Integrated Nutrient Management Program Work Group  
MINUTES April 27, 2004

Attending:  Paul Cerosaletti, Dale Dewing, April Lucas, Quirine Ketterings, Karl Czymmek,  
Caroline Rasmussen, Greg Albrecht, Shawn Bossard, Mary Jane Porter, Jason Kahabka, Danny  
Fox, Peter Wright, Tibor Horvath, Keith Porter, Larry Geohring, Brian Tolson, Liz Brock, Brian  
Aldrich, Shree Giri, Ed Staehr, Tom Tylutki, Bill Elder, Caroline Rasmussen.

Precision Feed Management and its Role in Watershed Protection  
Paul Cerosaletti, Dale Dewing and April Lucas, CCE Delaware County  

On-going research and extension work in Cannonsville Watershed geared on lowering non-  
point source pollution from agriculture.

- Watershed is defined by EPA as “phosphorus impaired”. Total Maximum Daily Loads  
  (TMDLs) for phosphorus (P) restricts country development.
- 70% of P load to reservoir (as modeled) is from agriculture. Tracing P load from  
  reservoir to tributaries to fields to cows to feed coming in farm gate. Net nutrient  
  accumulation is increasing. Inputs to basin 171,300 to 333,300 kg/year (note large range)  
  vs outputs from basin of 65,000 kg/year.
- Working to have a performance based program. Need to be able to measure impact.  
  Performance based approach requires farm performance measures. What are they going  
  to be ?
- Engaging feed industry to work collaboratively to reduce loading. Dead-end P cycle  
  from P rock in Florida to grain in the mid-west to manure in NY.
- Paul, Dale and April have been holding workshops for producers to measure and control  
  P accumulation on individual dairy farms.
  - Data from 55 farms collected to-date.
  - Looking at P accumulation on farm as lb/acre/year instead of % of imports was  
    helpful in getting producers to recognize the magnitude of P remaining on farm.
  - Most of the P imported as feed. About 80% of the P going off farm as milk.  
    However, farms that made a lot of milk (as measured by milk/acre) also had a  
    higher P imbalance.

Addressing Mass Nutrient Imbalance through Feed Management:

- Cannonsville Reservoir has total annual P load of 50,000 kg. Approximately 7,000-8,000  
  mature cows in basin. Precision feeding of cooperating herds was able to achieve  
  reduction in manure P of 9 kg/cow/year. If this was expanded to all 7,000 cows in  
  watershed, would have P load reduction of 63,000 kg/yr (more than 50,000 kg/year  
  annual load). So what’s stopping us from achieving this reduction ?
- It is a dynamic process, not a one time exercise. Need to work with producer and feed  
  company to affect long term change. Feeding is closely tied to profitability. For the  
  producer to make changes, practices must not have negative impact on profitability.  
  Need to recycle nutrients through homegrown feeds.

Successful Feed Nutrient Management Program must:

- Be repeatable from farm to farm.
• Be structured to work with farm over time to implement incremental change.
• Work within the current support infrastructure of the farm (with crop advisor and feed nutritionist).
• Have a standard of identity.
• Have institutional standing as a BMP for nutrient management.

Who is going to do this?
• Partnership of Extension, NRCS/SWCD professionals have perspective, knowledge water quality issues. Must work with feed & fertilizer companies, nutritionist, crop advisor and farmer. In the end, someone must:
  o Develop and facilitate the program,
  o Count the beans (changes in nutrient loading) and
  o connect with the local community about collective effort. Delaware Co. has had this infrastructure in place with Extension / DCAP.

Precision Feeding = “site specific diet formulation and delivery”
• Improve homegrown forage quantity and quality.
• Increase utilization of homegrown feeds.
• Reduce nutrient losses though better forage management.
• Integrate Planning (facilitate project, document impacts), Research (field research, model development), Education (producers and feed industry).

Objectives
• Develop repeatable process, test nutrient accumulation as performance measure.
• How low can we get nutrient balance via feed management improvements?
• Looking at economic impacts – Mary Anne Ceralli.

NRCS Feed Management 592 Standard – Bill Elder, NYS NRCS

592 is a National standard being “tweaked” by NYS for implementation.
• First NYS draft (September 2003) has been reviewed by Danny Fox and Larry Chase in Cornell Dept. Animal Science.
• The primary questions are:
  o Is there a valid feeding performance measure?
  o How will it be measured?
  o Who will provide service?
  o What amount of reduction in nutrient loading can be expected?
• There should be a 592 Standard in place by October 1, 2005. EQIP funds will be available to help producers implement standard.

Danny Fox comments on 592 Standard
• Danny is advocating that NRCS take the same approach with 592 as they have with 590 – recommending that the standard be based on local land grant university recommendations.
• Shift away from using manure analysis as index of feeding program and toward precision feeding.
Discussion

- Should requirements be varied by watershed or standard nutrient reductions across the board? We don’t know what threshold should be. If mandate was to decrease ration P by x%, that would, at least, get people to figure out what their ration P concentration is.
- Who has mandate and how will it be enforced? Who is going to do operation and maintenance checking?
  - This is not concrete and engineering that NRCS is accustomed to following. Also not a 1 time fix – rations may be rebalanced monthly.
  - NRCS is looking at subsidizing payments to consultants.
  - With a stroke of pen could make all CAFOs do it. But is it consistent with other standards?
  - Also able to use indirect “carrot” – if you want CPR $, must follow NRCS standards (including feed standard).
  - There is flexibility on how the standard will be structured – can make it more restrictive over time.
- Standard as outlined in NY Field Office Technical Guide can be a reference for watershed and community groups.
- In many cases, with this standard, the producers that are thought of as most progressive may have the worst nutrient mass balances.
- P Index – buying time, not a long term solution.
- We don’t have a quantitative assessment of most BMPs including this one.
- Possible economic benefit – nutritionist becomes part of CNMP team. Could be a win-win partnership as forage and animal management goals are realized.
- Feed companies software needs to come close to CNCPs.

Next meetings:
May 4, 12:00-2:00
Topic: The Field needs to know: how to attempt to balance risk assessment tensions: managing for N vs. P, Air vs. Water, field edge vs. watershed.
Speakers: Karl Czymmek, Harold VanEs, Jeff Melkonian
Room: 300 Rice Hall, Cornell Campus. Lunch provided at 12:00.

May 13, Seminar 8:15-9:45 a.m.
  Workshop 10:00 a.m. – 4:00 p.m. (registration required)
Topic: Seminar & Hands-on Workshop: Water Erosion Prediction Project and it’s GIS-Based Geowep Interface.
Speaker: Chris S. Renschler, University at Buffalo (SUNY)
Room: 300 Rice Hall, Cornell Campus.

May 26, 12:00 – 1:30
Topic: Modeling nitrogen movement in groundwater.
Speaker: Alan Rabideau, SUNY Buffalo
Room: to be announced.