CDFA Role in Nitrogen Management

Karen Ross, Secretary, California Department of Food and Agriculture

I appreciate the opportunity to contribute to the ongoing dialogue and proactive activities of the California Certified Crop Advisor (CCA) Program and the California Department of Food and Agriculture (CDFA) to effectively address nutrient management in California. CDFA is committed to the protection and promotion of California agriculture to ensure the production and delivery of safe food and fiber, while supporting the health, safety and welfare of our citizens. Effective nitrogen management activities provide a variety of environmental and economic benefits including improving water quality, reducing NOx emissions, and providing alternatives for growers.

CDFA works very hard to create and sustain collaborative relationships with growers, regulators, stakeholders and the public. CDFA strives to provide the financial means, through the funding of research to facilitate the opportunity to achieve a thriving 21st Century agricultural sector. Sustaining collaborative relationships with all sectors of the economy is a key means to ensure a sustainable California agricultural economy.

CDFA provides an important service to producers, merchants and citizens through the Fertilizer Research and Education Program (FREP). The FREP competitive grant program promotes the environmentally safe and agronomically sound use and handling of fertilizing materials.

FREP has re-prioritized the 2013 Request for Concept Proposals research areas to better assist growers that are addressing emerging nutrient management issues in the Central Valley and Central Coast regions. CDFA is encouraging the development and submission of concepts that demonstrate experimental research trial data (e.g., prior FREP research findings) at the field scale in organic and conventional fertilizers. Another priority research area is the evaluation of strategies and potential technologies to increase crop nitrogen fertilizer uptake while reducing its movement off irrigated agricultural lands. The goals include minimizing nitrate movement below the root zone and minimizing nitrous oxide emissions related to fertilizer use. Additionally, as in previous years, FREP seeks concepts on developing Best Management Practices (BMPs) along with proposals to provide education and outreach opportunities on effectively and efficiently managing fertilizing materials.

Through these focused research priorities, CDFA is building a comprehensive nutrient management approach that includes five initiatives:

Nitrogen Research – FREP will remain true to its mission by continuing to fund research on the management of agricultural nitrogen by fully addressing methods to minimize environmental impacts from fertilizer applications, while sustaining yields.

Special Request for Proposals (SRFP) – In 2012, FREP released an unprecedented Special Request for Proposals. The purpose of this SRFP was to specifically address the issue of nitrates in groundwater in environmentally sensitive areas of California. The "pump and fertilize" method used in concert with nutrient management plans is one way to reduce nitrates in groundwater. FREP has funded two studies to test the practicality of this method. Through a competitive process, two projects were chosen with a combined value of over $750,000. The three-year projects focus on nitrate sensitive areas in the Tulare Lake Basin and the Salinas Valley. Currently in the research development stages, both projects will address the question of whether the "pump and fertilize method[1]" is practical and effective in reducing the impacts associated with the application of nitrogen fertilizing materials.

FREP Database – In partnership with the University of California (UC), FREP has developed a searchable, web-based database of all completed FREP research projects. This database serves to disseminate FREP research findings and is an easily accessible, understandable, and convenient way for growers and crop advisors to learn about and implement the findings. Phase I of the project, completed in July 2012, summarized all completed projects and entered them into the database. The database is available at *http://www.cdfa.ca.gov/is/frep/Default.aspx*. Phase II includes

the creation of crop fertilization guidelines, based in part on nitrate sensitivities[2], of a given agricultural area or region. The first guideline will focus on crops[3] in the nitrate sensitive regions of the Tulare Lake Basin and the Salinas Valley. Phase II is anticipated to conclude in late 2014.

FREP CCA/Grower Nitrogen Management Training and Certification – FREP is currently working on a management training program: initially it will focus on a nitrogen management training and certification program for Certified Crop Advisors (CCAs). The initiative is a cooperative effort by CDFA, the CCA program and UC. FREP has collaboratively drafted a course outline in consultation with the CCA Board of Directors and is working with UC Division of Agriculture and Natural Resources (ANR) to develop a curriculum and training materials.

CDFA/FREP Coordination with UC ANR - Workshops – In June 2012, FREP partnered with the UC ANR Institute for Water Resources to hold a series of forums titled "Managing Agricultural Nitrogen." Held in Sacramento and Tulare, the free forums were open to the public and were geared toward growers, dairy operators, agency representatives, agricultural commissioners, policymakers, and other concerned community members. The goal of these forums was to discuss nitrogen management, explore solutions to nitrate in groundwater, and recognize the need for additional research and education. In 2013, these forums will continue to address the emerging scientific and technical needs of growers.

With an enhanced and re-focused nitrogen management program, CDFA FREP is committed to providing effective tools to help growers. By advancing the agronomically sound use of fertilizer materials, FREP offers technical education for growers and CCAs, provides research to improve nutrient management practices, and promotes education to increase the environmentally sound use of fertilizer materials.

[1] The 2012 UC Davis Report on *Addressing Nitrate in California's Drinking Water* is available at *http://groundwaternitrate.ucdavis.edu/*

[2] Nitrate sensitivities include degree of groundwater usage, soil type, crop type, irrigation practices, climate, depth to groundwater and potential impact.

[3] Top ten crops based upon acreage within the nitrate sensitive areas are: almonds, cotton, silage corn, hay, tomatoes, rice, wheat, grapes, broccoli, romaine and head lettuce.