

MANAGEMENT

Winter 2010



Sustainable Conservation

Photo Courtesy of Cal Poly Dairy

Flow Meters: What they can do for you

Turlock dairy operator Joey Rocha, Jr. understands the importance of staying ahead of the curve when it comes to environmental regulations.

Juggling nutrient management plan requirements with wastewater application, Rocha saw the value of flow meter accuracy on his family's 1,400-cow dairy. Knowing what you're doing with wastewater amounts makes execution of management plans easier, he affirmed.

"Flow meters are tools that take the guess work out of applications. I see it as an essential tool for accuracy in wastewater applications on my fields," Rocha said. "Before we were guessing- now we know."



Prop 50 Funded flow meter

Rocha started dairying in Turlock, in 1971, before the advent of

myriad environmental regulation. Now, nutrient management plans must include application rates and dairy producers are finding that accuracy of delivery rates is vital. Rocha's wastewater delivery system pulls from four settling ponds and can add fresh water from an irrigation well as well as canal water from Turlock Irrigation District. The water is used to irrigate 266 of the 550 acres of corn silage/winter forage crops grown by Rocha.

In 2008, before Rocha installed his flow meter, The Source Group Inc. recorded all wastewater applications to the seven fields receiving wastewater. Application rates had to be estimated based on pump output. Adding to the complication was the varying distance from pump to field and varying pipe diameters. One field was only 1,300 feet away, but fields across Griffith Road are as far as 9,000 feet away. Pipe diameters ranged from 10-inch to 15-inch. Rocha said they knew there was a variation in delivery rate due to pumping distance and pipe diameter, but the difference was virtually impossible to determine without a flow meter.

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Tips on managing wastewater during the wet season

Wastewater can be a liability in a wet winter for dairy producers who do not have enough lagoon capacity. Water quality regulations are clear about overflows and land applications that exceed agronomic rates. Producers risk being in violation of the new Waste Discharge Requirements (WDRs) if applications are not done in accordance with a site specific Nutrient Management Plan (NMP).



of storage capacity. Using less water in the parlor is possible, she said, but that means higher concentrations of nutrients and solids in the lagoon and potential challenges if this water is used for flush water or when this water is ultimately land applied.

“This is a challenging situation and may provide a basis to encourage producers to re-think their manure handling system,” said Meyer. “That’s the reality.”

Lagoon capacity

There are a few things producers can do to minimize the issues associated with capacity shortfalls during the winter. Paul Sousa of Western United Dairymen recommends looking at your nutrient management plan with the agronomist who prepared it. Sousa said there might be some room in the plan to modify nutrient water use when capacity is a concern.

“There are things you can do with an agronomist to optimize your farming practices with regard to lagoon capacity,” said Sousa.

According to Sousa, NMPs should consider lagoon capacity and how it relates to the agronomic application of the manure nutrients. Scheduling an agronomic pre-irrigation for a winter forage crop, for example, is one way of optimizing lagoon capacity, as long as it works with the cropping system for the farm. However, ultimately dairies will need to have enough lagoon capacity to implement their NMP and that is what the Waste Management Plan that is due next July will entail.

University of California, Davis Livestock Waste Management Specialist, Deanne Meyer, said there are not a lot of options for dairy producers who find themselves short

Be prepared for sampling

In addition to freeboard, lagoons should have capacity for a 25-year, 24-hour storm event (that’s about 2.4 inches of rain in 24 hours for most parts of the San Joaquin Valley). Producers should be aware that specific offsite storm water runoff from land application areas must be sampled. Documents to guide an operator through the sampling requirements are available at www.cdqa.org/binder.asp see Section 8 on discharge monitoring.

Producers are also advised to visit the laboratory they use for other analyses prior to the rainy season and request a bottle set in the event of a storm water discharge. The lab will supply producers with the correct number and type of bottles as well as any special instructions about holding time of the samples.

Some laboratories or consultants will also offer a storm water sampling service, which includes field measurements, sample collections and transportation to the lab. This option ensures the samples are done to state specifications and producers do not have to purchase equipment for sampling.

As onerous as this requirement sounds, producers should know that if their nutrient management plan is followed and nutrients are applied agronomically, there should not be a problem with storm discharges from the cropland. ■

PROP 50 FUNDING AT WORK



Some of Sustainable Conservations Prop 50 Grant Projects consisted of...

