
University of Pennsylvania
Institute for Environmental Studies

presents

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What's Going on Down on The Farm to Protect The Bay?

The Chesapeake Bay is the largest estuary in the US and has been a major driver of environmental focus for agriculture in Pennsylvania. Agriculture contributes significant loadings of N, P and sediment to the Bay. The focus of the Chesapeake Bay program since 1985 has been to reduce these loadings. Manure containment was viewed as an early solution, but containment of animal waste for more appropriate timing of field application only reduced animal agriculture loadings by 15%, whereas the total reduction needed was 40% to 50%. No till farming practices and riparian buffer strips have significantly improved sediment run-off. However, P and N loadings continue challenge efforts to reduce Bay nutrients. Pennsylvania dairy farms must reduce non-point source losses of N by 17 million kg (37 million pounds) and of P by 0.6 million kg (1.3 million pounds) annually. This translates to a reduction of N excretion by 89 g/d and P by 4 g/d for each dairy cow in the Chesapeake Bay water shed.

Attention has shifted from manure containment to controlling feed inputs to reduce manure nutrients. This concept has been termed precision feeding. The Center for Animal Health and Productivity (CAHP) was an early proponent of this approach to nutrient control. It is attractive in part because it offers a method to reduce urinary N, which is the most difficult nutrient to control, as a majority of urinary N volatilizes from animal housing systems and contributes to atmospheric pollution and eventual deposition into the Bay. The CAHP has developed ration formulation software, CPMDAIRY, in collaboration with Cornell University and the Miner Institute, which uses mechanistic descriptions of rumen metabolism to minimize N wastage in feed rations for dairy cows. Ration formulation establishes the efficiency of nutrient flow through the farm system and defines the profile of forages which should be grown to optimize nutrient cycling. Integrated management practices within a farm system can amplify the benefits of ration formulation on farm nutrient flows and balances and reduce nutrient losses.

Date: October 21, 2009

Time: NOON - 1:30 pm

Place: Carolyn Hoff Lynch Auditorium

On the Penn campus: Chemistry Building

34 & Spruce Sts. (enter on 34 St)

NO REGISTRATION REQUIRED

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NO FOOD OR DRINK PERMITTED IN THE AUDITORIUM
