

**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE
FERTILIZER RESEARCH AND EDUCATION PROGRAM**

Nitrogen Management Initiatives

The California Department of Food and Agriculture (CDFA) is currently pursuing seven different initiatives relating to water quality and nitrogen, five of which are being addressed directly through the FREP program.

1. FREP Funded Research on Nitrogen

FREP has remained true to its original mission by continuing to fund research on the management of agricultural nitrogen including remediation of nitrate in tile drain water. For example, FREP is currently funding a project with the UC Davis Department of Plant Sciences, titled "Remediation of tile drain water using denitrification bioreactors."

2. FREP Special Request for Proposals (RFP)

In 2012, FREP released its first-ever Special Request for Proposals. The purpose of this Special RFP was to specifically address the issue of nitrates in groundwater in environmentally sensitive areas of California. The Special RFP called for proposals focusing on research that utilized the "pump and fertilize" method in concert with nitrogen budget worksheets to show proof-of-concept. Two projects were selected for funding and are currently in the development stages. The projects will demonstrate if the "pump and fertilize" is an effective method in reducing use of nitrogen fertilizer based on the nitrates available in the ground water, and subsequently reduces nitrate levels in groundwater aquifers.

3. FREP Database

In partnership with researchers at UC Davis, FREP has developed a searchable, web-based database of FREP research projects. This database aims to make the wealth of information contained in FREP research reports readily available, easily understandable, and convenient for growers and crop advisors to implement. Phase I of the project was completed in July; all 120 completed FREP projects have been summarized and entered in 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 and is currently being developed.

4. FREP CCA/Grower Nitrogen Management Training and Certification

FREP is currently working on two nitrogen management training programs: the first is a nitrogen management training and certification program for Certified Crop Advisors (CCAs), and the second is a nitrogen management education and outreach program targeting growers. The concept has been approved by the Fertilizer Inspection Advisory Board and CDFA Secretary Karen Ross. FREP has drafted a course outline in consultation with the CCA Board of Directors and is working with UC ANR regarding curriculum development and training.

5. CDFA/FREP Coordination with UC ANR - Workshops

In June 2012, the CDFA FREP program partnered with the UC ANR Institute for Water Resources (CIWR) to hold a series of forums titled "Managing Agricultural Nitrogen." Held in Sacramento and Tulare, the forums were free and open to the public and were geared toward growers, dairy operators, agency representatives, agricultural commissioners, policymakers, and other concerned community members. The goals of these forums were to discuss the role of policy in nitrogen management, explore solutions to nitrate in groundwater, and cover the need for additional research and education.

6. CDFA Collaboration with CV Water Board/Eastern San Joaquin WDR

CDFA has engaged in discussions with the CVWQCB staff on the Eastern San Joaquin WDR by providing agronomic expertise and addressing the feasibility of some of the requirements. CDFA has also been engaged in discussions with coalition staff on providing scientific expertise on potential practical solutions to address nitrates in groundwater systems. The FREP CCA/Grower nitrogen management training and certification initiatives were designed to help growers with nitrogen management plans which will be required in some areas according to the WDR.

7. CDFA Science Panel on Nitrogen Trading Markets

The Environmental Farming Act Science Advisory Panel is working to establish a pilot project on nitrogen trading between a point source (e.g., water treatment facility) and a non-point source (farm) operation. The science panel and CDFA are exploring the benefits of this method in incentivizing growers to manage their nitrogen further.