Nitrogen Use Efficiency and Reducing Nutrient Loss Through Automated Irrigation-Integrated Microbial Delivery Systems– *Brown, J.*
- Evaluating Rabbit Manure-Derived Fertilizers for Nitrogen Management in Small-Scale Closed-Loop Regenerative Farming Systems – *Garrett, N., Stancil, M., Lyttle, L. et al.*
- Improving grapevine nutrition and irrigation through regenerative practices – *Rolshausen, P., Pennyroyal, G., et al.*
- Compost-Based Nutrient Management Education at the NJUHSD Working Ranch – *Browning, L., Van Noy, E.*
- Enhancing Soil Nutrient Management in Table Grapes Using Organic Input Materials: Biochar and Compost. – *El-kereamy, A., Hale, L., Gao, S.*
- Chasten Gold presents Growing Smart: Community-Based Nutrient and Irrigation Education for Equitable and Climate-Smart Agriculture – *McIntosh, E., Alford, I., McIntosh, K.*
- Improving Nitrogen Use Efficiency in Citrus Orchards Through High-Density Planting Systems. – *El-kereamy, Rolshausen, P., Jetter, K.*
- Overcoming Nitrogen Immobilization and Modeling Mineralization Rates via Cobioprocessing of Orchard Waste Biomass and Cattle Manure – *Wang, Y., Geisseler, D.*
- Predicting plant-available N using machine learning/AI and soil microbiome observations in the San Pasqual Valley agricultural preserve – *Diaz, J., Bowman, J.*

- Grow Biointensive Sustainable Agriculture: Training California Farmers in Compost- Centered Nutrient and Water Management Reducing Fertilizer Inputs – *Pazo, S., Jeavons, J., Burkland, V.*
- Evaluating the Agronomic Effects of Winter Cover Crop Planting Timing in California Rice – *Brim-DeForest, W., Marsh Janish, S. Leinfelder-Miles, M., Agyeman, D.*
- Breaking the barriers to compost adoption: Extension and Education on Organic standards for compost management – *Hale, L., Marshall, K.*
- Optimizing Nitrogen Management in Agrivoltaic Lettuce Production: Quantifying Spatial Variability in Nitrogen Use Efficiency & Soil Microbial Drivers Under Photovoltaic Shading – *Ravishankar, E. et al.*
- Nutrient Availability and Salinity Dynamics in the Almond Tree Root Zone Receiving Composted Manure and Tree Nut Shells – *El Mashad, H., Culumber, M., Zhang, R.*
- Unlocking the Potential of Vineyard Farmworkers to Improve Irrigation and Nutrient Management Through Education and Technical Assistance – *Garcia, M., Larios, F., Knapczyk, F.*
- Facilitating farmer adoption of cover crop nitrogen scavenging in the northern Central Coast – *Peterson, A., Lozano S., Brown, K., Grant, E.*
- Quantifying Nitrogen Retention and Leaching Risk under Organic Soil Health Practices to Inform ILRP Compliance. – *Beckett Parr, J., Fischer A., Decock, C., Grieshop, M.*
- Irrigation Efficiency Longterm: Nutrient Management and Technical Assistance by Madera Chowchilla RCD – *Siliznoff, A., Reyes, K.*
- *Dual-Action Bio-Based Enhanced Efficiency Fertilizers: Upcycling Almond Hulls for Biodegradable Coatings and Biological Nitrification Inhibitors – Wang, Y., Parikh, S., Geisseler, D.*
- Integrating, for the First Time, Real-Time N Fertilizer Pricing, Availability, & Efficiency Analytics into the Regen Ag Planner Decision Support Tool for Growers in California – *Daley, C., Heinemeyer, A.*
- Integrating organic amendment with cover crops for enhanced nutrient and water conservation in tree crop production systems – *Xu, S., Suvocarev, K.,Smither-kopperl, M.*
- Continuous Monitoring to Validate Precision Nitrogen Management in Organic Leafy Greens Using Low-Cost Sensor Technology – *vanRossum, T., Calabro, J.*
- Soil Health Education to Inform Nutrient Management for Small to Medium-Scale Growers in California's Central Coast– *van Rossum, T., Nugent, L., Lozano, S., Jani, A.*
- Technical Training in Optimizing Nutrient and Irrigation Management in Conjunction with Cover Crops, Biochar, and Compost – *Lum, P., Trujillo, A., Gonzalez Gallardo, H.*
- Nitrogen Availability and Nutrient Budgeting for Vegetable Crops and Orchards with Biochar and Compost Blended Applications – *Stein, T., Lum, P., Gonzalez Gallardo H. et al*

