

NECC-1012 2010 meeting – Matamoras, PA

Joel Tilley – Vermont

Solomon Kariuki – Maryland

Bruce Hoskins – Maine

Quirine Kettering – New York

Ann Wolf – Pennsylvania

Stephanie Murphy – New Jersey

Dawn Pettinelli – Connecticut

Guest: Sandra Hughes – Elementar

September 29, 2010

Introductions

USDA liaison/administrator (Dr. Rhodes) not available to report.

Topic: Methods Manual (discussion led by Bruce)

Last chapters submitted to Karen - June

Organic matter chapter to be posted – wet oxidation

Nitrate – last revision

Need to update appendix – tables of methods used by each lab

New Chapter proposed for Pb screening/analysis

CEC – in progress, almost finalized

Sulfate – old chapter still in place, needs updating. Quirine discussed incubator study; results of extractants for S analyzed by both spectrophotometer and ICP. Calcium chloride (Williams & Steinberg, 1959) looks most promising (4 soils). Looking for parallel response among soils. Good correlation between spectrophotometric and ICP values, latter being greater. Can follow build-up in corn and draw down by alfalfa – then yield response. Response remains even when soil test equal (subsoil differences); S response – applied, not found in surface. Alfalfa most heavy user (other legumes?) also corn.

Pb interpretation values – NY-DEC values very conservative. See SERA-6 methods. Massachusetts levels very liberal. Should we include interpretation? EPA office in MA (Region 1) runs Pb free on prescreened samples.

Goal: finish updates by 2011. Discussion of moving to another U website due to delay in getting finished chapters up. Rutgers? Downside: changing URL reference, and it officially is a DE document.

Topic: P measurement comparison (Bruce)

Handout from Bruce. Colorimetric vs. ICP P using Modified Morgan extraction. Factors that improve prediction of P (PICP and Al*PICP for each set (CT, VT, and ME) and many others significant at 5%).

Topic: Morgan/Modified Morgan comparison (Bruce)

Handout from Bruce provides summary of regression analysis of Morgan vs. Modified Morgan for 8 elements and graphs. Charcoal effect (Morgan): such as pulling Cu out and other heavy metals (incl. Al) *except* Mn. Root mean square error – uncertainty/confidence interval. How does it change recommendations?

Topic: Soil/Fertilizer-related legislation in NJ (Stephanie) –

N and P limitations for turf fertilizer to affect NJDA registration of fertilizer products, manufacturer labeling, retail availability, dates of application, certification of professional applicators

Presentation: Use of CUBE elemental analyzers (Sandy Hughes, Elementar)

Topic: LOI OM% correlation with Walkley-Black

Handout summarizing methods used in each NE State and the regression equation used for those reporting WB-equivalents, with graph of comparison data.

September 30, 2010

State Reports- attached

Topic: Tissue Testing recommendations (Dawn)

Other?

Annual meetings – plans for next year

Mission of NECC-1012: future opportunities for regional collaboration

Adjourn

NECC-1012 Annual State Report For Pennsylvania
Reported September 2010: Calendar 2009

Contact	Ann Wolf
Mailing address	111 Ag Analytical Services Lab
Phone number	814-863-0841
FAX number	814-863-4540
e-mail address	Amw2@psu.edu
Website address	Aasl.psu.edu

Lab personnel FTE's: 10

Extractant(s): Mehlich 3; Mehlich buffer

Instrumentation: 2 Varion ES ICP; 2 Labfit pH analyzers; 2 N/C Elementar Vario Max Analyzers; 1 SEAL discrete analyzer; 2 Environmental Express Auto-Blocks; 1 Milestone Hg Analyzer;

Cost for routine test \$9.00

Routine test includes: pH, acidity, P, K, Ca, Mg, CEC (summation), base saturation; Cu, S, Zn (agro crops only-reported but no interpretations except for "typical" ranges in PA soils).

Sample Summary:

Category	Soil	SME	Plant	Compost	Manure	Biosolids	Water	Green roof media
Total Samples	39,000	180	6388	713	710	612	1,066	196
Commercial MM	24,591		1220					
Homeowner MM	14,409		-					
Research			5148					
Nitrate/PSNT	1397							
Misc – OM, Tex, SS, pH	5281 OM; 951 Particle Size; 565 Salts							
Cornstalk NO₃	2338							
Total N - Elementar	1662		3300	713	710	612		

Summary of Research:

Other/News:

Introduced pond water testing program in spring, 2010

NECC-1012 Annual State Report For Connecticut
Reported September 2010 for period: Calendar 2009

Contact	Thomas Morris	Dawn Pettinelli
Mailing address	1376 Storrs Rd U4067 Univ. of CT Storrs, CT 06269	UConn Soil Nutrient Analysis Lab 6 Sherman Place U5102 Storrs, CT 06269
Phone number	860.486.0637	860.486.4274
FAX number	860.486.0682	860.486.4562
e-mail address	THOMAS.MORRIS@UCONN.EDU	DAWN.PETTINELLI@UCONN.EDU
Website address	www.soiltest.uconn.edu	

Lab personnel FTE's: 2 ½ + student labor

Extractant(s): Modified Morgan for mineral soils, water for SME for greenhouse soils

Instrumentation: Spectro Ciros Vision ICP, segmented flow autoanalyzer with colorimeters for P, Scientific AC200 continuous flow analyzer for soil NO₃-N, nitrate electrode for tissue NO₃-N

Cost for routine test: \$8

Routine test includes: pH, Ca, Mg, K, P, Mn, Cu, Zn, Fe, Al, B, estimated total lead, hand texture and estimation of organic matter

Sample Summary:

