SERA-IEG 6-IEG-6
Nutrient Analysis of Soils, Plants, Water, and Waste Materials
Southern Extension and Research Activity Information Exchange Group 6
Annual Meeting, June 21-23, 2009, Texas A&M, College Station TX

In Attendance:

1. Administrative:
--Rao Mylavarapu, Chair

--Frank Sikora, Vice-chair

--David Hardy, Secretary
--David Kissel, Administrative Advisor, Extension

--Others Group Participants: Charles Mitchell, Gobi Huluka, Steve Phillips, Cindy Herron, Morteza Mozaffari, Robert Miller, Leticia S. Sonon, Keith Crouse, Larry Oldham, Manjula V. Nathan, Debbie Joines, Hugh Savoy, Tony Provin, J. Leon Young, Kathy Moore, Hailin Zhang

2. Local host: Tony Provin

3. State Representatives: See Participants Listing

4. Sponsorship:
a. Spectro Analytical - Bob Dussich
b. Elementar - Scott Hughes & Nathan Wreyford

c. Lignin - Keith Hensley

d. Texas Scientific Products

June 22, 2009, Sunday

6:00PM

After registration, Tony Provin welcomed the group that enjoyed a light dinner.

7:30PM

The group was given an overview of instrumentation from Elementar represented by Scott Hughes.

Bob Dussich from Spectro Analytical followed with brief comments about ICP.

State reports were given as follows:

State Reports

Virginia- Steve Heckendorn (via email)

Virginia Tech Soil Testing Lab is now charging homeowners $10 (up from $7 as of July 1)) for a soil test.

Texas- Tony Provin

Laboratory relocation continues with current progress on the renovation of a 5500 sqft. structure on the edge of campus.

Field research- N and P correlation and calibration activities. Extensive N with depth and cotton variety has resulted in the development of new recommendations for shallow profile soil sampling, reduction of N fertilizer rates (to be released in fall) and banding of P fertilizer recommendations. Corn and sorghum N and P fertilization studies continue.

Winter legume studies were hampered by fall and winter drought; however observational data for these plots and the addition of a new forage researcher should enhance our future productivity. We have also engaged in a survey of historic native pasture/prairie soil sampling to aid in development of re-establishment recommendations. Additionally, soil profile/banding of nutrients in forage hay systems is being studied.

The laboratory was indirectly recognized, as it was a pivotal player in the research and Extension activities supporting the award presented to Texas AgriLife Extension Service (Texas Environmental Excellence Award for Agriculture). The award, Texas' highest award was recognized by the Legislature presented by the Governor for work done by Specialist and County Extension Faculty in reducing unneeded fertilizer applications in the Lower Texas Rio Grande Valley.

The laboratory added new instrumentation including: Spectro axial Arcos ICP; Brucker MiniSpin 10 NMR; Metrohm Ion Chromatography system. A new Unity NIR is currently being procured.

Samples analyzed during calendar year 2008: 28120 soil; 1257 water; 5378 plant/forage; 1897 biosolid; and 9703 research samples.

Tennessee- Debbie Joines

The Soil, Plant and Pest Center analyzes soil and forage samples; offers plant disease and insect diagnosis for producers, homeowners and researchers in all 95 counties of the state.

For calendar year 2008, sample totals were as follows:

Soil - 27,285

Forage - 1,294

Plant Problem/Disease ID - 422

Insect ID - 38

Golf Course Problem - 54

Instrumentation is as reported in 2008 however a new Orion ISE/pH meter and a Leica research stereomicroscope system for plant and insect disease diagnosis were purchased. We were able to purchase a custom-built soil dryer in fall 2008 which allows to cart in 400 samples to dry at a time. We have 1 full time lab technician, 1 full time diagnostician, 2 full time administrative support personnel and support for 3 student/part time employees.

A new effort at calibration of P and K rates for corn production on low testing soils began at both the Milan and Highland Rim Research and Education Centers. Because recommendations to add P and K are no longer made for high testing soils as of Jan. 2009, an effort to verify and demonstrate a lack of response to both of these nutrients on high testing soil was started at the locations listed above and will be used in field days during 2010. Funding from the Tennessee Department of Agriculture is making this work possible.