- Assessing the efficacy of native microalgae polycultures to improve nitrogen use efficiency in lettuce cultivation. – *Tubeileh, A., Decock, C., Lundquist, T. Blackwell, S.*
- Commodity Residues as Organic Input Materials for Nutrient Management and Soil Health – *Bourcier, S., Toyama, L.*
- Enhancing Compost Nitrogen Use Efficiency using Biochar–Fulvic Acid Systems in California Soils – *El-Moghazy, A., Sharma, S.*
- Whole Farm Nitrogen and Irrigation Management: Technical Assistance on the Central Coast – *Porse, E., Gazula, A., Cahn, M., Shellabarger, R.*
- Comparing Three Types of Irrigation Scheduling of Fruit Trees to compare the impact on crop and soil management. – *Colasurdo, N., Cruz, O.*
- Precision Nitrogen Management in Walnut Orchards: Comparing Variable Application Strategies Using Remote Sensing and Leaf Tissue Analysis – *Miranda, J., Wheeler-Dykes, Attarwala, A.*
- Quantifying Nitrous Oxide Reductions and Soil Health Gains from Reduced-Nitrogen Management and Biological Stacking in California Almonds – *Aguayo, T., Palla, B.*
- Reducing Nitrogen Inputs and Improving Nitrogen-Use Efficiency in Citrus Using Biofertilizer-Based Nutrient Management Strategies. – *El-kereamy, A., Vidalakis, G.*
- Advancing Cover Crop Adoption, Nitrogen, and Water Management with Sacramento Valley Producers – *King, A., Flynn, M., McKeen, M., Higgins, C.*
- Three R's of Nitrogen Management: Leveraging a Carbon-Based Strategy to Retain Residual Nitrate, Recycle Nitrogen, and Reduce Fertilizer Demand – *Waterhouse, H., Jani, A., Grant, E.*
- Performance evaluation of cool-season grass and grass-legume mixtures to evaluate biomass potential, nutritive value and nitrogen dynamics in Intermountain California. – *Singh, S., Getts, T.*
- Nitrogen balance for 1-gal nursery and greenhouse ornamentals – *Spinelli, G., Shogren, C., Volk, E.*
- Compost application on small farms to protect soil health and water quality – *Bell, K., Lipschutz, R., Chavez, J., Guzman, A.*
- *Best Irrigation Practices Classes and Training for Underserved Growers - Borhani, A., Jawad Muradi, M., Hadian Haghighi, H.*
- Optimizing Organic Amendments and Nitrogen Rates for Agave Production in California's Mediterranean Climate – *Sondag, D., Hodson. A., Guzman-Delgado, P.*
- Nitrogen and Foodborne Pathogens Dynamics After Application of Pelletized Dairy Manure Compost and Vermicompost to Strawberries Field in California – *Elmashad, H., Lazcano, C., Malal, H., Pires, A.*
- The Smart Nutrient Initiative: Outreach and Education for Efficient Fertilizer Management and Groundwater Protection – *Mian, Y., Arunson, S., Saiprasert, P.*
- Validating Precision Nitrogen Management in Cotton to Minimize N2O Emissions and Optimize Nutrient Use Efficiency – *Azevedo, D., Garcia, L., Galdi, G.*

