

Minutes

Mid-Atlantic Soil Test Work Group

February 17-18, 1982

Richmond, VA

Chairman Donohue called the meeting to order at 8:45 am. A list of those attending is attached. Topics to be discussed were:

1. Soil and Plant Sample Exchange
2. Lime Recommendations - Review
3. Plant Tissue Analyses:
 - a. Laboratory procedures
 - b. Interpretation
4. New Laboratory Procedures, Techniques
5. Update on N, P, K, S, Trace Elements
6. New Items of Interest

Soil Sample Exchange.

Charles Mitchell, chairman of the Sample Exchange Committee, passed out a handout containing the results of the 1982 exchange. After discussing the results, the following individuals had comments regarding the results of the exchange:

Al Hatfield (NC) - had to give up the use of dichromate for determining organic matter. Is now using humic acid (wet oxidation). Correlation of the humic acid procedure with the dichromate procedure was 0.9. Remarking on the organic matter results from the exchange, Al mentioned the large differences in organic matter values reported.

Gordon Minor (NC) - commented on the value of reporting laboratory results on a relative value basis.

Dr. Mehlich (NC) - we should be trying to understand why there are differences in the test values so that we maybe able to develop more uniformity in test results.

Steve Hodges (SC) - since laboratories are using similar chemical procedures, should be getting values more in agreement.

Allan Bandel (MD) - would be worthwhile exchanging samples again.

Dr. Mehlich (NC) - would help to give specifics for running the individual procedures.

Steve Donohue (VA) - may want to consider comparing present exchange results with older exchanges to identify trends in test results.

Leo Cotnoir (Del) - Delaware will be glad to assume responsibility for sample exchange for 1982.

Delaware will conduct soil and plant sample exchange for 1982-83. Leo Cotnoir and Dave Parker will prepare and send out samples.

Lime Recommendation Review.

Steve Donohue handed out results of the Lime Comparison Study that was conducted in 1979. After a discussion, Steve Hodges presented his research findings on lime requirement tests including titratable acidity. Discussion followed.

Dr. Mehlich indicated that he was modifying his buffer. Those interested in more information should contact Dr. Mehlich.

Plant Analysis.

Results of the comparison between laboratories on plant analysis procedures and interpretation of test results are attached at the end of the minutes. In general, interpretation of test results (i.e., critical or optimum nutrient level) was very similar between laboratories.

New Laboratory Procedures, Techniques.

South Carolina - is now extracting both zinc and manganese with the Mehlich I procedure. Using the saturated soil extract procedure for soilless mixes. In addition to plant tissue analysis, they are analyzing feed and forage samples, and also are performing nematode assay. Indicated they are having problems with phosphorus determination on P.E.I.C.P. using ammonium molybdate.

North Carolina - now analyzing manure samples.

A & L - are using mailing cartons and information sheets for manure samples similar to Penn State's. Are using Agway data on nitrogen loss from surface application of cattle manure.

North Carolina - the Charlotte supply of thimble scoops has been lost. Are working on a new source in Raleigh.

South Carolina - Steve Hodges is working on boron sorption in soils.

Agrico - running 111 samples/hour with their ICP.

New Jersey - running 120 samples/hour with their new auto analyzer (II). Has automatic readout. Analyzing for P, K, Ca, Mg. Are using atomic absorption for zinc, manganese, iron.

N, P, K, S, Trace Element Update.

North Carolina - at greater than 120 index P (144 mg/dm^3), they go to 0 lbs of P/acre recommended for tobacco. Have found no response of tobacco to phosphorus at greater than 40 mg/dm^3 . Are not making grade recommendations on tobacco. Do not recommend less than 120

lbs of K_2O /acre. Have found no response to K at high test levels but will get² improvement in burn. If more K_2O than 120 lbs/acre needed, sidedress the extra. Sidedress applications of N are needed. Found that ammonium isn't quite so bad. Ammonium nitrate is ok for sidedressing. Gerald Peedin is the source of the work on ammonium nitrate.

Delaware - can we modify rates of phosphorus based on method of application?

North Carolina (Dr. Mehlich) - with the new Mehlich III procedure 5 mg/dm³ of P and 20 mg/dm³ of K are the levels where plants cease to take up P and K. At 30 mg/dm³ of P, no P is needed. For container-grown mixes, increase this value by a factor of 5 to 10.

Dr. Mehlich found zinc toxicity at levels of 10-15 ppm double acid extractable zinc. Gordon Minor found that at less than 10% magnesium saturation, magnesium deficiency occurred into tobacco. Also, the manganese soil test for soybeans has been recalibrated.

Maryland - is going to a charge for boron, zinc and maganese when running these tests as a prerequisite to sludge application on land. Cost will be \$3.00 each.

New Jersey - Roy Flannery will send each member a copy of his 1981 results on maximum corn yields.

South Carolina - is running sulphate-sulfur on subsoil using ammonium acetate as the extractant. At greater than 20 ppm, no sulfur needed.

Next Meeting.

Topics were discussed for next year's meeting. Steve Donohue will send out a list of suggested topics for next year's meeting and, based on the response from the group, will include the most popular topics on the agenda for the next meeting. Date for the next meeting is February 23-24, 1983 in Richmond.

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