South Carolina- Kathy Moore

The lab has worked with a programming group to update the software called ClemSAM (Clemson soil analysis management) for users which creates soil forms and bag labels and transmits all sample information electronically directly into the lab soil database. Results when ready are transmitted electronically back into the users ClemSAM program. ClemSAM also allows the user to change the crop codes on their reports and generate new recommendations. This software is being used in addition to the currently used system which has been electronically sending back results since 2001.

Hopefully, as time goes, ClemSAM will be used by more county offices and clients. The software is available for download at this web site: http://mercury.esri.sc.edu/ClemSAM_Install/index.html (http://mercury.esri.sc.edu/ClemSAM_Install/index.html)

Equipment - a new 450 L microbulk argon tank (inside building) is being rented from National Welders which supplies argon to 2 ICPs.

The lab will lose all state funding (including salaries and fringe) for the next fiscal year (2009 - 2010). It is hoped that the lab revenue and an increase in the fertilizer tax money will cover all expenses.

Samples totals:

soil - 45,019 (12% increase over last year)

plant - 3,990

feed - 1,356

water - 404

waste - 1,982

compost - 76

other - 6,881

Oklahoma- Hailin Zhang

Soil, Water and Forage Analytical Laboratory

The total number of samples analyzed was 59,962 in 2008. We tested 30,839 soil, 3,064 water, 4,277 forage, 1,070 waste, and 20,662 various research samples during the year.

We have 2 Spectro Ciros ICP spectrometers, 2 Lachats and 2 LECO TruSpec C/N Analyzer in service. One of the ICP was replaced with a new Spectra Arco System.

Phosphorous in Mehlich 3 extract was switched to ICP from colorimetric quantification. However, the reported value is converted to the colorimetric equivalent in the range where P fertilizer is recommended because field calibration was based on colorimetric method initially.

North Carolina- David Hardy & Brenda Cleveland

A new LIMS system is being designed for the Agronomic Division labs to replace the old system used since 1994.

Soil Testing Section

The soil test lab completed a soil test feasibility study for the legislature but it appears that no fee will be placed on soil testing.

The soil lab retired one of the first ICAP 61E this past year and it was replaced with a Spectro Arcos, placed on-line in January, 2009.

The soil testing lab is working on a new format for homeowner soil test reports to make it easier to understand and to update fertilizer recommendations.

Research efforts- P and K requirements for Leyland cypress in cooperation with Eric Hinesley- NCSU; lime, P, and K requirement for Vinifera vitus in cooperation with John Havlin-NCSU; blueberry N fertility study in cooperation with Mike Mainland-NCSU; bramble fertility study in cooperation with Gina Fernandez-NCSU

Soil Testing Section (FY-2008) processed: 353,848- Total samples as follows: 344,488- routine; 4630-diagnostic; 4205-research; 525-internal

Plant, Waste and Solution Section (FY-2008) analyzed: 29,900-Total, a 9% decrease compared to FY2007.

Of the total samples 10,609 were plant samples; this was a 3% decrease in plant sample volume as compared to FY2007 (10,977). The top ten crops that were submitted for analysis were wheat, trellis tomato, grape, cotton, corn, strawberry, Fraser fir, greenhouse tomato, bentgrass, and flue cured tobacco and comprised 65% of the plant samples analyzed.

Waste samples totaled 16,500. This was an 11% decrease in sample volume compared to FY2007 (18,641). Of the waste samples processed 73% were anaerobic swine lagoon liquid samples and 9% were poultry house litter samples (broiler, broiler breeder and turkey). This breakdown in waste type was exactly the same as in FY2007.

Solution samples totaled 2,791; an 18% decrease from solution samples analyzed in FY2007 (3,401). Of these, 44% were nutrient solution samples.

The PWS Section continued to develop the SOP for soilless media analysis using the saturated media extract (SME) method. The new service was introduced to assist greenhouse and nursery growers to optimize crop production. The nursery and greenhouse industry is the number one crop commodity in North Carolina and number three after swine and turkeys. The lab began analyzing soilless media samples for clients in July 2008 (FY2009).

The Section also continued development of an SOP for soil carbon analysis by oxygen combustion.

Mississippi- Larry Oldham and Keith Crouse

The soil testing program noted the passing of Dr. James D. Lancaster in early 2009. He developed the Mississippi Soil Test, and the calibration/correlation research basis for MSU ES recommendations.

