

Duration: 10/01/2023 to 09/30/2028

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Statement of Issues and Justification

The Northeast Coordinating Committee on Soil Testing (NECC-1812) works to ensure that soil testing, plant analysis and waste/residual analysis are properly used and interpreted within our region to support sustainable, economic, and environmental resource management for all who live in the region. The diversity of our region in terms of soils, climate, land use and demographics requires an approach that is appropriate for our needs rather than just adopting an approach “as-is” from elsewhere. Traditional agriculture continues to be practiced throughout the region. Alternative agricultural systems, such as high tunnel production, organic production, and new niche crops (e.g., malting barley, hemp), continue to expand.

Increased urbanization has also led to an increase in home gardening, urban landscapes, and urban farms. Soil “health” as opposed to soil “fertility” – and the questions on how to evaluate it and what those evaluations mean – continue to receive an increased level of interest in the Northeast and elsewhere.

All these changes, combined with the increased recognition of the role of proper nutrient management in environmental and economic sustainability, require that this committee remain actively engaged in efforts to support our clientele. Those efforts will include research to evaluate and update nutrient recommendations for old crops, new crops or new production systems, the development and/or modification of testing protocols for new uses, or the interpretation of test results and development of recommendations for alternative land uses.

While demand for our efforts continues to grow, staffing at the land grant universities in our region continues to shrink. This situation, therefore, requires a collaborative approach to make the best use of the expertise available. No one institution has all the resources necessary to address emergent and on-going concerns; however, using a team approach across institutions, we can leverage expertise in our region to meet our clients’ needs. Our committee has a history of successful multi-state regional research and outreach efforts based on ideas and discussion that originated from the committee. For example, collaborative research on nitrogen and potassium response of high tunnel tomatoes in New England was instrumental in producing a New England High Tunnel Production fact sheet, with yield-dependent recommendation tables. Similarly, cooperators from Maryland have led field research designed to guide production of hemp in the Mid-Atlantic US. Committee members have also collaborated to share information for a homeowner audience on topics such as soil testing, management of raised beds, and soil lead contamination. We plan to continue with collaborative initiatives as we move forward to address emergent problems, especially those being observed in multiple states. This type of “team effort” helps to improve credibility, as regional recommendations developed by the committee do not change at “state lines” but

rather at the natural boundaries where they should (e.g., where soil changes dictate). Exploring relations with others at our host institutions in the areas of horticulture and extension will enable the committee to better address soil testing and fertility issues in agronomic systems, as well as in areas that need our expertise, but which have fallen outside the traditional “agronomic” emphasis. These areas include (but are not limited to) urban food production, ornamental production, and lawn and landscape management – which increasingly fall under nutrient management regulation.

Meeting the needs of our stakeholders – the growers, the landscapers, the homeowners, the regulators we advise – first requires the sharing of information among ourselves at our annual meetings where evaluations and discussions may focus on methods, instrumentation, field research, local, regional and national issues, and much more. Contributions to the field include evaluation and vetting of new methods being proposed for adoption in our national proficiency testing programs (e.g., NAPT and ALP) and by commercial laboratories serving our region to ensure they are appropriate for use in the Northeast region. Stakeholder outreach included the maintenance of our regional soil testing methods reference manual, development of regional fact sheets on topics of importance in all or parts of the northeast, and designing, implementing, and disseminating results of regional research. Collaborative work with other regional research committees contribute to activities and publications such as the national manure testing manual. Committee members also continue to provide talks at local, regional, and national meetings and training programs on a variety of these topics. At a time when there is much conflicting information available to our stakeholders, it is critical that unbiased, science-based information is researched and made available by committees such as NECC-1812.

Objectives

1. To improve, standardize, and validate soil, plant, and waste analysis methods used within the Northeastern region of the US.
2. To improve crop nutrient recommendations based on soil, plant, and waste analysis results, crop management factors, and environmental sustainability.
3. To provide a forum for discussing and responding to challenges facing soil testing and nutrient management efforts.
4. To support Extension efforts in soil testing, nutrient management, and related environmental issues.
5. To serve as an educational resource on the appropriate use and interpretation of soil, plant and waste analysis for the general public, environmental and nutrient management regulators, and the commercial testing industry.

Procedures and Activities

The Committee will include members from the regional land-grant universities with expertise in soil testing, plant and waste analysis, and soil fertility and nutrient management. The Committee will strive to achieve its objectives by:

1. Meeting annually to discuss advances in soil, plant and waste analysis methods, laboratory instrumentation and data management, nutrient management techniques, issues and policies, and the relevant research and Extension efforts occurring in each state within the region.

