

# IRRIGATED LANDS REGULATORY PROGRAM: Success Stories!

## Successful Implementation of Nitrogen Management Training for Certified Crop Advisors and Growers

*The Central Valley Water Board Irrigated Lands Regulatory Program requires growers in areas identified as being vulnerable to groundwater contamination to complete a certified Nitrogen Management Plan (NMP). However, few experts were available to certify the plans when this requirement was first established. To address this issue, the California Department of Food and Agriculture (CDFA) Fertilizer Research and Education Program (FREP) and the University of California Division of Agriculture and Natural Resources developed a nitrogen management training program for Certified Crop Advisors (CCAs). Based on the CCA training program, a team at UC Davis developed a nitrogen management curriculum for growers, and the Coalition for Urban Rural Environmental Stewardship (CURES) worked with FREP to deliver the curriculum to growers. Since 2014, approximately 900 CCAs and 1,500 growers have been trained.*

### Problem

Central Valley growers who farm in areas identified as being vulnerable to groundwater contamination are required to complete a certified NMP, which focuses on nitrogen planning in order to eliminate agricultural contributions to nitrate concentrations in groundwater. However, upon the Central Valley Water Board's establishment of this requirement, few nitrogen experts were available to certify NMPs.



Figure 1: Growers attend nitrogen management training. Photo courtesy of Mark Cady at CDFA, November 2015.

### Project Highlights

While the NMP certification requirement was being developed, the Central Valley Water Board worked with CDFA to determine the best way to increase the number of experts available to certify NMPs. With funding from FREP, a group of UC Davis experts designed a nitrogen

management training program for CCAs. This program was first offered in 2014.

The following year, FREP funded UC Davis specialists to adapt the CCA curriculum for growers who wanted to certify their own NMPs. CURES, in cooperation with FREP and UC Davis, presented the grower training curriculum to a group of CCAs who have since delivered the training to growers across the region.

Both training programs review the issue of elevated nitrate in California groundwater, the nitrogen cycle, formulations of nitrogen, management and use efficiency, irrigation efficiency, nitrogen cycling, and completion of the NMP. This information is provided to enable CCAs and growers to:

- Efficiently use nitrogen fertilizers;
- Minimize environmental impacts; and
- Meet regulatory compliance requirements (e.g., complete a NMP).

The CCA training also includes detailed information about nitrogen application practices, irrigation practices, and nitrogen use efficiency for a variety of crops so that the CCA's recommendations can be tailored to each grower they work with.

CCA training lasts one-and-a-half-days and permits CCAs to certify NMPs for any crop on any field. The grower training occurs during a 4-hour session and permits growers to self-certify NMPs for any field that they own or manage. Both of these training programs were developed and have evolved in consultation with the Central Valley Water Board.



Figure 2: Larry Schwankl trains the trainers. Photo courtesy of Mark Cady at CDFA, October 2015.

## Results

The nitrogen management training program has achieved the following increase in experts able to certify NMPs:

- 890 of approximately 1,100 CCAs.
- 28 CCAs are also trained to lead grower sessions.
- Approximately 1,500 growers can now self-certify their NMPs (as of May 2016).

In addition, Central Valley Water Board staff has been encouraged by CCA and grower comments made during training sessions that indicate an increased focus on water quality in nitrogen planning, which has historically been driven by economics (e.g., crop and nitrogen fertilizer pricing).