- Transforming Contaminated Wet Wastes into Heavy-Metal-Free Struvite: Agronomic and Economic Validation of a Novel Slow-Release Fertilizer – *Crowe, B., Decock, C., Lundquist, T., Blackwell, S.*
- Development of new technologies and practices to improve nitrogen use efficiency in almond and pistachio production in California – *Bali, K., Culumber, M., Zaccaria, D., Scudiero, E., Ayoub, A.*
- Guiding growers through site specific cover cropping strategies to enhance nutrient management – *Berris, H., Tiffany, S., Aguilar, L.*
- Re-Evaluating Potassium Recommendations for Field and Vegetable Crops in the Sacramento Valley. – *Light, S., Lazicki, P.*
- Enhancing nitrogen use efficiency and reducing nitrate losses in processing tomato using sensor-guided surface irrigation and targeted elevated drip fertigation – *Ayoub, A., Turini, T., Bali, K., Deccache, A., Safre, A.*
- Grapevine Rootstock-Based Nutrient Management to Improve Nutrient Efficiency and Optimize Fertilizer Inputs in California– *El-keramy, A., Fidelibus, M., Zhang, G.*
- Developing decision making guides and resources to improve grower access to and understanding of nutrient smart and healthy soil practices – *Clark, C Rosales, B.*
- Field Evaluation of AI Decision-Support Tools for Fertilizer and Irrigation Management in California Forage and Vegetable Systems – *Xu, S., Wang, Z., Bai, X. Smith, C.*
- Nitrogen Management using Enhanced Efficiency Fertilizer to Improve Orchardgrass Productivity and Reduce Nitrate Leaching in Intermountain Region of California. – *Singh, J., Singh, S., Singh. A.*
- Quantifying the Agronomic and Environmental Value of Bio-Enhanced Fertilizer – *Smith, C., Horwath, W., Toosi, E., Pedersen, A.*
- RINSER, Recovery of Impacted Nitrogen Streams through Electrochemical Reactors – *Feaster, J., Hwee, N.*
- Waste-derived Biocomposite Fertilizer for Circular Nutrient Management – *Nelson, K., Brule, C., Ryals, R., Porse, E., Shellabarger, R.*
- Soil Outreach, Instruction & Land-fertility Learning (SOIL) – *Xiong, K. Xiong, V, Luanglath, A.*
- From Advising to Adoption: Evaluating Barriers to Nitrogen and Irrigation Practices in Central Coast Vegetables and Berries – *Khalsa, S., Lubell, M., Gazula, A., Cahn, M., Clark, N.*
- Improving Nitrogen Use Efficiency Through Irrigation and Soil Management Training in the Central Valley – *Miranda, A., Reece, V. Yohannan, C, et al.*
- Quantifying Root Growth, Fertilizer Uptake and Production from Seed and At-Planting Applied Biostimulants and Newly Commercialized Nitrogen Fixing Bacterial Products Use – *Rethwisch, M., Palmer, A.*
- Year-round cover cropping for soil health and nutrient cycling in organic caneberry production on the central coast – *Lozano, S., Hermstad, D. Lopez, J., Singer, J.*

- Integrated Nutrient Cycling and Fertilizer Reduction in Small Mixed-Species Poultry–Crop Systems in Southern California – *Parker, N.*
- Optimizing On-Farm Regenerative Recharge to Mitigate Nitrate Leaching in San Joaquin Valley Pistachio Orchards – *Kisekka, I., Peddinti, S., Oker, T., Bansal, S., Castle, S.*
- Leaf-Based Diagnostics of Nitrogen Fixation Status for Improved Fertilizer Management in California Legumes – *DelPercio, R., Baldrich, P., Meyers, B.*
- Reducing Nitrate Losses in California Almonds: Comparing Drip and Micro-Sprinkler Irrigation and Fertigation Timing – *Eaton, D, Sayeedzai, A., Nasrat, Q.*
- Improving water and fertilizer use efficiency using arbuscular mycorrhizal fungi enhanced biochar in super high-density olive orchards – *Peracchi, L., Peracchi, J.*

PUBLIC COMMENTS

No public comments.

AGENDA ITEMS FOR FUTURE MEETINGS

- TASC vacancies
- FREP research priorities

NEXT MEETING

A Doodle poll will be sent to TASC members for a meeting date in September 2026.

ADJOURN

MOTION: Dan Rodrigues moved to adjourn the meeting; Dr. Chris Shogren seconded the motion. The meeting was adjourned at 3:37 PM.

Respectfully submitted,

ORIGINAL SIGNED BY NATALIE JACUZZI

Natalie Jacuzzi, FREP Date: 06/18/2026
Senior Environmental Scientist (Supervisory)
Feed, Fertilizer, and Livestock Drugs Regulatory Services