



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

Best Western Island Palms  
2150 Shelter Island Dr., San Diego, CA 92106

**HYBRID TELECONFERENCE MEETING**

**January 19, 2024**

**9:00 AM**

**MINUTES**

**MEMBERS PRESENT**

Dan Cook  
Dave McEuen\*  
Dr. Charlotte Decock  
Dr. Jairo Diaz  
Dr. Mike Almasri  
Dr. Rob Mikkelsen\*  
Dr. Sebastian Saa  
Dr. Tom Bottoms  
Franklin Gaudi

**MEMBERS ABSENT**

Daniel Rodrigues  
Ehsan Toosi

**CDFA STAFF**

Dr. Amadou Ba\*  
Dr. Emad Jahanzad  
Dr. Martin Burger\*  
Jennifer Harmon  
Karen Adler  
Mark Cady\*  
Nicole Nunes

\*Participated remotely

**WELCOME AND INTRODUCTIONS**

Dr. Tom Bottoms, Chair, called the meeting to order at 9:45 AM. Introductions were made, and a quorum was established. New members, Franklin Gaudi and Dan Cook introduced themselves to the group. The meeting started late due to technical difficulties.

**REVIEW AND APPROVE MINUTES**

Dr. Bottoms requested the subcommittee review the minutes of the May 19, 2023, meeting.

**MOTION:** Dr. Mike Almasri moved to approve the May 19, 2023, meeting minutes as submitted; Dr. Jairo Diaz seconded. The motion passed unanimously with a vote of 8-0.

**DEPARTMENT, DIVISION, AND BRANCH UPDATES**

Dr. Amadou Ba discussed the current state budget shortfall of \$37.89 billion. Fortunately, FREP funding for grants and the Nitrogen and Irrigation Initiative (NII) will not be impacted.

Regarding the state budget shortfall, there is \$18.4 remaining in the reserve; this will partly be rectified from reserves, revenue, and borrowing (Budget Resilience). An additional \$11.9 billion will be addressed through belt tightening throughout state departments and stretching of dollars. For example, \$98 million of funds allocated to the Department will be shifted to different fiscal years. There will be other fund shifts and reductions, such as the delay in purchasing new vehicles, cell phones, office spaces, office equipment, freezing contracts, exploring federal funding opportunities to supplement the state budget, not filling 762 statewide vacant positions, and the potential for terminating the telework stipend provided to state employees; negotiations with bargaining units will be required. Furthermore, there will be \$7.2 billion in delays and deferrals, including transit capital and the Facilities Grants Program, University of California (UC) and Clinic grants.

A High Path Avian Influenza outbreak occurred; there were 6.6 million dead birds and 26 commercial facilities impacted. A public meeting was held in San Bernardino County regarding 2,100 properties currently affected.

Dr. Ba also spoke about the current hot topic of Regenerative Agriculture. What is it? What does it look like? The Department is working to answer those questions. CDFA and the State Board of Agriculture (Board) held its first public listening session on December 6, 2023 to define “regenerative agriculture” for state policies and programs to provide a science-based criterion for the designation or recognition of the term “regenerative” in agriculture-related policies of the state. By defining “regenerative agriculture” and its associated practices, the Department and the Board are working to formalize holistic methods of farming that are designed to protect, sustain, and enhance natural resources on farms and farming communities throughout California.

Dr. Ba updated the group on a legislative proposal submitted by the Fertilizing Materials Inspection Program (FMIP) to define “bio-stimulant,” provide the Secretary with the authority to adjust the mill assessment, and to change the registration cycle from two years to four years. This proposal was supported by the Fertilizer Inspection Advisory Board and the fertilizer industry.

The Commercial Feed Regulatory Program applied for a \$5 million through a Conservation Innovation Grant (CIG) to fund research on enteric methane reduction strategies and the program is waiting for the outcome. On December 22, 2023, Office of Environmental Farming and Innovation announced the award of \$9.2 million in grant funding to six research projects under the Livestock Enteric Methane Emission Reduction Research Program (LEMER-RP). These funds, allocated by the Budget Act of 2022, support research that evaluates additives and dietary modifications shown to reduce enteric methane emissions in the dairy and livestock sectors.