2. Pursuing cooperative research efforts among the participants in the areas of soil testing methodology, soil fertility and field calibration, and nutrient management.
3. Sharing all soil test correlation and calibration data among all members on an ongoing basis.
4. Holding discussions by conference call or e-mail at other times during the year, on issues of immediate importance within the region and serving as a collective resource for all members.
5. Providing and updating a Committee website as the primary means of improving access to regional soil testing and nutrient management information by others outside the committee.
6. Interacting with other soil testing and nutrient management communities to promote cooperative efforts on a national scale by meeting jointly every four years with the other regional workgroups, including NCERA-13, SERA-IEG-6, and WC-103. Members also participate in other groups such as MASTPAWG, SERA-17, FRST, NECC-2103, SPAC, SSSA, ASA and CSA.
7. The workgroup holds a voting seat on the Oversight Committee of the North American Proficiency Testing Program for Agricultural Laboratories (NAPT). One member is elected to a 3-year term.

Expected Outcomes and Impacts

- Collaboration and regional participation on Fertilizer Recommendation Support Tool (FRST) projects to update and enhance nutrient and liming recommendations. Over the next five years the Northeast region will contribute data for least 50 site-years from soil test correlation field trials.
- Evaluation of the Moore/Sikora Buffer, Mehlich Buffer and Direct Titration methods as replacements for the Adams/Evans buffer. Replacement of the Adams/Evans will reduce the hazardous waste and improve laboratory safety. This work also has the potential to improve the precision and accuracy of lime recommendations throughout much of the region.
- Continued updating of Cooperative Bulletin No. 493 Recommended Soil Testing Methods for the Northeastern United States as new methods are developed and validated, and existing methods are revised or improved. The committee will specifically look to revise the soil pH and liming methods based on results of regional research to evaluate alternative lime requirement methods. A delineation of recommended test methods for high tunnel soils will also encourage more widespread adoption by commercial and University testing programs. Exchange of information on soil sulfur testing and sulfur recommendations.
- Exchange of information on compost testing and develop regional guidelines for interpretation of results and use of compost with an emphasis on avoiding the accumulation of excess phosphorus from application of compost to increase soil organic matter.
- Discussion of the philosophy, science, and regulation behind nutrient recommendations for turf in the region.
- Review of non-chemical fertilizer recommendations for certified organic farmers and gardeners and develop regional guidelines. This work should lead to more efficient use

of non-chemical fertilizers to reduce the potential risk for build-up of nutrients and nutrient losses in organically-managed soils.

- Review of existing soil test methods and recommendations for high tunnel production systems, with continued development and refinement of regional guidelines. The goal is to encourage more widespread adoption of methods that address soil fertility and soil health concerns specific to high tunnel production.
- Discussion, review, and evaluation of new and existing nitrogen management tools to move regional production systems toward better nitrogen management, thereby reducing nitrogen losses (atmospheric and to water) and improving the economics of nitrogen fertilizer use.
- Evaluate, validate, and develop interpretations for soil health/soil quality tests that are appropriate for and relevant to the soils and climate in our region with the goal of offering tests with meaningful interpretations to regional growers at the lowest cost possible.
- Discussion of approaches for testing and nutrient recommendations for potting mixes/raised beds, with possible development of uniform regional approach and fact sheets for home gardeners and urban farms.
- Evaluation of salinity test methods and interpretations for use on Northeast Region soils where saltwater intrusion is increasing with the goal of implementing low cost tests with meaningful interpretations that can be used to determine if land can be remediated or should be transitioned to other uses.
- Review of EC methodology, interpretation, and cross correlation with SME methods, as it applies to soil testing for high tunnel production with the goal of improving nutrient use efficiency, soil quality, and productivity of these systems.
- Development of a Committee website to include approved articles and relevant regional fact sheets and resources on soil metals analysis, plant tissue analysis, compost evaluation and use, and other topics not included in routine soil fertility testing.

Projected Participation

[View Appendix E: Participation](#)

Educational Plan

The committee will update and maintain Cooperative Bulletin No. 493 to serve as primary reference and an educational guideline for laboratories serving the region.

Committee members will provide educational presentations at national, regional, and local meetings to communicate new and existing test methods, as well as nutrient management philosophies and tools to all stakeholders in the region.

Regional factsheets will be prepared as a means of disseminating information to various groups including Extension educators, regional laboratories (public and private), commercial growers, commercial landscapers, and/or homeowners.

Organization/Governance



The committee is governed by a Committee Chair and a Secretary selected on a rotational basis from the participating states. A new secretary is selected at the end of the annual meeting at which point the current Secretary becomes Committee Chair for the next 12 months. The Committee Chair is responsible for organizing the annual meeting and planning the agenda. The Secretary records the minutes at the meeting for which he/she is Secretary.

Administrative guidance is provided by an assigned Administrative Advisor and a NIFA Representative.

Literature Cited

NECC-1012, 2011. Recommended Soil Testing Procedures for the Northeastern United States. 3rd Edition. Northeastern Reg. Bull. No 493. Univ. of Del., Newark, DE.
<http://extension.udel.edu/lawngarden/1864-2/lawn-garden/soil-health-composting/recommended-soil-testing-procedures-for-the-northeastern-united-states/>.

Attachments

Land Grant Participating States/Institutions

CT, DE, MD, MA, ME, NH, NJ, NY, PA, RI, VT, WV

Non-Land Grant Participating States/Institutions

Not applicable