Within the MSU system, the laboratory is an Extension Service function of the Department of Plant and Soil Sciences under interim head Jac Varco. A search is underway for a permanent head, as well as Vice President of the MSU Ag Division. Sample numbers were constant, but trended downward with significant private sector soil testing operating in the state. Through Cotton Incorporated funding, Mike Cox and Larry Oldham are examining the various new lime requirement procedures offered in the south for applicability to the diverse soils of Mississippi. Keith Crouse is continuing field verification of potassium recommendations. A new cropping systems agronomist comes on board in September (August graduate from Nebraska soil science) who has the flexibility to work on soil fertility issues in his program.

Keith reported that the soil sample load was a record for two months during the spring, but for the fiscal year the final numbers were about the same from last year at 25,940 soil and 1,587 tissue samples.

We are excited about the opportunity to host the next meeting of the group in Starkville in June, 2010.

Louisiana- Jim Wang (by email)

The LSU AgCenter Soil Testing and Plant Analysis Laboratory analyzed 13,109 routine soils samples, 3,890 plant samples and 346 water samples in 2008, a slight increase of 4.8% in samples submitted for routine soil tests.

A Thomas Cain (DEENA) automated block digestor was obtained for plant material. It automatically adds reagents and can dilute to volume after digestion.

Additionally, a Spectro ARCOS ICP was obtained with its operation after the first of this year for all plant samples and most of the special analysis soil samples. The old CIROS model now runs for routine soil sample analyses.

Georgia- Leticia Sonon & Dave Kissel

Sample Numbers from Agricultural and Environmental Services Laboratories (AESL) comprised of three labs: Soil, Plant, and Water Lab (SPW (http://aesl.ces.uga.edu/labs/SPW.html)); Feed and Environmental Water Lab (FEW); and Pesticide and Hazardous Waste Lab (PHW). Soil numbers increased by about 5%. The sample numbers at AESL in the last two years are shown in the Table 1 below.

Table 1. Number of samples analyzed at AESL in the last two years.

Sample Type	May 2007 - April 2008	May 2008 - April 2009	Difference
Soils	73,950	75,526	+ 1,576
Manures	2,163	2,251	+ 88
Waters	6,900	6,126	- 774
Plants	6,178	4,737	- 1,441
Feed and Forages	3,634	2,513	- 1,121
Microbiology	1,175	1,374	+ 199
Georgia EPD contract	2,968	2,068	- 900
Other	1,357	1,305	- 52
TOTAL	98,325	95,900	- 2,425

Personnel

Dr. Uttam Saha will join UGA's Feeds and Environmental Lab as the Program Coordinator on August 1, 2009 to replace the late Dr. Paul Vendrell. Dr. Saha is currently connected with the University of Florida at Gainesville, FL.

New Laboratory

The AESL has added a new laboratory, **Trace Level Analysis Lab**, to handle analysis of elements at very low concentrations in water, soil, manures, and any environmental samples. This lab is equipped with new instrumentation including an axially viewed ICP ARCOS (Spectro model FHE12 (ARCOS - EOP manufactured by Spectro 91 McKee Drive, Mahwah, NJ 07430) and Cetac mercury analyzer is

model M-6100. It detects mercury vapor via CVAA, manufactured by CETAC Technologies 14306 Industrial Road, Omaha, NE 68144 U.S.A.

Publications

Leticia Sonon and Julia Gaskin. 2009. Metal concentration standards for land application of biosolids and other by-products in Georgia. UGA Extension Bulletin #1353.

David E. Kissel, Leticia Sonon, Paul Vendrell, and Robert Isaac. 2009. Salt concentration and measurement of soil pH. Communications in Soil Science and Plant Analysis, 40:179-187.

Liu, Min, D.E. Kissel, L.S. Sonon, M.L. Cabrera, and P.F. Vendrell. 2008. Effects of biological nitrogen reactions on soil lime requirement determined by incubation. Soil Soil. Sci Soc Am J. Vol. 72 (3) 720-726.

David E. Kissel and Leticia Sonon. 2008. Soil Test Handbook for Georgia. Special Bulletin 62.

Kissel, D.E., Mark Risse, Leticia Sonon and Glen Harris. 2008. Calculating the fertilizer value of broiler litter. UGA Circular #933.

