

MINUTES

SERA-IEG-17 Annual Meeting
“Minimizing Agricultural Phosphorus Runoff Losses for
Protection of the Water Resource”
(aka “Minimizing Agricultural Phosphorus Losses”)
August 2 - 4, 1998
Ft Worth, Texas USA

Sunday, August 2, 1998

Field trip: Erath County Dairy Producing Region - Jerry Lemunyon, Coordinator & host, with ample and able support by Larry Hauck, Ann McFarland and numerous others.

Monday, August 3, 1998

8:05 am. Frank Coale, 1999-98 Chairman, brought the 1998 annual meeting to order. Over 70 people were in attendance. Participants represented university research and extension, ARS, NRCS, EPA, state regulatory agencies, water management districts and private industry.

An “active” membership/ mailing list was circulated for updates. Since many did not check off their names, a few participants may not appear on the attached list attached.

Agenda additions/corrections/modifications were requested by the Chair.

ADMINISTRATIVE COMMENTS

Michael Quart – Extension Administrative Advisor

Commented on the need to include other disciplines in the communication loop. In particular the Administrative leaders see a need to include participants from Animal Science and SERA-6 (Southern Regional workgroup on Soil Testing and Plant Analysis). Discussion ensued indicating that several SERA-17 participants are also members of SERA-6 and that the activities of SERA-17 had been reported on at their Virginia meetings. Steven Hodges, chair-elect, and a participant in both groups, agreed to strengthen communications with John Kovar (current SERA-6 Chair and member of SERA-17) and Bill Thom (incoming chair of SERA-6) and participate in the 1999 meeting of SERA-6.

Allan Jones – Research Administrative Advisor

Encouraging the weather committee to improve. (Daily temperatures exceeded 100 degrees for the duration of the meeting).

CSREES

Maury Horton

Maury provided a report on events in Washington. The Fund for Rural America that many of us spent a great deal of time on, was pronounced dead. Ongoing funding for Centers was uncertain at this point. USDA Budget: no 1999 budget until well after Oct. 1

Focus appears to be on :

Soil Quality

Precision Ag – included as part of farm bill, looks likely to get funding

Water Quality – likely to get funding, especially as related to Harmful Algae Blooms

Positions Available: Water Quality and Soils positions at Washington

EPA UPDATE

Roberta Parry

EPA has initiated Animal Feeding Operation strategy.

Joint strategy with USDA – on the web probably by mid-August. Should involve comprehensive nutrient management planning for AFOs/CAFOs. NRCS standards will be used as a starting point, EPA may feel they don't go far enough and may be more stringent. EPA is under court order to rewrite effluent guidelines. Swine probably out in 1999, effective 2001. Beef and poultry to follow. Perception is that CAFOs are a point source along with pipes. In New York, a case found application fields may also fall within the parameters of a point-source.

In the regulatory agenda, Harkins has proposed USDA take the lead and work with EPA to work toward regulatory solution, but would like to lower to less than 1000 animal units so that more operations will be affected. Miller – maintains EPA should head the charge.

Water Quality Criteria - "National Strategy for the Development of Regional Nutrient Criteria - June 1998; strategy 2000, effective 2003 from state. Not a national number, regional criteria. By water body. Request from Roberta. (EPA 822-R-98-002) This one is critical for TMDL. Roberta encouraged members to be involved, as the need for sound science is critical.

P Workshop 98

Tom Sims

Tom reported on the conference in Antrim, Northern Ireland held in June, 1998. The focus was on Practical and innovative measures. Sponsored by OECD.

Major Topics Areas

Animal Nutrition

Nutrient Management Practices

Soil Testing

P Control Measures

Risk Assessment

Integration of GIS with P management

Tom reported P Threshold is 15 ppm in Northern Ireland.

Very good interaction between multiple disciplines.

OECD Grants available, but limited

NRCS P Index Projects and Draft P-based Plans Policy

Chuck Lander

- P Index – not used much within NRCS; growth of P as issue, has elevated interest, but not implementation
- Pilot projects: 12 States. FL, NC, OR, UT, WI, IN, TX, AR, NE, CO, PA?, DE or MD?
 - Fiscal 1999 working revisions
- Core Group: support group
- Long term goal – getting these tools to the end-user
 - Problems: work loads; privacy or individual case files
 - All permits are publicly available
- State Involvement: 2-3 meetings or more

NRCS Policy Revision

Work started 14 months ago.

NRCS Nutrient team – what are the elements of a nutrient plan; record keeping etc.

12 revisions – last in April 22 Fed. Register

General – Things that need to be done

Manure
Policy

Standards – required measures

National Agronomy Manual

Recommended practices

Managing Nitrogen – N shall not exceed recommended rates. Rates are determined by soil tests, plant analysis or other appropriate tests.

