

Minutes

Southern Extension and Research Activity Information Exchange Group 6 (SERA-IEG-6) Soil Testing and Plant Analysis Annual Meeting

June 8-10, 1997

Ione E. Burden Conference Center
Louisiana State University Agricultural Center
Baton Rouge, LA

Monday, June 8, 1997

8:00 a.m.

The meeting was called to order by the Chair of SERA-6, John Kovar.

Dr. William B. Richardson, Chancellor, LSU Agricultural Center welcomed the group to the Louisiana State University Agricultural Center. He commented that this was their 25th anniversary as administrative unit. This has allowed them to chart their own mission. He commented that the governor is committed to education and they're looking for additional funding this year.

Dr. R. Larry Rogers, Vice Chancellor and Director, Louisiana Agricultural Experiment Station welcomed the group to Baton Rouge. He commented on the uniqueness of the meeting site regarding horticulture research. He stated the site was spread over about 450 acres of land valued in the range of 50 - 100 million dollars. He stated that nutrient management and precision farming were fundamental parts of successful crop production, and the expertise of this group is needed in this area.

Dr. Jack L. Bagent, Vice Chancellor and Director, Louisiana Cooperative Extension Service, welcomed the group to Louisiana. He stated farm management came down to two things; production and marketing. Soil is where it all begins. He expressed an appreciation for what this group does.

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In his opening remarks, John Kovar thanked our sponsors, Doug Keene of Spectro Analytical and Dr. Jim Woodruff of U.S. Borax. He introduced the guests and visitors, Dr. Paul Bell who is the Director of the Plant Analysis Laboratory, and Cliff Snyder.

Comments by Administrative Advisors

Dr. George Kriz, Administrative Advisor, NCSU, handed out responses to questions regarding electronic publications. The instructions for electronic publications are as follows:

1. Call up the SAAESD URL <http://www.msstate.edu/org/saaesd> (<http://www.msstate.edu/org/saaesd>)
2. Select "SAAESD Infobook"
3. Then, select "Publishing Guidelines"

He stated this group is becoming more important because more questions are being asked about Ag production as we move into precision agriculture. It's important to continue working together to make sure recommendations are uniform state-to-state. This group provides the basis for what private labs do.

Dr. Maurice Horton, USDA/CSREES, spoke to the group about happenings at the Federal level. He reported that the Natural Resources and Environmental Group has moved to the 8th floor of the Aerospace Center. He stated there has been a lot of turnover in personnel, and the agency has lost a lot of key individuals. Some of the hot topics at the Federal level are:

1. Budget preparation for 1999 and Rural Initiatives.
2. Soil Quality.
3. Phosphorus. Finding areas oversubscribed in phosphorus.
4. Precision Agriculture. Having difficulty in elevating level of priority because previous administrators have left the impression precision ag is primarily for industry and the large farmer. Would like to see agency more involved.
5. Farm Bill. Some high priority items could show up in the next farm bill in the research and education portion of the Farm Bill.

Dr. Horton suggested one way to support the programs would be contacting the administrator of CSREES, the administrator of the REE mission, the under secretary, and the deputy under secretary for REE, Floyd Horn.

Dr. C. Wayne Jordan, Extension Administrative Advisor, Univ. of GA, stated the southern directors are supportive of the regional concept.

He recently attended a regional precision agriculture meeting in Tifton, GA, with about 400 others in attendance, mostly from

industry. Not many land grant university people were there - more people outside traditional agricultural fields. Discussions regarding technology - zone sampling. He suggested this group needs to become involved and see how we can be players.

Publication Status Reports

Ray Campbell reported on the Plant Analysis Bulletin. He has a working copy of the bulletin ready for review by the editorial committee. The publication contains information about 25 major crops with promises for four or five more. He requested information regarding more crops to add to the bulletin - namely several forage crops, some vegetables, tree crops, and some ornamentals. In addition, references are needed from the authors for each element. A meeting with the editorial committee is needed to work on condensing the bulletin and getting it ready for publication. It should be ready and on the web in about one month.

Ed Hanlon reported on the revision of Bulletin 190, Procedures Used by State Soil Testing Laboratories in the Southern Region of the United States. The bulletin can be accessed on the web as follows:

1. <http://www.1mok.ufl.edu> (<http://www.1mok.ufl.edu/>)
2. UF/IFAS Information Resources
3. Southern Region...190...
4. WORD97 version -
 - a. Turn TRACK feature ON.
 - b. Use COMMENTS feature as needed.
 - c. E-mail WORD file for incorporation to hanlon@gnv.ifas.ufl.edu (<mailto:hanlon@gnv.ifas.ufl.edu>)

Hugh Savoy reported on the Nitrogen Testing Fact Sheet. He stated he had enough information to get the fact sheet out. The fact sheet will contain information regarding what the states are doing and how in the area of nitrogen testing.