- 1.) **Flow Meters**, on 8 different dairies throughout the San Joaquin Valley.
- 2.) **Lagoon Pipelines**, on 6 different dairies adding over 2,000 additional acres of cropland to their water distribution infrastructure.
- 3.) **Manure Scrape Systems**, on 5 farms comprised of 4 Honey Vac's and an electric scrape system.

Funding Opportunities

2010 USDA NRCS EQIP Applications Available

Applications for the Environmental Quality Incentives Program (EQIP) are being accepted for funding in fiscal year 2010 from now through Jan. 15, 2010, at USDA Natural Resources Conservation Service (NRCS) offices throughout California. Conservation cost-share programs provide financial and technical assistance to farmers and ranchers for natural resource improvements.

Two parts of EQIP have an extended sign-up period, the organic initiative and combustion engine emissions reduction initiative. These two facets of EQIP are only in their second year and producers may need extra time to enroll. The engine emissions reduction portion has \$13.4 million available and the organic initiative has \$2.4 million available. Sign-up is open until Jan. 29 for both special initiatives.

In fiscal year 2009, California NRCS worked with farmers and ranchers on \$77 million of conservation contracts, setting a new record high in the state. The contracts covered a broad spectrum of natural resource enhancements including increasing irrigation efficiency; nutrient and manure management on dairies; grazing land management; riparian buffers and wildlife habitat; wetland protection; forest management and more. Assistance can be in the form of structures and conservation "hardware" such as irrigation or manure management facilities, as well as incentive payments for proper management to achieve environmental benefits.

Applications for EQIP are accepted year around. However, for initial funding consideration during fiscal year 2010, applications received by Jan. 15, will be given first priority. To view EQIP information, visit the California NRCS Web site: www.ca.nrcs.usda.gov/programs. Contact you local NRCS Office to submit an application.

USDA NRCS AWEP Funding

Western United Dairymen received an Agricultural Water Enhancement Program (AWEP) grant for \$17.3 million to complete Waste Management Plans and install infrastructural improvements on dairies to protect water quality. Sign up for year 2 of the grant should open during the winter/spring of 2010. There will be \$5.75 million available during the sign up period for year 2. If a dairyman has not previously signed up to get their WMP covered, they are encouraged to do so as soon as the sign up period opens to give their engineer enough time to complete the WMP by the July 2010 deadline. If producers have any questions they can contact Paul Sousa with Western United Dairymen at 209-527-6453. Applications can be completed at your local USDA NRCS office.

BMP Challenge Yield Guarantee Program

For more information refer to the articles on page 5.

Dairymen! Guarantee Your Yields

- ❖ Receive Free WDR Technical Assistance
- ❖ Get Paid if Your Yield Decreases

Visit us at the World Ag Expo
BMP Challenge Booth M52

Contact Joe Choperena at
(415) 977-0380, ext. 320



ATTENTION
SJV
Dairy
Farmers:

You're
Invited to
Attend
Our
Luncheon
Seminar

Thursday,
February 11,
2010

11:00am to
1:00pm

Hospitality
Event Center
LOCATED ALONG
MEDIAN AND
S STREET



www.suscon.org

Special Manure Management Certification Now Available

The California CCA Board is offering an exam leading to a Specialty Certification in Manure Management. This is a voluntary certification available only to California CCAs in good standing. It is offered as a tool to build clientele in the dairy industry and to demonstrate additional CCA competency in a regulated category of nutrient management.

The exam will be offered on the same day and location as other CCA exams on February 1, 2010. The sign-in registration period is October 5, 2009 through December 11, 2009.

Current CCA's have been mailed a registration form for the manure management certification exam and the registration form will also be available on-line.

The requirements and information for the certification are as follows:

- 1) Pass an exam with a score determined by the CA CCA Board. (You must hold a valid CCA certification in order to take the Manure Management Certification exam. You cannot take the CCA exams at the same time as the Manure Management Certification exam.)
 - 2) Earn 5 CEUs every 2 years in Manure Management. This does not increase the current requirements of 40 CEUs every 2 years. The requirement of 5 CEUs every two years in Nutrient Management, Soil & Water, IPM, and Crop Management remain unchanged.
 - 3) Fees for the exam are \$95.00.
 - 4) Fees for annual renewal are \$65.00. This is in addition to the current renewal fees.
- A training session is planned for January 2010. To access a PDF of the manure management certification performance objectives please visit www.cacca.org.

