

Minutes  
Mid-Atlantic Soil & Plant Analysis Workshop

February 18-19, 1998

Holiday Inn on Blvd. Drive  
Richmond, Virginia

Wednesday, February 18, 1998  
8:30 a.m.

The meeting was called to order by the Chairman, M. Ray Tucker.  
Phil Howard spoke on the new programs and activities at Southern States.

Joe Buriel of Maryland presented the sample exchange results. A suggestion was made to include buffer pH values in next year's exchange. Ray Tucker provided a reference to a paper published in Wisconsin on the calcium/magnesium ratio: E. E. Schulte and K. A. Kelling. Bulletin #A2986. Order from Extension Publications, Rm. 245, N. Murray Street, Madison WI 53715. Phone - (608)262-3346.

A Mehlich-3 update across regions was given. Mark Flock reported his lab changed to Mehlich-3 in 1985. He reported on the correlations between extractants. 80% of the samples coming through his lab are extracted with Mehlich-3, however any test is offered to the consultants. A handout was distributed regarding research on the Mehlich-3 extractant vs. other extractants for different regions.

Steve Donohue discussed some problems in calibrating the Mehlich buffer for the lime requirement test.

Gordon Miner distributed a handout entitled "A Comparison of Soil Phosphorus from Various Soil Tests."

Bill Shakal discussed converting Mehlich-3 results to other values using regression equations.

A presentation regarding utilization of composted manure in Pennsylvania - composting and nutrient management - was given by Doug Beegle.

A paper was presented by Dave Martens entitled "Downward Movement of Copper, Phosphorus, and Zinc after Sixteen-Annual Applications of Copper-Rich Pig Manure."

Gordon Miner presented a talk regarding strawberry fertigation under plastic.

A presentation regarding the concentration of P-K-Cu-Zn by depth from poultry waste sites and heavily fertilized potato fields was given by Ray Tucker.

Thursday 19, 1998  
8:15 a.m.

Rao Mylavarapu spoke about high soil phosphorus and runoff.

Steve Donohue led a discussion on GPS/GIS activities and involvement in the participating labs.

Virginia Tech (Steve Donohue) - There is research being done on precision farming in the eastern part of the state and upper coastal plains. Two workshops were given with researchers presenting programs. The interest is where the fertilizer companies operate.

Agri Analysis (Tim Hoerner) - About 600 samples tested from precision farming. There is an interest in yields and trying to optimize performance.

South Carolina (Rao Mylavarapu) - A GPS study was done using yield monitors. A correlation was not found between the tests and yields. Dealers would like to get involved. There are opportunities for research.

North Carolina (Gordon Miner) - Presently there is a lot more promotion than research - a lot of interest. A field day was held in Plymouth with on farm demonstrations. A workshop is coming up. There is not much expertise in the department. A move to get this into the undergraduate programs and courses is underway. Other uses besides fertility are being looked at.

Brookside (Mark Flock) - There haven't been many samples coming to the lab from grid sampling. The consultants are involved in GPS/GIS - used to sample and tie into yield monitors. The bigger farmers are dropping out of grid sampling - haven't seen it pay off. They have not seen fields even out with yield.

Pennsylvania (Doug Beegle) - Looking to see how Precision Farming might be adapted to their situation - hilly, small areas. People in the pest area are working on site specific models.

A&L (Paul Chu) - Not a lot of samples coming in from grid work. Grid sampling is contracted out to private individuals. There has not been a lot of correlation between fertility and yield maps. Dealers want a price cut for submitting more samples.

Jim Woodruff commented there is a need to focus on efficiency of fertilizer application environmentally.

North Carolina (Ray Tucker) - The small vendors are concerned with the price of equipment. Substantial increase in sample volume at the lab. There is a problem with wet samples coming in and handling.

Ray Campbell discussed the laboratory certification process in North Carolina. The certification has come from the environmental management agency in North Carolina. In NC a waste analysis and a soil test must be done to apply waste. The soil lab is certified to analyze P, Zn, Mn, Cu, (using Mehlich-3) and pH. The waste lab is certified to analyze TKN, P, Zn, and Cu. Ray commented it's been difficult to get samples done in a certain time frame. The cost of doing business has increased - it's been discouraging. He's in the process of putting together a quality assurance document.