Florida- Rao Mylavarapu

For the new ANSERV Labs with four specific components, we have hired a new lab manager, Mr. William d'Angelo, with over 28 years of experience at USGS labs.

One of the major tasks is to make the labs self-sufficient and pay the staff salaries from lab revenues. About 40% of that task is completed and the rest is planned in the next 2-3 years.

The extension lab is planning to switch the extractant procedure from Mehlich1 to Mehlich3 for all acid-mineral soils by the end of the year.

New test protocols and procedures for Bahiagrass pastures, commercial citrus producers and sodgrass have been developed and implemented.

A new test for Phosphorus Capacity Index is being developed and will be made available from July, 2009.

Arkansas- Morteza Mozaffari

Soil Analysis

The total number of soil samples analyzed in 2008 was 120,408. Of this total, 110,328 were samples submitted by clientele and the remaining 10080 samples were standard check soils analyzed for quality assurance. This was a new record since the inception of soil testing program in Arkansas. The number of grid soil samples analyzed in 2008 was 56,660 which is approximately 51% of all samples received and indicates a 15% increase in the number of grid soil samples compared to 2007.

The Marianna Laboratory continues to participate in the North American Proficiency Testing Program coordinated by the Soil Science Society of America. In 2008, results from quarterly soil samples continue to show the soil test results from the Marianna laboratory for Mehlich-3 extractable nutrients and soil pH are accurate and comparable to other laboratories using similar testing procedures.

Plant Analysis

 *The number of plant samples analyzed by the laboratory has decreased compared to 2007. The Marianna laboratory will continue to provide analytical services for the Cotton Petiole Monitoring Program. The laboratory tested 438 petiole samples in 2008. Additionally 1,547 plant samples were tested for total elemental concentration and total nitrogen was measured on 3,073 plant samples.

 *Plant samples intended for diagnosis of nutrient deficiencies and research plant samples are directed to the Fayetteville Agricultural Diagnostic Services Laboratory for analysis.

Publications:

 *The Wayne E. Sabbe Arkansas Fertility Studies 2008 has been prepared and can be accessed on the internet at http://arkansasagnews.uark.edu/3562.htm

Laboratory Analytical Methods, Instruments/Equipment, and Research:

Organic matter analysis by Weight Loss on Ignition was performed on 794 soil samples in 2008.

We need new laboratory instruments for continuing the soil testing services and reducing the turnaround time. One of the four existing ICPs was purchased in 1991 and two were purchased in 1997 and 1998. It is becoming increasingly difficult, costly and labor intensive

to maintain and operate these old instruments. We are concerned that one or more of these instruments will breakdown. When funds become available we must consider purchasing a new instrument. The soil pH robot system is more than 14 years old. The operating system running the software pH robot is Windows 98 based and is well outdated and does not allow us to install effective virus and hacker protection programs on the existing system. The hardware operating the robot is also old and occasionally breaks down which delays analysis and requires time and funds to repair.

Service to the Public

Educational programs were developed and delivered at various events to increase public awareness of the U of A Soil Testing Program. There is a need to educate some of our clientele on proper preparation of soil test request forms (CES 435 form) and proper packaging of soil samples. The outcomes should reduce the turnaround time and our labor costs. Training on these issues as well as certain aspects of the laboratory operations will be included in the future educational efforts.

Arkansas Laboratory in Fayetteville- Nancy Wolf (by email)

The U of AR Agriculture Diagnostic Service Laboratory located in Fayetteville analyzes plant tissue, manures, forages, research soils and plants as a fee based service.

For calendar year 2008, the total number of samples analyzed was 27,626. A breakdown of the major sample groups are forages-1,040, manure-1,343, plant tissue-10,236 research soils-3,415, and partially prepared research samples at 11,384. The total number of samples is a 20% increase from last year. We have not increased individual analyses fees so this increase in sample numbers has allowed us to continue covering salary and operating costs for now.

We are still running analysis on manures in the Euchi-Spavinaw Watershed and gathering data on water soluble phosphorus using the 1:10 method as mandated by the courts involved in the poultry litter lawsuit. We are also running some samples at the 1:100 extraction ratio to eventually switch to the more nationally accepted method.