For additional information on this certification, contact Bob Fry at (530) 792-5659 or Robert.Fry@ca.usda.gov. ■

USEFUL INFORMATION...

For dairy producers who may leave the business or sell their cows on the herd retirement program, please be aware that you may still have Waste Discharge Requirements to meet. Please check with the California Dairy Quality Assurance Program or your California Dairy Campaign or Western United Dairymen field representative.



Nutrient Management
Newsletter
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Take the Challenge. How much can you save?

Central Valley Farmers:

Wouldn't it be great to have a guarantee for using conservation practices that can also save you money? Farmers in the Midwest have been taking advantage of just such a guarantee. This opportunity is now available to farmers in California! The BMP Challenge protects your income while you assess how reduced tillage or nutrient management practices perform in your own fields, without risk to your bottom line. Thanks to a grant from the USDA Natural Resources Conservation Services, the BMP Challenge is available to California producers planting corn silage in the spring of 2010. Participating in the BMP Challenge is easy from start to finish. With the help of a crop advisor or the Conservation Tillage Workgroup, you select a field to enroll. You apply your usual nutrient application rate or tillage practice on a check

strip in the same test field where the new BMP practice is introduced. At harvest, you and your advisor compare field yields and net returns. You are compensated if there is any reduction in your yields. It's a great risk-free opportunity for farmers and advisors to implement new practices.

To date, participating farmers have saved more than 150,000 pounds of nitrogen and an estimated 2,000 tons of sediment loss.

The BMP Challenge is a collaborative project of Agflex, the IPM Institute of North America, American Farmland Trust, California Conservation Tillage Workgroup and Sustainable Conservation.

For more information you can contact: California Conservation tillage workgroup - Jeff Mitchell (559) 303-9689 or Ladi Asgill at Sustainable Conservation (209) 576-7729. ■

Attention Dairy Farmers:

- Receive Free WDR Technical Assistance and
- Get Paid if Your Yield Decreases

Professional agricultural consultants will use your farm's NMP to develop appropriately timed nutrient application rates throughout the crop's growth cycle. *If your yields are lower than your neighboring fields, you will receive a \$30.00/ton reimbursement.*

By enrolling in the BMP Nutrient Management Challenge you will also receive training in:

- flow meter use and
- nutrient application that will help you meet Water Board requirements.

If you are interested in learning more about the Nutrient Management program, contact Joe Choperena at (415) 977-0380 ext. 320 or Bridget Whitney at (209) 669-1800. ■

“Flow Meters” continued from page 1

The flow meter was installed in January 2009, and the first readings revealed significant differences in delivery rates. Fields closest to the pump saw rates from 3,100 to 3,300 gallons per minute depending on the viscosity of the wastewater. Rates dropped to 2,200 to 2,300 gpm at the mid-range fields and to 1,800 to 1,900 at the fields farthest from the pump.

Estimating application rates in 2008 also caused questionable nutrient delivery rates. Rocha had fields where nitrogen varied from 38 pounds per acre to 133 lbs. per acre based on time to irrigate and pump output. With flow meter use, the application rates were more accurate and consistent, varying only from 38 pounds per acre to 50 pounds per acre with no infrastructure or management changes. Rocha said the information allows nitrogen applications to be timed to meet crop uptake.

Rocha also noted how his flow meter saved pumping costs. By the end of the 2009 season, he said the pump was only moving 2,700 gallons per minute to the closest fields and



Central Valley dairy producer David Linhares with his Prop 50 funded flow meter and pipeline.

1,600 to those farthest from the pump.

“When we saw how the pump slowed we knew pump repairs were probably in order. We checked there first and found the impellor was worn.” Continuing to pump with the lower efficiency, Rocha said, would have increased pumping costs as well as pumping time.

Records from 2009 revealed other areas that need improvement. One example is variation in nutrient concentration in the wastewater and how the variation affects the amount of nitrogen delivered to the field. With two years of wastewater samples and one year of flow meter data, Rocha can now make management changes to achieve ideal application rates depending on the time of year and the crop.

Rocha admits he was reluctant to install his flow meter when he first purchased it in 2005.

Last January, necessary control valve repairs presented him with an opportunity to uncover the wastewater pipeline at an installation site. Rocha said he knew it was an important tool for record keeping, but then was not sure how much value it would add to the dairy operation. ■



Sustainable Conservation

**NUTRIENT MANAGEMENT
NEWSLETTER**

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