

# Dairy Feed Management

## Sign up now for April workshops on plan writing

Two workshops in April will teach certified feed management planners how to develop a feed management plan. The workshops will be a combination of classroom and on-farm instruction.

**Certified feed management planners who attend one of the workshops and then complete the plan can use it as one of the two plans needed to fulfill the requirement to be a technical service provider.**

Workshop times are 8:30 a.m. to 3:30 p.m. Dates and locations are:

**April 2** – Oregon Dairy Restaurant, Litz, PA, with on farm session at Oregon Dairy. Please note that this session is almost full.

**April 16** – Franklin County Extension Office in Chambersburg, PA, with on-farm session at Falling Springs Farms.

For details:

<http://www.das.psu.edu/dairy-alliance/education/feeding-management>



A newsletter for certified feed management planners

March 2009 Volume 1, Issue 3

## Large Animal Feeding Operations May Need to Meet Air Emissions Reporting Requirements

A new ruling regarding air emissions reporting for large animal feeding operations took effect January 20, 2009. The best information on the relaxing of the reporting requirement for CERCLA and EPCRA can be found at the Livestock and Poultry Environment center's site:

[http://www.extension.org/pages/Large\\_Animal\\_Feeding\\_Operations\\_May\\_Need\\_to\\_Meet\\_Air\\_Emissions\\_Reporting\\_Requirements](http://www.extension.org/pages/Large_Animal_Feeding_Operations_May_Need_to_Meet_Air_Emissions_Reporting_Requirements)

Essentially all livestock farms were exempted from the **federal** reporting of emissions under CERCLA, but the largest CAFOs will **NEED** to report estimated emissions to **regional or local** authorities under EPCRA. See the website for definitions of "large" CAFOs and more detail. The Decision Tree link is particularly useful in helping producers know if they need to submit a report.

In summary, a dairy operation with 700 or more dairy cows or 1,000 or more young-stock/replacements needs to report under EPCRA. Contacts are:

State Emergency Response Committee(SERC):  
PA Emergency Management Agency (PEMA)  
2605 Interstate Dr., Harrisburg PA 17110-9364  
Executive office: 717-651-2007  
Eastern Regional Office: 610-562-3003  
Central Regional Office: 717-651-7060  
Western Regional Office: 724-357-2990

Local Emergency Planning Committee:

Use the following website to enter the state and zip code to find the local authority to contact.  
<http://yosemite.epa.gov/oswer/LEPCDb.nsf/SearchForm?OpenForm>

A sample script to use when calling contacts:

"My name is {your name} and I am calling on behalf of {name of your operation}. This {beef/swine/dairy/poultry} operation may generate routine continuous air emission of ammonia in excess of the reportable quantity of 100 pounds per 24 hours. This notification fulfills my requirement to report releases pursuant to CERCLA section 103 or EPCRA section 304. Prior to today I had presumed my livestock operation to be exempt from this reporting requirement and am reporting out of a precaution to ensure that I am in compliance with federal laws. I will be filing a written report of this release with 30 days."

It is recommended that you document the phone call: person that you talked to, date, and time. You need to follow up with the reporting 30 days later. That is where the first web address listed above can be helpful. It has all of the tools and information for reporting.

The nationwide listing is on the EPA website:  
<http://www.epa.gov/pmdesignations/2006standards/regs.htm#3>

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PENNSSTATE



# Counties in 25 States Fail Fine Particle Standards

*Bureau of National Affairs State Environment Daily* ( Dec. 23, 2008)  
 — The Environmental Protection Agency on Dec. 22 designated all or portions of 211 counties in 25 states as failing to attain the air quality standard for fine particulate matter, two fewer than it had recommended for designation in August.

Working with state and tribal authorities, EPA recommended designating 169 counties and portions of 44 others for nonattainment of the 24-hour air quality standard for particles smaller than 2.5 microns in diameter (PM-2.5) in August.

“These designations are an important step in our steady march toward cleaner air,” EPA Administrator Stephen L. Johnson said in a statement. “We will continue working with our state and tribal partners to meet these air quality standards.”

States with the most counties recommended for nonattainment status were California, Illinois, Indiana, Michigan, New York, New Jersey, Ohio, **Pennsylvania**, and West Virginia, according to EPA data.

Exposure to fine particles has been linked to premature death in people with heart and lung disease as well as nonfatal heart attacks, increased hospital admissions, and other respiratory and cardiovascular diseases, according to EPA.

Areas designated as not in attainment may need to adopt stricter controls on industrial facilities or measures to ensure that new highway projects do not interfere with air quality compliance. In addition, areas may need to implement local controls to contain open burning, limit emissions from industrial facilities, or reduce emissions from poorly maintained vehicles, according to EPA.

EPA set a new ambient air quality standard in September 2006 that lowered the standard for fine particles from 65 micrograms per cubic meter (µg/m<sup>3</sup>) to 35 microgram of air averaged over 24 hours (40 C.F.R. Part 50). The reduction was less than that

## PA Counties in Non-Attainment Based on EPA Report

Pennsylvania	Allentown, PA	Lehigh Northampton
	Harrisburg-Lebanon-Carlisle, PA	Cumberland Dauphin Lebanon
	Johnstown, PA	Cambria Indiana (p)
	Lancaster, PA	Lancaster
	Liberty-Clairton, PA	Allegheny (p)
	Philadelphia-Wilmington, PA-NJ-DE	Bucks Chester Delaware Montgomery Philadelphia
	Pittsburgh-Beaver Valley, PA	Allegheny (p) Armstrong (p) Beaver Butler
		Lawrence (p) Washington Westmoreland
	Reading, PA	Berks
	York, PA	York

**Key:**  
(p) = partial

sought by the Clean Air Scientific Advisory Committee—EPA’s scientific advisers on air pollution—and the American Lung Association.