### **PROGRAM UPDATES**

Mark Cady updated the group on the 2023 FREP/Western Plant Health Nutrient Management Conference. The presentations were well received, and the poster session was quite successful.

The NII is very active this winter with cooperating farm advisors working with the water quality coalitions on workshops and online meetings to help growers improve their nitrogen and irrigation efficiencies.

### **2023 REGULAR PRE-PROPOSALS**

Dr. Bottoms led the discussion in reviewing and voting on the 39 pre-proposal submissions for 2024. He began by giving a brief introduction of the grant process for new TASC members. Pre-proposals with 'yes' votes will be encouraged to submit full proposals.

TASC voted yes on the following pre-proposals:

- Determination of crop N-removal coefficient values for the Imperial and Coachella Valleys cropping systems- *Montazar, A., Geisseler, D., Smith, R.*
- A science-based and interactive website for nutrient management in organic crop production– *Geisseler, D., Lloyd, M., Decock, C., Muramoto, J.*
- Monitoring and assessing variability of nutrient status in almond orchards with hyperspectral satellite imagery empowered by artificial intelligence – *Jin, Y., Brown, P., Pourreza, A.*
- Equity in Irrigation and Nutrient Management Outreach – *Harkleroad, N., Hoffman, D., Fraide, A., Valenzuela, L., Murphy, L., Peterson, A.*
- Development of nitrogen application guidelines for Agave production in California – *Guzmán-Delgado, P., Runnebaum, R., Culumber, M., Marino, G., Daccache, A., et al.*
- Utilizing Artificial Intelligence to Map Potassium Fixation and Availability in California Cropland Soils: Decision Support Tools for Soil Potassium Fixation – *Wilson, S., O'Geen, T., Rees, G.*
- Development of Three Citrus Modules in The Decision Support Tool CropManage for Orange, Mandarin, and Lemon – *Miller, K., Ikemiya, D., Cahn, M., Singh, M., et al.*
- Developing Nutrient Requirements for Young Walnut Orchards after Whole Orchard Recycling – *Reyes, C., Holtz, B., Culumber, M., Conant, M. et al.*

TASC voted No on the following pre-proposals:

- Exploring water movement and biogeochemical reaction processes in Napa Valley Soils– *Tang, Q*
- Evaluation of nitrogen stabilizers and fertilization strategies in a non-bearing pistachio orchard– *Gordon, P., Brar G., Goodrich, B.*

- Best Practical Use of Nitrogen-Fixing Bacterial and Mycorrhizal Biostimulants for Nutrient Management of Asian Vegetables among Hmong and Chinese Growers – *Wang, Z., Moua, V.*
- Optimizing Nitrogen and Irrigation Management for Grafted Watermelons – *Wang, Z., Cahn, M., Hinson, B., Saganak, H.*
- Developing recycled water irrigation management information for multiple crops in Southern California – *Haghverdi, A.*
- Enhancing Nutrient Management through Integrated Remote Sensing – *Pourreza, A., Brown, P., Jin, Y.*
- Monitoring soil bulk electrical conductivity to detect and manage leaching – *Hillyer, C., Ashkan, S., Panagopoulos, A., Mohamed, A.*
- Assessing nitrogen mineralization rates and their relationship with soil health tests across varied organic amendments – *Bansal, S., Goorahoo, D., Ogunmokun, F.*
- Mitigation of Nitrogen loss and residual N utilization in a forage sorghum-corn rotation system – *Atim, J., Hutmacher, R., Clark, N.*
- Improvement of nitrogen use efficiency in leafy greens production in the Lower Colorado: An information-intensive site-specific variable rate approach – *Andrade-Sanchez, P., Sanyal, D., Heun, J.*
- Field demonstration of alternative delivery system (no-till), which sequesters carbon, increases yields, and reduces irrigation water & fertilizer use – *Novitsky, J., Kelly, S., Rapp, K., Stokes, M., Bianchini, G., Diaz, G.*
- Investigate soil phosphate loss and develop microbiological solution for rising global phosphate demand in agriculture. – *Champ, T., Champ, B.*
- Enhancing Water and Nitrogen Use Efficiency in Subsurface Drip Irrigated Processing Tomatoes through Surfactant Application – *Kisekka, I., Ogunmokun, F.*
- The Compton Community Garden/Micro Farm - Soil Composition Educational Training Program – *Ross, S., Capers, K., Perez-Johnson, M., Jasper, E., et al.*
- Measurement of nitrogen dynamics in nurseries under overhead and drip irrigation and under liquid or controlled-release fertilizer management – *Spinelli, G., Shogren, C., Mellano, V., Pitton, B.*
- Improving nitrogen management in avocado production with soil nitrate and salinity monitoring tools – *Montazar, A., Spinelli, G., Faber, B.*
- Adapting CropManage decision support tools for Irrigation and Nitrogen Management in Blueberry. – *Singh, M., Cahn, M., Mireles, J.*
- Assessing the Effect of Compost Supplement with Chemical and Organic Fertilizers on the Growth, Yield and Nitrogen Use Efficiency in Romaine Lettuce – *Tubeileh, A., Hight, C.*
- Reducing nutrient runoff, and surface water contamination in nursery production: Evaluating disinfection treatment efficacy of captured irrigation run-off water – *Del Castillo, J., Spinelli, G., Johnson, G., Shogren, C., Kashyap, R.*
- Nitrogen Fertigation Practices on Almond and Tomato During Wet years – *Bali, K., Culumber, M., Yaghmour, M., Wang, Z.*

