Mid-Atlantic Soil Testing and Plant Analysis Work Group (MASTPAWG)
Minutes of the 2015 Meeting
Embassy Suites, Richmond, VA
February 10-11, 2015

The meeting was called to order at 8:15 a.m. on February 10, 2015 by John Spargo, the 2015 chair of MASTPAWG. Introductions were made and John informed the group of the status of those members unable to attend. The chair browsed through the program and acknowledged the participants and the various sponsors. Complete program of activities are shown in Appendix I (page 4).

The following were in attendance:

Steve Culman – Ohio State University
Bob Dussich – Spectro
Sally Flis – Dairy One
Karen Gartley – Univ. of Delaware
David Hardy – NC Dept. of Agriculture
Steve Heckendorn – Virginia Tech
Kristin Hicks – NCDA
Tim Hoerner- Agri Analysis
Scott Hughes – EA Consumables, Inc.
Frame Hunter – Virginia Tech
Mark Larsen - Elementar
Brad Mathson – Southern States Coop
Josh McGrath – Univ of Maryland
Bob Miller, ALP, CSU
Robert Mullen – Potash Corp.
Stephanie Murphy – Rutgers Univ.
Vernon Pabst – Spectrum Analytic
Manjinder Phull – Questron Technologies Corp.
Edwin Ritchey – University of Kentucky
Craig Seeley – Thermo Scientific
Amy Shober – Univ. of Delaware
Ken Slight – Elementar Americas, Inc.
Leticia Sonon – Univ. of Georgia
John Spargo – Penn State Univ.
Fred Tinter – Thermo Fisher Scientific
Byron Vaughn - ALP
Dennis Warrenfeltz - LabFit

Some of the 2015 MASTPAWG Conference participants.

Brad Mathson, Sr. Precision Ag Program Planner for the Southern States, welcomed the 27 participants from various laboratories and agencies. He shared some updates from Southern States and discussed some of the on-going activities in the agronomy side. The group, through the chair, thanked Brad for hosting the meeting and providing snacks and other supplies needed for the conference.

A series of reports research papers covering a wide array of topics were presented. Robert Mullen of PotashCorp shared a report on North American potash supply chain. A research paper on revisiting critical soil test K for corn in Delmarva was presented by Amy Shober of the University of Delaware. This was followed by a presentation on the University of Georgia's soil testing quality assurance and quality control by Leticia Sonon. Bob Dussich of SPECTRO Analytical Instruments informed the group on new ICP spectrometer technologies from Spectro.

After the lunch break, Steve Culman of the Ohio State University presented his paper on measurements of active soil organic matter. He said that active organic matter is only a small fraction of the total pool of organic matter, but plays a vital role in plant mineral nutrition. Summary of this paper is in Appendix II.

Appendix II shows the line- up of talks and presentations by various participants.

Research paper/reports presented include:

- Interpretation of cation ratios in corn tissue – Robert Miller, Colorado State University
- Reducing matrix effects in an axial viewed plasma – Mike Rutzke, Cornell University
- Cotton petiole testing as a diagnostic tool – Hunter Frame, Virginia Tech University
- Sulfur Fertility for Kentucky Agriculture – Edwin Ritchey, University of Kentucky
- *ALP update* – Robert Miller, Colorado State University
- The Potential use of fresh squeezed leaf sap as a diagnostic method to monitor the nutrient status of plants – Mike Rutzke, Cornell University
- Programs on soil restoration standard for New Jersey – Stephanie Murphy, Rutgers University
- NAPT Update – Karen Gartley, University of Delaware

Updates from instrument/supply companies:

- Sample introduction system for analysis of soil samples by ICP-AES – Bob Dussich, Spectro
- High throughput trace elemental soil analysis using ICP-OES – Craig Seeley, Thermo Scientific.
- Elementar update – Mark Larson, Elementar
- Elemental Analyzer Consumables. Our products are intimately involved with your samples – Scott Hughes, EA Consumables
- Sample Preparation Tools: Adding Reliability, Efficiency and Safety in Analysis – Manjinder Phull, Questron Technologies

The group discussed plans for the 2016 meeting including dates and possible topics.

- Meeting Date**:** February 9-10, 2016; Snow date: April 12-13, 2016.