*Written by Andrew Childers*

Additional information about the fine particulate matter nonattainment designation process is available at <http://www.epa.gov/pmdesignations/2006standards/index.htm>.

Welcome to this issue of *Dairy Feed Management*, a monthly publication featuring news of interest to certified feed management planners. For more about feed management issues, visit: <http://dairyalliance.psu.edu/resources/feed-management-planners/>

## IOFC will be focus of webinar series offered in March

“Managing Feed Costs on Your Dairy,” a two-part, free webinar series will be presented by Penn State Cooperative Extension in partnership with Dairy Alliance. The focus of the programs will be how to manage risk using Income Over Feed Costs as a tool to make smart decisions and how to implement feeding strategies to help control costs. The series is designed for dairy producers, their managers, nutritionists, and advisers.

Part 1 of the series – Managing Risk During Difficult Times: Milk Futures, Feed Costs, and Nutritional Strategies – will be held March 17 from 10:30 a.m. to noon. Part 2 of the series is Using Income Over Feed Costs as a Tool to Control Costs. For participants’ convenience, this session will be repeated three times: March 20, 24, and 27, from 10:30 a.m. to noon each day. This program will provide an in-depth overview of how to calculate income over feed costs. Presenters will include Ken Bailey, ag economist with Penn State; Tim Beck, Penn State extension educator; Keith Dickinson, Penn State extension educator; Gabriella Varga, professor of Animal Science, Penn State; Virginia Ishler, nutrient management specialist with Dairy Alliance; and Erica Cowan, program specialist with Dairy Alliance.

For more information, visit <http://dairyalliance.psu.edu/education/managing-feed-costs>

# Phosphorus Can Cause Water Quality Problems

*ScienceDaily* (Feb. 6, 2009) — Phosphorus is one of the key nutrients that can cause algal blooms and related water quality problems in lakes, rivers, and estuaries worldwide. Phosphorus entering waters originates from a variety of sources.

Agricultural land receiving long term applications of organic by-products such as animal manure is one of the major contributors. Such soils often become enriched with P, leading to elevated P loss through erosion and runoff. Information on the chemical characteristics of P in these soils is essential to improving our understanding of how P behaves in soils and how it is transported in runoff to devise better management practices that protect water quality.

A group of scientists in the USA and Australia have identified the chemical forms of P, using <sup>31</sup>P nuclear magnetic resonance (NMR) spectroscopy, in soils receiving organic by-products for at least eight years (treated) as compared with soils not receiving P application (untreated).

Regardless of the type of organic materials applied (dairy, swine, poultry, or spent mushroom compost), orthophosphate (inorganic P) was the single dominant P form, more so in treated soils (79-93% of total P) than in untreated soils (33-71%). Orthophosphate was also the only P form that differed dramatically between paired soils, three to five times greater in treated than untreated soils. Other P forms included condensed inorganic P and various organically bound P groups; however, their amounts were relatively small and differences between each paired soils were insignificant.

Surprisingly, the study revealed no evidence of phytate-P accumulation in any of the soils receiving organic wastes. Phytate is an organic storage form of P that is known to be present in animal manures, in particularly large proportion (up to 80% of total P) in poultry manure. Phytate-P is generally considered to be recalcitrant in the agroecosystem because of its chemical structure. However, the lack of phytate-P accumulation in several soils receiving poultry manure in this study indicates that manure-derived phytate-P may not be biologically and environmentally benign. Zhengxia Dou, the lead author, stated “in terms of potential P loss in the long run, organic materials containing large

amounts of phytate-P such as poultry manure may not differ from other material containing mainly inorganic P”.

Andrew Sharpley, a collaborating scientist, further explained “when the soils’ P sorption capacity was nearly saturated after years of manure application, phytate or other organic P forms could be exposed to breakdown and potential loss”. Therefore, it is important to strive towards balancing P inputs with outputs and to prevent P from building up in soils to which manure is applied.

## Journal reference:

Dou et al. Phosphorus Speciation and Sorption-Desorption Characteristics in Heavily Manured Soils. *Soil Science Society of America Journal*, 2009; 73 (1): 93 DOI: [10.2136/sssaj2007.0416](https://doi.org/10.2136/sssaj2007.0416)  
Adapted from materials provided by [Soil Science Society of America](http://www.soilsociety.org).

## New research on P to Ca ratio

Virginia Tech researchers have found that dietary phosphorus requirements are independent of calcium requirements. In other words, as long as the diet meets the individual requirements for each mineral, you don't have to worry about matching up phosphorus and calcium in a particular ratio.

To read their paper in the January 2009 edition of the *Journal of Dairy Science*, visit this link: [http://www.dairyherd.com/NEN/calcium\\_phosphorus.pdf](http://www.dairyherd.com/NEN/calcium_phosphorus.pdf)

In a follow-up e-mail exchange with the editors of *Nutritionist e-Network*, lead researcher Katharine Knowlton said there's a substantial body of work (beyond the Virginia Tech paper in *JDS*) that documents this.

One experiment showed no ill effects in varying the calcium-to-phosphorus ratio all the way from 1:1 to 7:1, she said. And, being free of the ratio can help to avoid the over-feeding of phosphorus, which means less excretion of phosphorus into the environment. Nutritionists don't have to worry about adding extra phosphorus to balance high-calcium ingredients — they can absolutely get out of that practice, Knowlton says. In monogastric animals, the calcium-to-phosphorus ratio seems to be important, but in ruminants, it isn't, she adds.

### This publication available in alternative media on request.

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