- Phosphorus Fixation through Ferrous Sulphate Application in Container Systems – *Volk, E., Spinelli, G., Merhaut, D.*
- Highly Specific and Portable Phosphate Detection using Gold Nanoparticle Surface Plasmon Resonance (SPR) – *Champ, T., Champ, B., Rouhbakhsh, Z.*
- Optimizing Sheep Grazing for Sustainable Pistachio Orchard Management: A Study on Soil Health and Weed Control – *Wilson, H., Coelho, J., Etchamendy, J.*
- Determining fertilizer nitrogen value of dairy manure compost in lab incubation and in silage corn as a model crop – *Clark, N., Light, S., Leinfelder-Miles, M., Geisseler, D., Meyer, D.*
- Revitalizing Sodic Soils: Enhancing Water Infiltration and Salinity Management in California's Central Valley through Nanobubble Technology – *Oker, T., Coelho, J.*
- Evaluating Nutrient and Irrigation Water Use Efficiency of Zero-Loss Lemna Aquatic Cropping Systems in the San Joaquin Valley – *Kuzay, S., Clark, N.*
- Evaluating Nitrogen Mineralization of Emerging Plant-Based Organic Amendments, Lemna and Azolla, for Enhanced Nutrient Management in California – *Kuzay, S., Holden, D., Hallaj, N.*
- Blending Traditional Ecological Knowledge (TEK) with Agricultural Biochar Techniques: Improving resource use efficiency and soil health in Central Sierra region – *Chen, C., Oppliger, K., Celio, T., Singh, A.*
- Increasing NUE in Almond by estimating overwinter N supply and Improving Yield Prediction – *Brown, P., Karunakaran, R.*
- Sustainability - applying 50% of nitrogen budgets while maintaining yield and increasing crop quality; plant extracts as validated management practice – *Gillette, G., Kelly, J.*
- Novel technologies and associated outreach programs for ultra-high density microalgae scrubbers for manure management on farms– *Young, S., Gupta, N.*

Letters will be sent to the authors with the TASC's decision and comments in February 2024. Full proposals will be due by April 15, 2024, where the TASC will determine which proposals to recommend to the Secretary for funding.

### **PUBLIC COMMENTS**

No public comments.

### **AGENDA ITEMS FOR FUTURE MEETINGS**

TASC Revised By-Laws

### **NEXT MEETING**

Is to be determined.

### **ADJOURN**

**MOTION:** Dr. Diaz moved to adjourn the meeting; Dr. Charlotte Decock seconded the motion. The meeting was adjourned at 4:10 PM.

Respectfully submitted,

**ORIGINAL SIGNED BY MARK CADY**

Mark Cady  
Senior Environmental Scientist (Supervisory)  
Fertilizer Research and Education Program

Date: January 19, 2024