Category	Soil	SME	Plant	Teaching
Total Samples	12993	66	2156	100
Commercial MM	1615			
Homeowner MM	8470			
Research	323		89	
Nitrate/PSNT	1209			
Misc – OM, Tex, SS, pH	1276			
Cornstalk NO₃			181	
Total N - Elementar	100		1882	

Summary of Research:

N fertilizer recommendations from stalk nitrate results and field history
Partial budget analysis of nutrient management plans
Yield response of second-year corn after alfalfa to N fertilizer
Background levels of lead in CT soils and lead in community gardens

Other/News:

Plant Tissue Analysis now offered

Rocky's Ace Hardware samples continue to pour in – more than 700 this year

Discrete analyzer purchased to replace autoanalyzer for ortho-P

Master Composter program developed and offered

New covered compost facility (10,000 sf) built by university for College to compost College's livestock manure: windrow system with self-propelled 16-foot wide turner and capability to incorporate liquid dairy manure into windrows; Capacity to handle about 50% of the College's livestock manure; Will sell some of the compost to meet requirements of NMP.

FYI: 10% of MM samples were agronomic, 71% home grounds (about 6 % increase), 4% commercial, 4% research and 11% miscellaneous.

P for silage corn: 67% above optimum

Lead – 15 % of est. lawn samples and 20.8% of homeowner fruits and vegetable samples above background level.

NECC-1012 Annual State Report For Rutgers/NJAES Soil Testing Laboratory

Reported September 2010 for Period: July 1 2009 – June 30 2010

Contact	Stephanie Murphy
Mailing address	ASB-II, Cook Campus 57 US Highway 1 New Brunswick, NJ 08901
Phone number	732-932-9295
FAX number	732-932-9292
e-mail address	soilslab@aesop.rutgers.edu
Website address	Njaes.rutgers.edu/soiltestinglab

Lab personnel FTE's: 3.75

Extractant(s): Mehlich-3

Instrumentation: Thermo DCP until June 2010; Thermo ICP

Cost for routine test \$20

Routine test includes: pH, Adams-Evans buffer pH, P, K, Ca, Mg, Cu, Mn, Zn, B, Fe, recommendations

Sample Summary:

Category	Soil	SME	Plant	Teaching
Total Samples	7261			
Homeowner	2662			
Commercial – Landscape	1097			
Commercial – Farm	753			
Rutgers Research	702			
Nitrate/PSNT				
Organic Matter				
Lead screening				

Summary of Research:

Heckman

- 1) Forage Yield Responses to Calcium Carbonate and Calcium Silicate Liming Materials
- 2) Soil Organic Carbon Levels Under Pasture versus Row Crops
- 3) Tomato Flavor and Quality as Influenced by Salt Fertilizer
- 4) Organic Corn and Soybean Production
- 5) New publication:
Provance-Bowley, M., J.R. Heckman, and E.F. Durner. 2010. Calcium silicate suppresses powdery mildew and increases yield of field grown wheat. *Soil Science Society America Journal*. 74:1652-1661.

Murphy

- 1) Equine manure/compost effect on soil properties
- 2) CO₂ microburst (soil respiration) correlation with organic matter, etc.
- 3) Review of literature on soil disturbance for NJDA Ag Development Committee

Other/News:

NJ Flood hazard management rules requires acid-producing soil test

NJAES brought in consultant for review/recommendations. Implementation has begun.

Drying ovens

June 2010 – new ThermoElectron ICP

Database development

NJ-wide legislative bills: Fertilizer regulation; Soil restoration

NEC-1012 Annual State Report for Maine
reported October, 2010
(sample numbers for calendar 2009)

Contact: Bruce Hoskins
Address: 5722 Deering Hall
Orono ME 04469

Voice: 207-581-2945

Fax: 207-581-3597

Email: hoskins@maine.edu

Web site: anlab.umesci.maine.edu

Lab personnel FTE's: 4 technical, 2 professional, 1 computer/administrative

Extractant(s): modified Morgan (ME, VT); Morgan (NY); NH₄Cl (forest soils)

Instrumentation: TJA Iris & TJA model 975 ICP's, OI Analytic & Lachat Ion Analyzers, Labfit pH system, Elementar Variomax & Leco CN-2000 combustion analyzers, Dionex ICS-1000 Ion chromatograph, Labconco macro-Kjeldahl, CEM MDS-2100 microwave system, PE FIMS-100 Hg analyzer

Cost for routine test: \$15 (\$10 during winter), \$22 with NH₄/NO₃ (Comprehensive test)

Routine test includes: pH,LR (mod Mehlich), OM, P, K, Mg, Ca, S, B, Cu, Fe, Mn, Zn; Na, Pb screen

Sample Number Summary (for calendar 2009)

	Soil	Plant	Manure	Compost	Metals	Other	Prepped for instrument
Commercial	4565	860	125	100	680	180	2200 ICP
Homeowner	4045					(fertilizer)	2650 NH ₄ /NO ₃
Research	650	1590	25	15	80		
NO ₃ /PSNT		1100 pet.					2350 TN/TC
Other	1150 forest						

Summary of Research

Organic cereal grain/bread wheat production.

Long-term potato cropping system experiment.

Comparison of organic vs conventional potato production systems on soil quality.

Paired watershed manipulations (acidification) in forest ecosystems (ongoing)

News/Other

Lab transitioning to full self-support within the next 3 years.

Phasing out deep discounts for Exp.Sta. research samples - many old programs to be discontinued.

Steady or increased commercial sample numbers - garden samples now make up 30 % sample load.

Added Morgan soil testing line (Cornell methods), due to increasing demand from NY State.

Subcontracting from 5 private labs (combustion, lime, fertilizer methods)