We have not purchased any new instruments. Our ICP needed major repair parts but is up and running now. We are still using an Elementar Rapid N for analysis of nitrogen on plant tissue and an Elementar Variomax for C/N analysis on soils, manures, and liquid

manures. We are using a Skalar SanPlus for inorganic nitrogen in soils and manures. The newest challenge is how to sell or surplus old instrumentation of which I have two LECO instruments and a Spectro Model D ICP.

Alabama- Gobi Huluka and Charles Mitchell

Traditionally, the number of routine soil tests correlate well with the total row crop acreage in Alabama. Cotton and peanut growers have been the most dependable users of our services. The acreage of cotton in 2008 (290,000 acres) is less than half what it was 5 years ago. Peanut acreage has dropped a little to 195,000 acres but is now spread out across the state rather than being concentrated in the Southeastern counties as it was for decades. Corn and soybeans are traditional rotation crops and their acreage has never been intensively sampled. Both corn (260,000 acres in 2008) and soybean (260,000 acres) acreage is up considerably. Casual observations suggest that a lot of land will not be planted in 2009 because of both weather (heavy spring rains) and economics. The Tennessee Valley which traditionally planted over 300,000 acres of cotton is almost all corn and soybeans in 2009. We anticipate that these changes will impact the number of soil samples we test.

In 2008, we initiated soil sample information submission via the web. However, this system is being used only by our largest customers. Most samples are still logged in at the lab. More and more samples results are being emailed directly to customers and the flexibility of having reports in different formats has been quite useful to our customers e.g., Excel spread sheets and xml for precision ag samples, traditional text reports, and graphic reports primarily for vegetable and lawn samples. County agents and specialists appreciate being able to do soil test summaries by county and statewide and searches via the web.

Lab activities summary for the past year included:

The total number of routine soil samples was about 26,000 and was about 1000 more than a year before and about the same number of forage, water and litter samples as last year. Our routine turnaround time is 24 hours under normal conditions.

We have significantly made our services available online for payments, delivery options, lime and fertilizer calculators, and working on improved website for our lab.

Our vario MACRO CHN analyzer from Elementar that was purchased last year is doing well, but consumes more consumables that are expensive.

We switched from analyzing P colorimetrically to using ICP.

We conducted a very successful Soil Testing Advisory Committee meeting in April with the presence of the dean of the College of Agriculture Dr. Richard Guthrie charring the meeting. Departments, extension, agricultural research experiment station and producer representatives were present. The state of the soil testing lab was discussed with Dr. Charles Mitchell leading the presentation with the history of the lab. We are planning to have an annual meeting of the committee that will include agricultural consultants and more producers. The main purpose of the committee is to discuss major issues pertained to the soil analysis service the lab provides and make necessary suggestions. A similar AU Advisor Committee for Forage Analysis is also formed and scheduled to meet soon.

Monday, June 22, 2009

Welcome

8:00 AM. Tony Provin welcomed the group in the absence of Texas AgriLife Research and Extension, Dr. Travis Miller.

Administrative Report

8:20 AM. David Kissel.

Kissel thanked Tony Provin for an outstanding effort in putting together the 2009 meeting.

Kissel mentioned that the Research Administrative Advisor, Dr. Steve Workman, from Biological and Agricultural Engineering- UKY was unable to come but expressed interest and should be at the meeting next year. The representative from USDA-CREES has not attended since the Clemson meeting in 2006 which may reflect the budget situation. Minutes have not been sent to the contacts but rather to the regional offices

Technical Session

8:30AM

NAPT data- accessibility and applicability in teaching and research- - Frank Sikora, UKY and Bob Miller- Colorado State University

--Frank presented an overview of the NAPT database that he developed in Access and talked about the value of it. He is presently using it in teaching a graduate level soil class. Currently the database has data from 1999-2006 entered. There was mention of establishing a link from SERA-6's website to this database. The database is found at http://soils.rs.uky.edu/NAPT_database.php (http://soils.rs.uky.edu/NAPT_database.php)

--Bob talked about proficiency data methods comparisons and the use of covariables to help define soil property relationships. He also talked about method precision as related to concentration.

9:15 AM

QA/QC in Soil Testing Labs -Leticia Sonon- University of Georgia and Hailin Zhang- University of Oklahoma.