Soil Test

No soil test recommendation for legumes – thus no recommendation? Modify to allow removal

Nutrient Management and Manure disposal standard - P MANAGEMENT

In general the policy will require that the actual rate so P application shall not exceed the recommended rates.

When PLL (P loading levels) are not available, the following guidance

Soil Test P P Application Constraint

Low	N based
Medium	N based
High	1.5 x crop removal
Very high	Crop Removal
Excessive	No Application

IF PLL for a soil is known

Status P Application Constraint

<3/4 PLL	N Based
<3/4 PLL to 1.5	Crop Removal
1.5 to 2	½ Crop Removal
>2	no app

Essence, if little or no potential for water quality impairment – N based plans

If P index is low, use N based plans.

Chuck requested that the group address the following:

1. What should be the minimum acceptable provision for P Management for NMP?
2. What should triggers for mandatory P based plans?
3. Should provisions be voluntary mandatory?
4. What other unidentified factors should be considered? – Others than Identified
5. What is the protocol for determining threshold levels?

Referred to Task Groups

National Benchmark Soil P Soil Study

Terry Sobecki

Review of role of soil information needs for P assessment Applied P

- Accumulation of P
- Leakage
- People and P perturbed
- Soil Scientist asked to save the day

Criteria

- Select Sites
- Soil Characterization
- Utilize and Integrate into national database

Cooperative Efforts

- Establish runoff plots
- Rainfall simulations
- Method R&D
- Assist in data relationships for overall projects

Soil type or soil series – constrained by MLRA

- Prominent or important acres
- Significant or critical portion of watershed
- Represent a range of nutrient cycling, soil fertility
- Subtypes of land cover usage

Preference to :

- Soils with high P
- Soils with history of agronomic research

Objectives:

Pilot study for field and lab methods

Relate Soil P and runoff (database)

Relate soil P and P runoff with soil properties (pedotransfer)

Money requested for 1999/2000 (\$12 M)

Other Needs from the Group:

- Design modifications?
- Soil Test methods to include

A National P Agenda for P land Application

John Lory

Addressed the need for a mechanism for the SERA17 to respond as a scientific body and clearinghouse to various policy and regulatory issues. Examples: NRCS Policy, CAFO strategy, Critical levels.

Are we to be seen as a group of information providers to other groups on this issue?

How will we respond to requests for information?

Can “we” provide information which we fully recognize may end up as regulation, standards or policy objectives?

After considerable discussion, about two-thirds of the group agreed that we should try to respond when asked. A request should be sent to the executive committee, who will select an active member to facilitate the response. Notification of the request should be sent to the active participants, and a subcommittee selected to draft a response for review by the entire active membership.

John Lory agreed to facilitate a response to the NRCS policy revision.

Phil Moore asked that the committee review the Region 6 CAFO proposal. Sam Feagley agreed to facilitate the response.

Ron Jones

Ron discussed the Role of Science and Economics in Policy Development

(Don't go to the bank and ask to negotiate the balance –reconcile based on facts)

- Point source models applied to the CAFO situation – not extremely applicable

How do we measure success?

Many “solutions”

- TMDL
- Water Quality Beneficial Uses

Rights to pollute

- Measurable successes
- Enforcement

P Partitioning in the Cow

Mark Powell

If forage and grain is homegrown and only starter fertilizer use for corn and only protein /mineral supplement for cattle are imported, then in P balance, otherwise P will accumulate.

Mark described their project on a systems approach to improved P management on dairy farms.

The study includes the effects of P management in feed on dairy cow performance, and carries through with effects on manure, manure processing and treatment. In the land application process, effects of soil management on BAP runoff and P sorption will be studied with different manure fractions. Mark suggested that reduction in potentially transportable P may be reduced by as much as 60%

He described several techniques of achieving reductions. Then mentioned studies with N15 to relate soil P “availability” parameters and rates of manure N mineralization.

Manure Inorganic P importance and determination

Miguel Cabrera

In a recent study, Miguel found freshly applied manure P addition was a much more important consideration than was residual soil P. Litter lying on the soil surface appears much more interactive with runoff waters. A discussion of his data ensued along with a discussion of a need to standardize methods for measuring SRP.

Comments: Soil test P relates with SRP very well at lower rates in unmanured pastures, but are fairly high wherever litter applied to surface. Need to correlate different methods. It may take more than 1 ½ years to deplete high availability of P from surface application of litter.

DELIVERABLES

Tommy Daniels

Soil P Levels: Concern and recommendations is available and on the website. This represented a team approach of many different agencies in Arkansas.