Committee Reports / Updates

Quality Assurance - John Kovar reported on behalf of Bill Baker a document on quality assurance is being developed. He will contact Bill for more information.

North American Proficiency Testing (NAPT) - John distributed minutes from the North

American Proficiency Testing Program (NAPT) Steering Committee meeting held April 10-11, 1997 in Eagan, Minnesota. About 25

people from labs, proficiency testing programs, and industries were in attendance. Information was obtained from existing programs regarding number of samples, cost, criteria used to evaluate labs, and statistics. The minutes contained a list of essential components for NAPT. The thrust of NAPT is to research the best systems being used and combine the various testing programs into one. The NAPT program is not being developed as a certification program. It would be a program with voluntary participation. The program would use published methods and procedures recommended by each of the regional work groups (NCR-13, SERA-6, NEC-67, and WCC-103). An administrator would be hired to operate the program. A document regarding the program is being drafted for review by the various groups. Comments regarding the draft document should be given to John. The steering committee will meet again in August.

Sample Exchange - Hamilton Bryant distributed sample exchange results from last year. No samples were distributed this year. Considering the emphasis placed on NAPT, John asked the question if this regional sample exchange had outlived its usefulness. It was agreed by the group that the participating labs have good analytical techniques. Therefore, focusing on recommendations would be more beneficial. The general consensus of the group was to put a hold on the regional exchange for next year.

Manure Testing Methods Manual - A letter regarding the manual was distributed to the group members prior to this meeting. John reported that the committee hasn't met formally, only by E-mail. The thrust of the committee is to develop a manure testing procedure manual. John requested information from each state regarding their methods for manure testing. The committee is planning on meeting in July.

State Reports

Virginia - Steve Donohue reported sample numbers are up 10% from last year. The price of the routine soil test has been increased from \$6.00 to \$7.00 per sample. Another lab technician has been hired after losing 2.25 people the year before. Beginning July 1, 1996, the lab began offering a faxing service for return of soil test reports. Several forms and Soil Test Notes have been revised. A new 4 sample self-mailer made by Bassett Printing Corp, Bassett, VA (Tim Rhyne 1-800-336-5102) is being used. A new ICP - Spectro, Model FTM-08 has been purchased and is being installed. An ICP survey was distributed which includes information from 22 labs.

Texas - Tony Provin reported that the lab has a new manager. They want to buy a new NIR for plant analysis. They are also looking at purchasing a new ICP and researching new extraction solutions. The sample numbers are about the same as last year.

South Carolina - Kathy Moore distributed information listing the lab's www page at <http://agweb.clemson.edu/agnews/agrvlb.htm> and Bob Lippert's page at <http://agweb.clemson.edu/agronomy/soilplant/bobweb.htm>. Last year the lab analyzed 35,600 soil samples, 2063 feed samples, 2639 plant samples, 291 water samples, and 344 manure samples. A new soil reporting system was installed last October with the reports being e-mailed to the counties and hard copies being sent directly to most clients. The organic matter method has been changed from Walkley-Black to Loss on Ignition (LOI). Rao S. Mylavarapu reported on the CCA & CEU training courses being offered. Research is being done to validate the P & K recommendations. Experiments are being done with vegetable production. Clemson is working with DHEC on ways to regulate by-products. Experiments are being done to study the long term effects of poultry litter application. Clemson's lime and fertilizer recommendation book has been revised and is awaiting publication.

Dr. James Woodruff (U.S. BORAX) distributed a paper entitled "Simple Spray Adds to Profits for Georgia Soybean Growers".

Tennessee - Gary Lessman reported on a vegetable initiative where vegetable responses to P, K, and N are being studied. They've been looking at surrounding state's recommendations.

Debbie Joines reported the soil lab analyzed 30,100 soil samples in 1996. The feed lab analyzed 719 - farmer, 492 - experiment station, and 150 media samples. The forage lab has undergone renovations and was open last Monday. The soil lab will be changing to a new computer system which will download information from the instruments and bar coded lab sheets.

Oklahoma - Hailin Zhang reported an \$8.00 to \$10.00 increase in the soil test, however there was still an increase in sample numbers. The lab analyzed several thousand water samples last year. They are looking into initiating a manure analysis program.

North Carolina - Ray Campbell distributed brochures describing the solution advisory and waste advisory services available. He reported the lab analyzed 14,000 plant, 5500 waste, and 3000 solution

samples last year. The lab completed automation of services last week. The goal was to enable the computer to take care of the recommendations for these services.