--Leticia presented the details of QA/QC used by UGA soil testing lab. She covered SOPs, role of QA/QC officer, sample handling, on-line submission, sample sorting, sample separators for sample order, scooping, comparing data ratios to detect set swaps, check soil values, and pH measurement of extracting solutions.

--Hailin discussed accuracy and precision and presented information on soil sampling as related to the number of cores submitted to represent an area. He suggested 15 to 20 cores are needed to optimally sample a given area to achieve good results.

10:15- Soil Test Calibrations -David Hardy and Dave Kissel

--David gave an introduction to soil calibration mentioning fertilizer cost being a major concern for growers today. Growers are questioning rates and want to know how low they can go without compromising yield. Calibration data are typically decades old and were developed from differing cultural & production practices (tillage, varieties, plant populations, etc.) than used by growers today. For many private labs, it is not understood as to where their recommendations come.

--Dave presented information about K recommendations and a situation he was involved in this spring when a grower was questioning rates for corn under irrigated conditions. He presented data from SSSAJ 56:141-148 and J. Prod. Agric.9:88-94. Based on these articles, he though that the GA recommendations were on target. Subsoil nutrients were discussed as to their importance. He encouraged the group that this is an area that needs work.

11:00AM

Comparison of Several Rapid Methods of Determining Lime Requirement, East Texas Soil Perspective -Dlamini and Leon Young

--Leon presented work from a thesis study in comparing rapid methods to determine lime rates on Ultisols and Alfisols. The Adams-Evans buffer had been used since 1980 and with the p-nitrophenol disposal issue, they were seeking alternatives.

11:45-12:45PM LUNCH - Sponsored by Spectro Analytical Instruments

12:45PM

NCERA-13 Update -Manjula Nathan

--Manjula brought news from the North Central Region group and mentioned that the group was shrinking with some labs closed due to lack of support. The Nebraska lab is now closed and Minnesota lab is running only 4 days a week. She mentioned that they were trying to revitalize the group by inviting newer individuals as well as representatives from private lab and consulting groups. She also mentioned the NCR group met in Iowa in Feb. and had a workshop; the North American soil testing manual was also mentioned.

1:00PM

IPNI (International Plant Nutrition Institute) Activities -Steve Phillips

--Steve presented an overview of IPNI and talked about differences from the PPI days. The IPNI is represented by 17 member companies with a focus on international nutrient issues and world food security. IPNI scientist have responsibilities in research projects, outreach (Better Crops, N. American Soil Test Summary), and education (CCA training, etc). The web site of IPNI is http://www.ipni.net/ (http://www.ipni.net/)

As related to the SERA-6 group's interest in calibration and potential funding, Steve suggested Foundation for Agronomic Research

FAR.

http://www.farmresearch.com/ (http://www.farmresearch.com/)

1:15PM

Extension of Routine Soil Tests for Environmental Assessments -Rao Mylavarapu

--Rao talked about revising protocols for P testing for bahiagrass in southern FL pastures. Deficient P is being seen where low soil test P levels are found; low tissue P is detected too. He also discussed the P Index tool and the interest in including Al and Fe in the soil P Capacity Index.

1:30PM

Nutrient Management for Biofuel Crops - Larry Oldham

--Larry said that a number of states (Univ. of TN, Univ. of AR, etc.) had on-going work as related to nutrient management for biofuel crops and the status was temporarily in a holding pattern.

2:15-3:00PM BREAK & TRAVEL TO TAMU CAMPUS

3:00PM

The Changing Paradigm - Soil Fertility and Forage Production, Dr. Larry Redmon

--Dr. Travis Miller welcomed the group to TAMU campus.

Afterward, Dr. Redmon presented an interesting talk about fertilizer prices and the nutrient requirements of bermuda as related to keeping it viable or maintaining it. He presented varying budgets and cost/return information at different fertilizer prices and levels of production. The importance of legumes in supplying N, changing the forage base to native forage grasses (bahia, bluestem, Kleingrass) was discussed. A strategy to determine fertility requirements was to see what the native fertility was in the prairie. Deep supplies of nutrients were mentioned.

3:45PM

SWFTL Tour. Tony Provin

--Tony toured the group through the Soil, Water and Forage Testing Laboratory.

Tuesday, June 23

TECHNICAL SESSION

8:00AM

Another word from our sponsors including:

Texas Scientific Products- Tony gave appreciation to this sponsor; no representative attended the meeting.