Available on the web site at:

<http://ces.soil.ncsu.edu/sera17/publicat.htm>

Gary Pryzenski – P Methods Bulletin; Draft (about ½ papers in)

Soil and Sediment Analysis

Waste Section

Water and Runoff

Discussion on Added Chapters – P fractionation

P sediment

Other routine procedures

National Soil Test P Extraction??

Wes Jarrel

Wes reported on progress in describing sensitivity of receiving waters and classification of watersheds for P sensitivity. In particular the group has completed a draft of a primer on eutrophication, and presented an overview of the contents.

Primer on eutrophication
Factors affecting response of aquatic systems to changes in N and P
Evaluation procedures
 Classification keys
System descriptions
Next Steps
 Models
 Receiving waters (Basinwide)

Announcements

Chuck Lander announced the upcoming Nutrient Management Conference to held in Denver. Many members had receive fliers.

DAY 2

BUSINESS

1999 Chair: Steven Hodges, NC State
Secretary and Chair-elect: Brad Joern, Purdue
Meeting location 1999 – Quebec City; Canada
Meeting Possibilities in 2000:
 NC;
 Madison, WI;
 - Mark Powell and Larry Bundy made a preliminary offer to host the meeting.
 PA

Workgroup Break Out

As increasing size has become evident, members suggested that each Task Group designate a Chair and Chair Elect

WorkGroup Reports

Soil Testing – Gary Pierzynski

Chair- Gary Pierzynski, Kansa State
Chair Elect - John Kovar, Lousiana State

Soil testing document completed and mounted on the web.
Methods bulletin – draft, missing info chapters lined up; Thanh Dao will do on P column studies
Establishing threshold levels for P – what states have done to set thresholds,
Tom will solicit

Transport Workgroup – Jerry Lemunyon

Past Chair- Andrew Sharpley, ARS
Chair - Bill Gburek, ARS
Chair Elect - Jerry Lemunyon, NRCS

Draft of Report the the Transport “ Modifying P index to account for transport pathways “ by Gburek, Sharpley and Folmar was given to interested members.

Limitations of current index: Does not represent whether surface runoff occurs or if it actually reaches the stream channel

Highly source dependent

Modification:

- Separate evaluation of P source and transport characterisites and combine in a multiplicative manner ($X \neq 0$) instead of additive
- Incorporate hydrologic return period to quantify the risk of runoff impacting the stream

Problems: GIS-based very much less accessible to the average users, and may be so complicated that it becomes too difficult for the average users. Vertical transport should be included, in very flat soils, very sandy.

Up front – balance is desirable; some problems with multiplicative factor, since it could negate extremely high soil test P; yet in areas where little transport, soil test level may be somewhat less important. Local modification is critical (Trying to deal with this during pilot project)

BMP Workgroup

Chair - Chuck Lander, NRCS
Chair Elect - John Lory, Missouri

Current Goal: What is available in the states already? From each of the states, assigned a person from each region to accumulate list of currently available info.

Need to Sort BMPs by Category, Key back to P Index at the site
References to be compiled by Jan 15.

Connection with P Index/BMPs to support changing practices as P-Index starts getting used.
Crops database – primarily NRC; possibly could be linked

AFCO – fertilizer analysis standards

Deliverable Products : still interested in developing factsheets for web distribution
Need Reviews

Aquatic Workgroup

Chair - Wes Jarrell Oregon Grad. Institute of Science and Technology
Chair Elect: Alan Steinman (South Florida Water Management District)

Pub discussed yesterday – Extended discussion
(note: Available on website at <http://ces.soil.ncsu.edu/sera17/test/>)

Asked members to support a possible symposium – Joint with S11, S4, A8

Other Discussion

P Mineralization

Standards may require an estimate of site life for N-based plans. We need a much better understanding of P mineralization, accumulation and interaction with soil properties. While some indications are that manure P may be less available, others supported levels of 80 to 100% of total manure P available to plants in year of application. Than Dao presented data indicating P release rates are high rates for the first 20 days (compost similar, but slightly lower).

John Lory: We need to incorporate flexibility in planning where ever possible. For example, should we be able to apply 3 years worth (of P, <= 1yr of N) in one year for a rotation crop (Manure rotation). Is there any advantage of application to three fields in one year vs. 1 at higher rates?

Heavy Metals in Fertilizer: Bob Stevens mentioned that the fertilizer and heavy metal issue continues to rage and grow. The train is out of the station and may be rolling in other directions.

After thanks to Jerry Lemunyon and local arrangement participants for their excellent preparation Chair Frank Coale adjourned the meeting to allow additional time for workgroup meetings and early departures. On behalf of the entire membership, Tommy Daniels expressed thanks to Frank for his effort the past 2 years.

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1998
SERA 17
Fort Worth, Texas**

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