Ray Tucker reported the lab analyzed a record number of soil samples (>260,000) for the year. The increase has been attributed to the GPS system. They have encouraged precision sampling to be done during the non-busy season in the fall. He distributed a number of handouts including comparisons of extractable P and K by Mehlich-1 and Mehlich-3; P, K, Cu, and Zn levels from long-term poultry litter application; and sulfur determination using NH₄Cl and Mehlich-3.

Mississippi - Keith Crouse reported the lab analyzed 29,000 soil samples last year. There is a \$3.00 analysis charge for in-state soil samples. They are proposing to increase the charge to \$5.00 for out-of-state samples. In addition, they are proposing a \$7.00 charge for in-state tissue samples and \$12.00 for out-of-state tissue samples.

Larry Oldham pointed out two issues of the state: 1) Liming agents and 2) Precision farming.

Louisiana - John Kovar reported the lab analyzed 15,000 soil samples and 130 water samples last year. He discussed the ongoing research program concerning the soil test calibration correlation data. The lab is moving toward Mehlich-3. Phosphorus values in forest soils are being studied.

Kentucky - Bill Thom distributed a handout from his state. He reported the lab analyzed 45,480 soil, 186 water, and 72 animal waste samples in 1996. An increase in soil samples this year is attributed to burley tobacco. This is probably due to an increase in farmer quotas. Nearly all the water samples analyzed are for float-bed tobacco seedlings. Two ICP units are in place for analyzing soil, fertilizer and feed. A number of Environmental Quality Incentive Programs (EQUIP) are in place this year in Kentucky. The programs involve nutrient management and animal waste testing. The lab is reporting CEC and % base saturation on a trial basis. The reports are sent electronically to each County Extension Office. Some problems have occurred because of incomplete computer updates at the county offices. The Coordinator of UK Soil Testing Labs, Vern Case, will retire June 30, 1997.

Georgia - Wayne Jordan distributed two handouts: 1) A 1996 Soil Testing Survey and 2) a description of the lab which included total sample numbers for each section. The lab consists of three units;

Soil & Plant Analysis, Pesticide Residue, and Feed Nutrition. The total samples for 1996 were 92,250 soil, 4001 plant tissue plus 4000 cotton petiole, 2725 feed, 4681 water, and 11899 miscellaneous. There is a concern regarding the number of grid samples that may come in since farmer samples are free. A charge for grid samples is under consideration. The lab plans to purchase a third ICP. In addition, the lab is working on having a direct input of pH data. The soil test results are delivered to most of the county offices through the web.

Owen Plank reported they are in the process of adding new commercial turf recommendations. The plant analysis handbook is being updated. The UGFERTEX program which contains manure recommendations is available. A multi-state waste management in-service training for county agents was recently conducted. The web page is still available at

<http://hubcap.clemson.edu/~blpprt/manure.html>

(<http://hubcap.clemson.edu/~blpprt/manure.html>)

Glen Harris discussed his work with cotton, peanuts, poultry litter, and by products.

Florida - Ed Hanlon reported he will be changing jobs, and this will be his last meeting.

James Bartos reported the lab analyzed 113,808 soil samples (13,500 extension, 100,291 research - 86% prepared solutions). The fee for the standard test was increased from \$5.00 to \$7.00. The computer program is being replaced, and the reports will be made available through the web. The lab is looking at a second extractant for different soils (ammonium bicarbonate EDTA).

Gerry Kidder reported on his work regarding land application of non-hazardous waste.

Arkansas - Wayne Sabbe reported the department is looking for a new head. Arkansas now has an official soil which has unique properties to the state. The lab analyzed over 70,000 soil samples. The lab is going to try using loss on ignition instead of Walkley-Black for organic matter. In addition, the lab is looking to continue or drop NO₃-N and EC analyses on soil samples. Number increases from grid sampling are also a concern.

Nancy Wolf reported the lab analyzed 1300 forage, 6000 plant, 3000 soil (150 - metal requests), 1700 manure (550 - dry and 1200 - liquid). The lab offers a reduced cost if the samples submitted are prepared for analysis.

Alabama - Charles Mitchell reported there is no longer an Extension Service. It is now an Extension System. A \$5,000,000 pledge has been made toward a new lab.

Hamilton Bryant reported the lab has lost 2 positions. There is a decreasing number of soil samples, but an increasing number in other type samples. Last year the lab analyzed 35,000 samples.

Round Table Discussions

Problems with Waste-Amended Soils - Ray Tucker gave a presentation regarding copper and zinc accumulation from the application of poultry and swine wastes. The hog population has increased in NC to about 8,000,000. Copper and zinc are being over-added to hog feed for medicinal purposes. Ninety percent of these metals from the feed goes into waste. Sites are being tested for toxicity levels. Two recommendations were made: 1) manage liming rates and 2) encourage feed companies to add only what is needed to feeds.

