



**Fertilizer Research and Education Program (FREP)
Technical Advisory Subcommittee (TASC)**

California Department of Food and Agriculture (CDFA)
2800 Gateway Oaks Drive, Room 101
Sacramento, CA 95833
(916) 900-5022

**February 29, 2016
9:00 AM to 4:00 PM**

MINUTES

TASC Members

Dr. Marc Los Huertos, Vice Chair
Dr. John Bushoven
Mr. Rex Dufour
Dr. Eric Ellison
Mr. Charles Hornung
Ms. DD Levine
Dr. Robert Mikkelsen
Dr. Barzin Moradi

CDFA Staff

Dr. Amadou Ba
Mr. Mark Cady
Ms. Brooke Elliott
Ms. Natalie Jacuzzi
Dr. Marja Koivunen
Dr. Doug West

Invited Party

Dr. John Dickey

WELCOME AND INTRODUCTIONS

Dr. Marc Los Huertos called the meeting to order at 9:04 AM and welcomed the subcommittee. Dr. Jerome Pier and Mr. Steve Spangler were not able to attend the meeting. A quorum was established.

DEPARTMENT, DIVISION, AND BRANCH UPDATES

Dr. Amadou Ba announced the Division is in the process of filling three positions for the Medical Cannabis Cultivation Program (MCCP). The Environmental Program Manager II is Ms. Amber Morris, who previously worked at the Plant Division. The program is recruiting an Associate Governmental Program Analyst and an Environmental Program Manager I.

The MCCP will be responsible for issuing licenses to cultivators, establishing conditions for the cultivation, and tracking medical cannabis from seed to sale. Other state departments are involved, including the Department of Consumer Affairs, the Department of Public Health, the Department of Fish and Wildlife, and the State Water Resources Control Board (SWRCB).

The Organic Input Materials (OIM) program is a fertilizing material review program in the Feed, Fertilizer, and Livestock Drugs Regulatory Services Branch within CDFA. It is now recognized by United States Department of Agriculture's National Organic Program (USDA NOP), which means it is equivalent to other material review organizations in the United States, such as Washington State Department of Agriculture (WSDA) and Organic Materials Review Institute (OMRI). If materials are registered with CDFA's OIM program, they do not need to be registered by other material review organizations. About 1,550 labels are registered for organic use through the OIM program.

In January, FREP-funded nutrient management training for Certified Crop Advisers (CCAs) was held in Fresno, California, and about 100 CCAs attended. From 2014 to 2016, 890 CCAs have been trained in the state.

To date, 22 sessions of FREP-funded grower self-certification training have been held in the Central Valley. About 1,060 growers have attended and 81 percent of the attendees have passed the examination and received certifications. The grower training sessions will continue through May 2016.

The State Water Quality Control Board released the response to the petition of the Waste Discharge Requirements (WDRs) for growers in the Eastern San Joaquin River Watershed approximately two weeks ago. The response took the form of a proposed order to be adopted by the Regional Boards. It indicates that coalitions will continue to be responsible for collecting and analyzing data and submitting information to the Regional Boards. The proposed order requires the coalitions to submit some field level data in addition to post-processed data. The draft order is open for 60 days for public comments, and once adopted, each of the Regional Water Boards is required to adopt agricultural orders that are consistent with the State Board order.

REVIEW AND APPROVE MINUTES

Dr. Los Huertos requested the subcommittee review the minutes of the December 2, 2015, meeting.

MOTION: Dr. Rob Mikkelsen moved to approve the December 2, 2015, minutes; Dr. Eric Ellison seconded. The motion passed unanimously by present subcommittee members with a vote of 8 – 0.

PRESENTATION BY REPRESENTATIVE OF THE SOUTHERN SAN JOAQUIN VALLEY MANAGEMENT PRACTICE EVALUATION PLAN (MPEP) COMMITTEE

Dr. Barzin Moradi introduced Dr. John Dickey. The other meeting attendees made self-introductions.

Dr. Dickey, the technical lead of the Southern San Joaquin Valley Management Practices Evaluation Program (MPEP), presented the goals and plans of the MPEP team. The team works for the Southern San Joaquin Valley coalitions, which includes these seven coalitions: Kings, Kaweah, Tule, Kern, Cawelo, Westside, and Buena Vista.

