



**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

**March 2, 2018
9:00 AM**

MINUTES

TASC Members

Dr. Jerome Pier
Rex Dufour
Dr. Eric Ellison
DD Levine
Dr. Marja Koivunen
Dr. Steve Petrie
Jenny Rempel

CDFA Staff

Dr. Amadou Ba
Dr. Martin Burger
Mark Cady
Brooke Elliott
Natalie Jacuzzi
Nicole Crouch

Interested Party

Brittany Munoz

WELCOME AND INTRODUCTIONS

Dr. Jerome Pier, Chair, called the meeting to order at 9:05 AM and welcomed the subcommittee. Dr. John Bushoven, Chuck Hornung, and David McEuen were not able to attend the meeting. Self-introductions were made and a quorum was established.

ELECTION OF VICE CHAIR

The Vice Chair is responsible for acting as Chair when necessary. The previous Vice Chair, Dr. Marc Los Huertos, did not renew his term. Dr. Pier requested nominations for Vice Chair.

MOTION: Dr. Marja Koivunen moved to nominate Dr. Steve Petrie as Vice Chair; Dr. Jerome Pier seconded. The motion passed unanimously by present subcommittee members with a vote of 7 – 0.

REVIEW AND APPROVE MINUTES

Dr. Pier requested the subcommittee review the minutes of the July 12, 2017, meeting.

MOTION: Dr. Eric Ellison moved to approve the July 12, 2017, minutes; Ms. Jenny Remple seconded. The motion passed unanimously by present subcommittee members with a vote of 7 – 0.

DEPARTMENT, DIVISION, AND BRANCH UPDATES

Dr. Amadou Ba briefly introduced the new TASC appointments: Dr. Jerome Pier, Dr. Eric Ellison, Rex Dufour, and Dr. Marja Koivunen. FREP recommended these appointments to the Fertilizer Inspection Advisory Board, and then to Secretary Ross for final recommendations. Future TASC member tenures will be limited to nine years.

At the Department level, there are several staff changes. In the Executive office, Jim Houston, the previous Undersecretary, now works at the Farm Bureau in governmental affairs. Jenny Lester-Moffitt, previously the Deputy Secretary, is now the Undersecretary. Taylor Roschen, previously the Assistant Secretary at the Executive office, also moved to the Farm Bureau. Rachael O'Brien is the newly appointed Assistant Secretary.

In the Inspection Services Branch, Mark Cady is now the Senior Environmental Scientist (Supervisory) for FREP. Barzin Moradi previously held the position, and now works at the Center for Analytical Chemistry as the Environmental Program Manager II, taking Nirmal Saini's position upon his retirement.

For FREP funding, there is a reserve of \$2.6 million and a research budget of \$1.7 million. Last year, FREP began funding four projects for approximately \$740 thousand, which was under budget. As a result, more grant funding is available this year. There is the possibility of a Special Request for Proposals, for which resulting grants would also use reserve funds.

In legislation, Senate Bill (SB) 623 was introduced last year, and is live for this two-year legislative cycle. SB 623 would require a higher mill assessment, paid through fertilizer sales, to contribute to the Safe and Affordable Drinking Water Fund. The assessment would be six mills, which would generate approximately \$16.7 million. This is an addition to the three mills that fund fertilizer programs, which includes one mill for FREP and two mills for enforcement and registration. Under SB 623, dairies, Concentrated Animal Feeding Operations, and water purveyors would pay into the Safe and Affordable Drinking Water Fund. The bill may become law, with full implementation by 2019.

DISCUSSION AND RECOMMENDATION OF 2018 CONCEPT PROPOSALS

Dr. Pier led discussion in reviewing and voting on the 2018 concept proposals; 57 proposals were received. TASC voted a majority "yes" for the following 12 proposals.