Discussion: Other concerns are nitrogen loading rates and water born diseases. We may be governed in the future by biological activity in addition to chemical properties.

A tour of the Louisiana State University Agricultural Center laboratory was conducted by Rodney Henderson (Soil Testing) and Paul Bell (Plant Analysis).

Tuesday, June 10, 1997

8:00 a.m.

Round Table Discussions (cont.)

Role of SERA-6 Laboratories in Precision Agriculture - Paul Bell discussed the availability of cotton yield monitors. Agronomists need to be involved with interpretations.

Owen Plank stated several components need to be considered in addition to soil sampling such as physical and environmental problems. All problems are not related to soil fertility. All input should be considered. A major concern of the labs is getting overrun with samples.

Report from Soil and Plant Analysis Council - Owen Plank reported the last soil, plant, water, and animal waste survey was done in 1991. Forms will be mailed out for the 1992 - 1996 survey. Some information requested has been changed. The water analysis has been dropped. The request for the number of research samples laboratories run has been dropped. The request for percent of

samples analyzed that receive recommendations has been added. The report is due out in August. In addition, The 5th International Symposium on Soil and Plant Analysis will be held August 3 - 7, 1997 in Minneapolis.

Report from NCR-13 Representative - Ron Gelderman (SD) - not present.

John Kovar reported the education committee is working on a revision of their methods manual. In addition, work is being done on a soil and plant analysis workshop which is tentatively planned to be presented in the fall of 1998. The extraction committee is working on the Mehlich-3 extract. The recommendation committee is working toward regionalization of recommendations. The waste committee is working on the manure manual. The field testing techniques group is researching remote soil tests to evaluate plant nutrient status. A chapter on QAQC will be included in the revised NCR methods manual. The organic matter committee is looking at the Loss on Ignition method to replace Walkley-Black for soils in the Mid-West. Regarding sampling, grid sizes and different tillage practices are being researched.

Round Table Discussions (cont.)

Nutrient Management for Cotton

Coastal Plain Soils - Glen Harris reported on the proposed SERA-6 bulletin regarding soil test recommendations for cotton on Coastal Plain soils. From Correspondence, Charles Mitchell outlined the objectives of this bulletin as follows: 1) To identify research-based soil test calibration and critical soil test values for pH, Mehlich-1 and Mehlich-3 extractable P, K, Ca, Mg, and selected micronutrients for cotton production on Coastal Plain soils, 2) to suggest a soil test rating for selected nutrients based on the soil test calibration, and 3) to make recommendations for lime, nitrogen, phosphate, potash, calcium, magnesium, and selected micronutrients based on the soil test calibration or on published research.

The chapters are as follows: 1) Characterization of Coastal Plain Soils, 2) Lime, Soil pH, Calcium and Magnesium, 3) Nitrogen, 4) Phosphorous, 5) Potassium, 6) Sulfur, 7) Micronutrients, 8) Petiole and Tissue Testing, 9) Poultry Litter.

Delta Soils - The tentative chapters are as follows: 1) Soil Sampling, 2) pH and Liming, 3) Nitrogen, 4) Phosphorus, 5) Potassium, 6) Secondary and Micronutrients, 7) Tissue Analysis, 8) Industrial and Agricultural By-Products.

Appropriate authors will be asked to write the chapters. It is proposed that first drafts of these bulletins will be prepared for the next SERA-6 meeting. The intended audience would be laboratories and specialists who make recommendations.

K management/KBC Regional Project - John Kovar reported on getting the final publication out for the regional K buffering capacity study. KBC data from research was requested and should be sent to John to include in the publication.

Direction of SERA-6

Committee vs. Task Force Structure - Wayne Sabbe stated a task force would give emphasis to projects with the end results being publications. Ray Campbell suggested having selected people give presentations and have the meeting state present some of the state's research. George Kriz suggested having optional tours at the beginning or end of the meeting. Suggested topics for next year are water quality and what's hot in Kentucky.

Mission Statement - At present, the group does not have a mission statement, but one will be developed based on the justification given in the SERA-6 Authorization document.

Final Business

Plans for 1998 Meeting - The meeting will be held in Lexington, Kentucky, June 7 - 9, 1998. Bill Thom will take care of local arrangements.

Closing Comments - The group thanked John Kovar for chairing the meeting, Eddie

Funderburg, Paul Bell, the cooks, the lab technicians, and the sponsors, James Woodruff - U.S. Borax and Doug Keene - Spectro.

The meeting was adjourned at 11:30 a.m.

Minutes prepared and submitted by Kathy Moore