The group expressed their appreciation to the sponsors especially to Southern States for free use of the meeting venue, snacks, and lunches.

The meeting adjourned at 11:45 am, February 11, 2015.

Minutes prepared by:

Leticia S. Sonon
University of Georgia

Appendix I

Mid-Atlantic Soil Testing and Plant Analysis Working Group
Embassy Suites, Richmond, VA
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Tuesday, February 10, 2015 ***Morning Session***	
8:30 - 8:40	Call to order
8:40 - 9:00	Welcome from Southern States – Brad Mathson, Sr. Precision Ag Program Planner
9:00 - 9:20	Introductions, update member list, review agenda, dinner plans
9:20 – 10:00	*North American potash supply chain* – Robert Mullen, PotashCorp
10:00 - 10:20	Break – Sponsored by Southern States
10:20 – 11:00	*Do we need to revisit critical soil test K for corn in Delmarva?* – Amy Shober, University of Delaware
11:00 - 11:40	*Soil testing quality assurance and quality control* – Leticia Sonon, University of Georgia
11:40- 12:00	*New ICP spectrometer technologies from Spectro* – Bob Dussich, SPECTRO Analytical Instruments
12:00 - 1:00	Lunch – Sponsored by Southern States
Afternoon Session	
1:00 - 1:40	*Measurements of active soil organic matter* – Steve Culman, Ohio State University
1:40 - 2:20	*Interpretation of routine measures of soil quality: qualitative or quantitative?* – Josh McGrath, University of Kentucky
2:20 – 2:40	*Sample introduction system for analysis of soil samples by ICP-AES* – Sergei Leiken, Texas Scientific Products
2:40 - 3:00	Break – Sponsored by Southern States
3:00 - 3:40	*Interpretation of cation ratios in corn tissue* – Robert Miller, Colorado State University
3:40 - 4:20	*Reducing matrix effects in an axial viewed plasma* – Mike Rutzke, Cornell University
4:20 - 5:00	*Cotton petiole testing as a diagnostic tool* – Hunter Frame, Virginia Tech University
5:00 - 5:20	*High throughput trace elemental soil analysis using ICP-OES* – Craig Seeley, Thermo Scientific.
5:20 - 6:00	Break
6:00 - ???	Dinner – Compliments of our sponsors
Wednesday, February 11, 2015 ***Morning Session***	
8:00 - 8:40	*Sulfur Fertility for Kentucky Agriculture* – Edwin Ritchey, University of Kentucky
8:40 - 9:00	*Elementar update* – Mark Larson, Elementar
9:00 - 9:20	*ALP update* – Robert Miller, Colorado State University
9:20 – 10:00	*The Potential use of fresh squeezed leaf sap as a diagnostic method to monitor the nutrient status of plants* – Mike Rutzke, Cornell University
10:00 – 10:20	*Elemental Analyzer Consumables. Our products are intimately involved with your samples* – Scott Hughes, EA Consumables
10:20 – 11:00	*Programs on soil restoration standard for New Jersey* – Stephanie Murphy, Rutgers University
11:00 – 11:20	NAPT update – Karen Gartley
11:20 - 12:00	State reports and final plans for 2016 meeting

Appendix II

Talk Summary

Steve Culman

Active organic matter is only a small fraction of the total pool of organic matter, but plays a vital role in plant mineral nutrition. Most active organic matter measures are prohibitively expensive to growers, however two methods, permanganate oxidizable carbon (POXC) and one-day respiration from rewetted soils, are inexpensive, robust, and suitable for a high-throughput soil test laboratory environment. Study 1 examined the POXC to determine what it functionally reflected in soil and how sensitive it was to management. Results show the POXC reflects a more processed, but labile pool of active organic matter and that it is more or equally sensitive to management changes, as compared to total soil carbon, microbial biomass or particulate organic carbon. Study 2 examined POXC and respiration over the 6 time points of a corn growing season in a long-term systems study. Results show that POXC and respiration were more sensitive to treatment differences and that respiration was the best predictor of corn grain, biomass and total aboveground total N (bettering PSNT, leaf chlorophyll, POXC). Opportunities exist to integrate measures of soil active organic matter into a traditional soil testing framework. Some tests could be complement existing methods, but more research is needed to determine potential relationships.

Steve Culman, School of Environment and Natural Resources

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