- Improving Nitrogen and Water Use Efficiency in the Low Desert Carrot Production through Efficient Irrigation Technology and Management Tools
Aliasghar Montazar
- Impact of Recycled Almond Hulls on Nitrogen and Potassium Dynamics in Almond Orchards
Patrick Brown, Christopher Simmons, and Sat Darshan Khalsa
- Understanding Influences on Grower Decision-Making and Adoption of Improved Nitrogen Management Practices in the Southern San Joaquin Valley
Patrick Brown and Mark Lubell
- Developing a Nitrogen Mineralization Model for Organically Managed Vegetable Farms on the Central Coast
Joji Muramoto, Carol Sennan, Richard Smith, Mike Cahn, Daniel Geisseler
- “Crop Nutrient Minute” Video Series
Parry Klassen
- Nitrogen Management in a Suitcase: Direct Measurement of Nitrate in Irrigation Water and Planning Assistance for Growers
Chris Rose
- Improving Nitrate and Salinity Management Strategies for Almonds Grown under Microirrigation (15-0523 Extension)
Patrick Brown
- Assessing Drip Irrigation and Nitrogen Management of Fresh Onions Produced in California Low Desert
Jairo Diaz, Roberto Soto, Daniel Geisseler, Gail Bornhorst, Irwin Donis-González
- Promoting the Adoption of Soil Nitrogen Quick Tests by Spanish-Speaking Operators on Strawberry Ranches in Santa Cruz and Monterey Counties
Gerry Spinelli and Richard Smith
- An Integrated Framework for Assessing Effects of Irrigation and Fertigation Management on Nitrate Movement in the Deep Vadose Zone
Isaya Kisekka, Thomas Harter, and Jan Hopmans
- Efficient Water and Nitrogen Management Practices for Mixed Leafy Baby Green Vegetables in the Desert
Charles Sanchez
- Pima Cotton Nitrogen Management, Uptake, and Removal – Impacts of Varietal Differences, Subsurface Drip and Furrow Irrigation
Robert Hutmacher

TASC voted a majority “no” for the 45 following proposals.

- Avoiding Chlorine (Not Chloride) Toxicity with Tertiary Reclaimed Water for Agriculture and Landscape Irrigation
Charles Burt
- Identifying Barriers and Developing Strategies to Increase Implementation of Nutrient Best Management Practices
Matt Strassberg and Pat Field
- Quantifying the Benefits to Soil Carbon and Nitrogen of a New Pea Population with Enhanced Nodulation and Cover Crop Potential
Hossein Zakeri
- Nitrogen Fertilizer and Irrigation Best Management Practices for the Low Desert Pasta Producing Wheat Cropping Systems
Oli Bachie, Ali Montazar, and Eta Takele
- Evaluation of N Mineralization of Various Composts on Almonds
Cameron Gerecke
- Nitrogen Uptake in Carrot and Use of Chlorophyll Meters to Adjust In-season Nitrogen Applications
Brian Marsh
- Fertigation Education for Central California
William Green and Timothy Jacobsen
- Developing a Mobile Nitrate Decision Support Platform
Kaomine Vang and Jorge Moreno
- Fertigation Education for Hard to Reach and Small Farms
Kaomine Vang and William Green
- Identifying Barriers of Adoption of BMPs for Central Valley Growers
William Green and Timothy Jacobsen
- Enhancing the Sustainability of Citrus Production with Mulching and Improved Cultural Practices
Cindy Fake and Louise Ferguson
- Characterization of Below-Root Zone Nitrogen Dynamics in Southern California Avocado, Blueberry, and Tomato Cropping Systems as Affected by Farm Management
Laurent Ahiablame
- Accelerating Best Management Practice Adoption in California
Kara Heckert
- Use of Soil Amendments Containing Nickel to Maximize Nitrogen Utilization in Agricultural Woody Perennials in California
Jeanea Lambeth and Jerald Wheeler