The MPEP team looks at the effectiveness of management practices on a larger scale than individual farms. The goal is to obtain groundwater and management practices data, evaluate their effectiveness, and help growers comply with the regional board requirements of reducing the amount of nitrogen leaching into groundwater. The team wants to work with all researchers, including those that are funded through FREP, who will carry out studies that will build the body of knowledge necessary to complete the MPEP.

DISCUSSION AND RECOMMENDATION OF 2016 CONCEPT PROPOSALS

Dr. Los Huertos led discussion in reviewing and voting on the 2016 concept proposals; 44 concept proposals were received. TASC voted a majority “yes” for the following 13 proposals. Project leaders for these concept proposals will be invited to submit full proposals:

- *Development of a tool to estimate site-specific soil N mineralization for improved fertilizer N use efficiency*
Daniel Geisseler
- *Nitrogen Availability and Fertilizer Value of Organic Amendments*
Daniel Geisseler and William Horwath
- *Demonstration of Efficient Nitrogen Management Practices for Mixed Leafy Baby Vegetables in the Desert*
Charles Sanchez and Jose Aguiar
- *Field evaluation of N₂O emissions from alternative fertilizer management practices in California/Southwestern US vegetable production systems*
Sharon Hall and Charles Sanchez
- *Nutrient Management Seminars to Enhance Fertilizer, Soil, and Plant Health Knowledge Expectations*
Ruthann Anderson and Mindy Rohan

- *Development of nutrient budget and early season nutrient prediction model for Citrus*
Patrick Brown, Saiful Muhammad, and Emilio Laca
- *Block-level Yield Prediction for Seasonal N Fertilization Strategies in California's Almond Orchards*
Yufang Jin and Patrick Brown
- *Evaluation of Biochar for On-Farm Soil Management in California*
Sanjai Parikh
- *Can nitrification inhibitors increase N use efficiency in almond production?*
Patrick Brown
- *Online Decision Support Tools for Irrigation and Nitrogen Management of Central Valley Crops*
Michael Cahn, Allan Fulton, and Patrick Brown
- *Evaluation of composts and digestates of food and manure in long-term nutrient planning*
William Horwath
- *Training for Irrigators on Integrated Management of Irrigation Systems based on Climate, Soil and Plant Data*
Trina Walley
- *Validating Leaf Nutrient Critical Values for Citrus*
Philippe Rolshausen

TASC voted a majority “no” for the 31 following proposals. Project leaders for these concept proposals will be informed of TASC’s reasons for denial.

- *Development and Implementation of an Outreach and Education Program for Agricultural Operators in the San Jacinto Watershed*
Pat Boldt
- *Implementation of Efficient Water and Nitrogen Management Practices in Processing Tomato with High Frequency Subsurface Drip Irrigation*
Claude Phene, Brock Taylor, Inge Bisconer, and Rebecca C. Phene
- *Irrigation and Nitrogen Use Optimization Program for Central Coast Specialty Crops: Facilitating grower adoption of CropManage by linking existing tools, technology and technical assistance*
Chris Coburn
- *Enhancing Nitrogen Reduction Below the Root Zone – Laboratory and Pilot-Scale Study of Nitrate Transport in Agricultural Soils*
Bwalya Malama