--Keith Hensley from Lignin talked about his latest developments in supporting soil labs to become more efficient through automation.

The sponsors were thanked for their continued support.

8:30 AM

Regional Survey on Water Analysis -Gobi Huluka

--Gobi talked about the reasons that we test water and that 6 labs had participated in the recent survey. Each lab somewhat delivers a tailored service with needs being the reason for such differences.

There was discussion among the group about moving water analysis forward; this comes partly as a response from CES agents' interest in water testing and education. **A Water Testing Subcommittee** would be formed composed of representation from GA (Leticia), Al (Gobi), OK (Hailin), and FL (Rao). Leticia will lead / chair the group.

9:00AM

Publications

--Debbie Joines discussed the publication-DRAFT: Mineral Status of Forage in TN. She gave an overview. Cattle develop rough coats because of inadequate nutrition (Cu deficiency) that appears to be S related. Air emissions are the source of S. Sulfur interacts with Cu utilization in cattle. A level of S > 0.25% in forage is viewed as antagonistic; the max. tolerance concentration is 0.40% S. A Cu level of 10 ppm in forage is desirable but levels < 7 ppm have been found. She also discussed luxury consumption of K and effects on Mg uptake.

Forage testing is recommended to evaluate nutrition. Supplements with Cu can be given.

There was discussion about the need for this fact sheet. Charlie Mitchell and Kathy Moore would review the fact sheet drafted by Debbie and Tony would provide a link on the SERA site so states could acquire.

--Charlie Mitchell passed out the Soil Testing & Recommendations for Cotton on Coastal Plains Soils- DRAFT and gave background on the project.

Information from TX and OK should be removed since the states are not in the C. Plains.

Charlie asked for reviews of the publication to be complete by mid-July and especially encourage co-authors to review. All states should respond to Charlie.

--Rao mentioned the need to have the REFERENCE SUFFICIENCY RANGES
FOR PLANT ANALYSIS IN THE SOUTHERN REGION OF THE UNITED STATES SCSB 394 placed on the web as a PDF file. David responded that he would ask the communication specialist with NCDA to look into this.

--Dave Kissel discussed the need for a publication on calibration. There was concern over representing soil test P & K levels in pounds per acre instead of these representing an index measure of nutrient level. It was questioned if any work existed on Mehlich 3 extractable levels and plant uptake. Calibration and correlation were mentioned. A Soil Test Calibration Subcommittee would be formed consisting of membership from AL, GA, TN, TX, MS, NC, FL, and OK. Kissel would lead the effort.

--Hugh Savoy mentioned the Bulletin 190 and the need for a publication number. Kissel suggested taking this to the sub-regional office in NC.

9:30AM

Internal Support for State Labs' -White paper

--Dave Kissel led the discussion. There was a general agreement that the white paper was very good. FL already forwarded to the Extension Deans and County/District Extension Directors in the state. It was decided that the authors of the white paper work on bringing the document to a final form and then forward it to the SERA-6 Research Administrative Advisor for comments and onward transmission to the Director-at-large at the Southern Region Director's office.

10:15AM

NAPT Update -Provin

--Tony gave a brief update from the NAPT. The program was trying to acquire more soils across the U.S., so if you have a soil to send, the program will pay for shipping.

10:25AM

Proposal for a new methods publication for the Southeastern USA -Frank Sikora

--Sikora sent out a proposal to the group about the need for developing a Methods manual for the Southern Region to replace the original 1983 and supplemental 1992 publications. Discussion about the national procedures manual being led by other groups also ensued but it was decided that a new updated publication for the southern region is required. So a subcommittee was formed with volunteer members from- FL, MS, AL, AR, SC, LA, GA and TX (Leon and Tony), which would meet four times (Aug, Nov, Feb, June) a year. Sikora will send out reminders and topics.

11:00AM

Next Meeting -Mississippi

--Oldham accepted to host the 2010 annual meeting in Starkville. He explained the possible modes of travel to Starkville. Of the two possible sets of dates available, June 13, 14 and 15 were preferred by the group. More information will be forthcoming from Oldham.

-- The Water testing subgroup opted to meet alongside of the meeting in Mississippi in 2010 for half-a-day or a day.

12:00NOON Adjourn