- Growers Network and Demonstration Sites to Support Carbon Farming and Improve Input Management in San Diego County
Ann Baldrige, RCDGSDC
- Improving Management of Nitrogen Fertigation in Strawberry Production in the Central Coast of California
Gerry Spinelli and Michael Cahn
- Immobilization of Nitrate in Winter-Fallow Vegetable Production Beds to Reduce Nitrate Leaching
Richard Smith, Joji Muramoto, Carol Shennan, and Forrest Melton
- Organic Farming Fertilizer Education and Research (OFFER)
Nathan Harkleroad and Ben Burgoa
- Promoting Soil Health and Fertility Management Innovations: Barriers, Motivations, and Enabling Conditions
Alastair Iles, Claire Kremen, and Tim Bowles
- Nitrogen and Water Management of Citrus Trees using UAV-Based Remote Sensing Technology
Subodh Bhandari
- Evaluation of Dynamics and Nitrate Leaching Potential in Irrigated Cropping Systems
Ruijun Qin and Scott Lukas
- Enhancing Water Retention and Nutrients Uptake in Crop Root Zone by Improving Agricultural Practices in Central Valley
Lubo Liu
- High-resolution Images of Macro and Micronutrient Deficiency, Toxicity, and Salinity Symptoms and the Establishment of Standard and Critical Tissue Values for Romaine and Butterhead Lettuce
Dharma Pitchay
- Filling Knowledge Gaps for Nitrogen Management in Lettuces and Strawberries
Sonet Van Zyl
- Quantifying the Effects of Biochar on Nitrogen Mineralization Rates for Incorporation in Nitrogen Management Plans
Jackson Webster and Sandrine Matiasek
- Addressing Challenges to Adoption of Nutrient Management Practices
Jacob Hernandez and Kris Beal
- A Drone Based Decision Tool to Improve Nitrogen Use Efficiency in California Rice Systems
Bruce Linqvist and Telha Rehman

- Soil Nitrate Testing and Test Interpretation for Drip Irrigated Crops – Are We Doing It Right?
Daniel Geisseler, Sarah Light, and Nicholas Clark
- Improved Nitrogen Control and Water Management
Christopher Finnegan
- Evaluation of Basalt-Based Catalysts for the Reduction of Nitrate in Food Waste Compost
Sanjai Parikh
- Nutrient Management in California Cannabis Cultivation
Dan Mar
- Monitoring Crop Activity to Improve Fertilizer Management
Steve Deveral, Sabrina Dore, and Lucas Silva
- Efficient Water and N Management Practices for Drip Irrigated Watermelons and Cantaloupes
Charles Sanchez
- Optimizing Mulch and Compost Amendment to Achieve Perennial Crop Nitrogen Objectives
David Smart
- Estimating In-Field Nitrogen Mineralization Rates from Dairy Manure for Nutrient Management Plans
Daniel Howes
- Evaluating HFLC Nitrogen Management Strategies to Minimize Reactive Nitrogen Mobilization from California Almond Orchards
David Smart
- Characterizing Nitrate Movement and Distribution Below the Root Zone as Affected by Incorporation of Certified Soil Organic Amendment with Fertilizer N
William Horwath and Xia Zhu-Barker
- Improving N Management Plans for Perennial Cropping Systems Using Cover Crops by Determining Their In-Field N Mineralization Rates and N Allocation in the System
Xia Zhu-Barker and William Horwath
- Improvement of Irrigation and Nutrient Efficiency to Reduce the Risk of Canker Disease in Stone Fruits and Nut Crops in California
Themis Michailides
- Carbon Offset Opportunities for Nitrogen Management in California Crops
Trevor Anderson and Sami Osman

- Evaluating Nutrient Release and Loss from Poultry Manure Compost Applied to Tomato With and Without Winter Cover Crops
Nicole Tauges and Kate Scow
- Develop and Refine Crop Coefficients for Vegetable Crops Grown in the Central Coast
Parry Klassen, Richard Smith, and Michael Cahn
- Developing Management Plans for the Use of Green Waste Compost Together with Chemical Fertilizer in Fresh-Market Tomato Production by Understanding Soil Organic Matter Stability, N Mineralization Dynamics, Greenhouse Gas Emissions, and Plant Nutrient Uptake
Xia Zhu-Barker and William Horwath
- Developing Best Management Practices to Reduce N Losses in Potato Fields
Ruijun Qin
- Optimizing Nitrogen Management [Almonds]
Michelle Fisher, Conrad Wright, and Paul Parises

AGENDA ITEMS FOR FUTURE MEETINGS

The full proposals submitted to FREP will be reviewed. In addition, ideas and suggestions for future research priorities, the process of the Request for Proposals, and funding will be on the next meeting agenda.

NEXT MEETING

The next meeting will be scheduled via Doodle poll, with choices between late July and early August 2018.

ADJOURN

MOTION: Mr. Dufour moved to adjourn the meeting; Dr. Koivunen seconded. The motion passed unanimously by present subcommittee members with a vote of 7 – 0.

Dr. Pier adjourned the meeting at 3:38 PM.

Respectfully submitted,

ORIGINAL SIGNED BY MARK CADY

April 16, 2018

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

Date