- *Development of Timed-Release Organic Fertilizers to Improve Nitrogen Management in Organic Strawberry Production*
Joseph Blankinship and Joshua Schimel
- *Cloud Computing Services to Optimize Water and Nitrogen Fertilizer Use Efficiency at Orchard level using Remote Sensing*
Joaquim Bellvert Rios and Susan Ustin
- *Integrated Regional Irrigation and Fertilizer Management for Groundwater Protection*
William Green and Kaomine Vang
- *Reducing Orchard Leakiness through Controlled Very High Frequency Low-N Fertigation using Micro-Irrigation Systems*
David Smart, Sharar Baram, and Kristin Steger
- *“How Does Your Garden Grow?”*
Judy Culbertson and DeAnn Tenhunfeld
- *San Joaquin Sustainable Farming Project (SJSFP) Fertilizer Education Outreach Project for almond and cotton growers*
Marcia Gibbs
- *Determination of the appropriate rates and the effect of cow urine on soil properties and cauliflower yield at Harar, Ethiopia*
Birhanu Messele
- *Development of a dynamic crop model for a better understanding of water and nitrogen management of almond orchards in California*
Philippe Stoop and Theodore DeJong
- *Combining DeNitrification-DeComposition (DNDC) modeling with grower decision support tools to mitigate N₂O emissions in dairy forage and cool season vegetable production systems*
Martin Burger
- *An online tool for optimization of irrigation and fertigation management*
Maziar Kandelous, Patrick Brown, and Toby O’Geen
- *Effect of soil profile and irrigation practice on tree root systems*
Maziar Kandelous and Patrick Brown
- *Impact of organic matter amendments on nutrient availability in conventional almond production*
Patrick Brown
- *Effects of tannins-added dairy liquid manure on greenhouse gas emissions, nitrogen cycle, fertilization of corn, and microbial community of manure-amended soil*
Pramod Pandey, Frank Mitloehner, Alejandro Castillo, and Richard Jeanotte

- *Solution Center for Nutrient Management: outreach on organic amendments for sustainable crop production*
Sonja Brodt, Kate Scow, and Robert Wilson
- *Sustainable Agriculture Through Water and Nutrient Management and Soil Health*
Tony Walters and Lorrie L. Steely
- *Vermicompost Education and Outreach*
Trent Sommers and Andres Nantkes
- *Testing and Refining the IrriQuest Decision-Support Tool for Derivation of Agricultural Water Use Fractions in California*
Lee Johnson
- *A Web-Based Platform to Manage Leaching Fraction*
Shawn Ashkan and David Zoldoske
- *Optimized integrated manure and mineral N fertilizer inputs for corn forage systems*
Amélie Gaudin, Kate Scow, and Daniel Geisseler
- *Nitrogen Management Education for Socially-Disadvantaged Organic Farmers in the Salinas Valley*
Nathan Harkleroad
- *Translating Low-Cost, Site-Specific Measurements to Best Nitrogen (N) Management Practices in California Wheat*
Mark Lundy, Steve Orloff, Nicholas Clark
- *Education and Outreach on Biochar: Water, Fertility, and Environmental Impacts*
Milt McGiffen et al.
- *Adjusting the Use of Controlled Release Fertilizer to Optimize Nitrogen Management in Conventional Strawberry Production*
Chris Coburn
- *Quantifying the agronomic and ecosystem services benefits of walnut shell biochar as a soil amendment in small farm carrot production*
Garrett Liles
- *Reducing N Inputs up to 30% in Bearing Almonds*
Greg Baker and Rick Ventanovetz
- *Providing Education to California Agriculture Growers on how to Improve and Sustain Soil Health*
Greg Baker and Rick Ventanovetz
- *Microbial Inoculants can Enhance Root Growth and Nitrogen Uptake of Tomato*
Hossein Zakeri, Lee Altier, Rich Rosecrance, Garret Liles, and Kishore Joseph

The subcommittee agreed the FREP staff will send a letter to each of the project leaders, informing them that their concept proposal was selected or not selected for advancement to the full proposal phase. The deadline for the full proposals is May 16, 2016.

AGENDA ITEMS FOR FUTURE MEETINGS

The focus of the next meeting is discussion and recommendation of the full proposals. TASC proposed that new ideas and suggestions for the 2017 research priorities be briefly discussed as well.

NEXT MEETING

The date of the next meeting will be scheduled through a Doodle poll.

ADJOURN

MOTION: Mr. Chuck Hornung moved to adjourn the meeting; Mr. Rex Dufour seconded. The motion passed unanimously by present subcommittee members with a vote of 5 – 0.

Dr. Eric Ellison adjourned the meeting at 4:45 PM.

Respectfully submitted,

Dr. Barzin Moradi
Senior Environmental Scientist (Supervisory)
Fertilizer Research and Education Program

Date