## State/Lab Reports

Agri Analysis (Tim Hoerner) - Presently using a commercial accounting system. Organic matter in soil is being done with NIR.

North Carolina (Ray Campbell) - Experiencing a significant growth in all three services. Total samples for July 1997 - Feb. 1998: Plant - 8022, Waste - 6877, Solution - 1764. Currently, new equipment is on order to do segmented flow analysis for TKN, NH<sub>4</sub>-N, NO<sub>3</sub>-N/NO<sub>2</sub>-N, Urea, and Cl. It is planned to eliminate distillation and go to a microwave digestion and segmented flow analysis to shorten the time for nitrogen analysis and be able to handle 300+samples per day. The Waste Advisory Service is completely computerized. Currently working on parameters, recommendations, and narratives for full automation of plant and solution analysis.

South Carolina (Kathy Moore) - Total samples analyzed in 1997: Soil - 36531, Plant - 3314, Feed - 2053, Water - 323, Waste - 344, Other - 2827. Anticipating a substantial increase in waste and soil samples from 2x4 research initiative and also DHEC (Department of Health and Environmental Control) regulations. Discussing lab certification.

Rao Mylavarapu has completed the new lime and fertilizer recommendation book entitled "Nutrient Management for South Carolina". He is working on a 2x4 project to look at Cu and Zn levels in the soil.

Richard Brown has recently acquired an ICP. Presently working up a method for metals in soil.

Indiana (Bill Shakal) - Some states in area are recognizing the national proficiency test. There are kits available for waste sampling. The soil samples numbers are increasing.

Brookside (Mark Flock) - Using a new system for NO<sub>3</sub>-N and NH<sub>4</sub>-N determination. There is an increase in sample load by about 5 - 6 %.

Pennsylvania (Doug Beegle) - The soil sample volume is down to about 44,000 samples. The number of plant and bio solids samples is holding steady. Presently looking at bringing the computer system in house.

A&L (Paul Chu) - The computer system has been upgraded to PCs - all data is now on archives. There is a bulletin board system for outputting data. Plan to change to an e-mail system in the future.

Virginia Tech (Steve Heckendorn) - Received about 25,000 soil samples last fiscal year - slightly down from previous year. The 4 sample box mailer is gaining in popularity. More state funding of extension and state universities. The computer hardware and lab equipment is being updated. Switching to LOI for organic matter determinations, Mehlich-3 extracting solution, and adding the Mehlich buffer pH. A new Spectro-ICP has been installed (model FTM-08 with two optical benches.)

Maryland (Joe Buriel) - The number of soil samples has increased by about 20% to 17,000. The number of plant samples has decreased by 20% to 8000. The number of manure samples has remained the same at 1200. The lab will be undergoing renovations. The department is in the process of locating funding for the purchase of an ICP or ICP-MS. Hope to switch to Mehlich-3. Presently switching to a buffered pH, either Mehlich buffer or SMP. Also, connecting computer components in the lab to a LAN.

Delaware - A packet of fact sheets was distributed.

Jim Woodruff (Borax) introduced Eldon Allen as the new representative for the South-East and Coast areas. Over \$100,000 per year is being given for supporting research. Presently, there is an ongoing regional cotton project involving B and N with the states VA, NC, SC, GA, and AR. The samples are being analyzed at the Ag Service Lab in Clemson. In addition, there is work being done on the effects of B on bentgrass and bermuda grass. Another project involves corn yield research responses to foliar applied B. Also, work measuring alfalfa tissue B over time on different soil types is being done.

North Carolina (Ray Tucker) - Presently having trouble filling positions at the lab. Running 40,000 soil samples per month - 2000 samples a day. The web address is <http://www.agr.state.nc.us/agronomi>.

Plans for next year - Meeting date - February 17 - 18, 1999. Delaware will be in charge of the sample exchange.

The meeting was adjourned at 11:45 a.m.

The breaks were provided by Southern States.

The social hour was provided by Spectro.

The dinner at Steak and Ale was provided by Borax.

Minutes prepared and submitted by Kathy Moore.