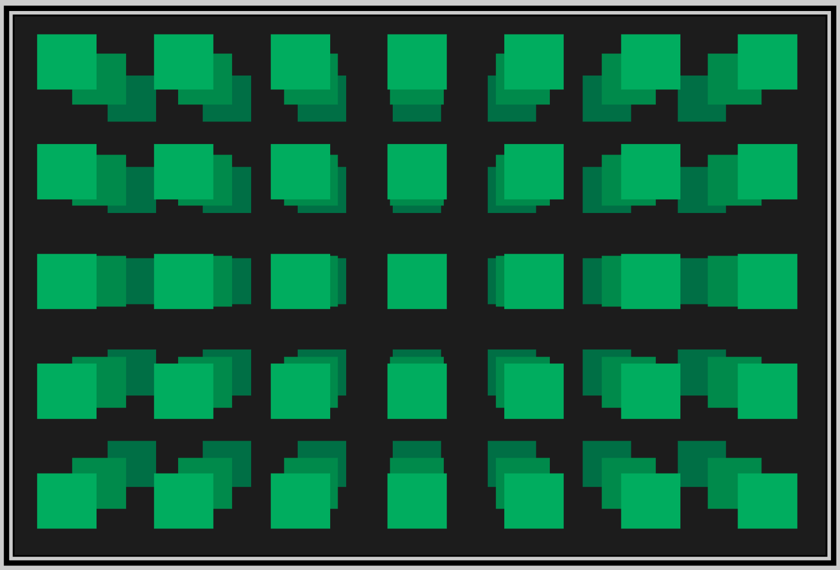
A Comparative Summary of the Standard Mehlich 3 Soil Test with a Modified Mehlich 3 Dilution Ratio Procedure



W.H. Baker, C.G. Herron, S.D. Carroll,
M.A. Henslee, D.C. Lafex, and E.E. Evans

ARKANSAS AGRICULTURAL EXPERIMENT STATION

Division of Agriculture | University of Arkansas

January 2002 | Special Report 205

This publication is published on the web only at: http://www.uark.edu/depts/agripub/Publications/specialreports/

Editing and cover design by Cam Romund

Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville. Milo J. Shult, Vice President for Agriculture and Director; Gregory J. Weidemann, interim dean, Dale Bumpers College of Agricultural, Food and Life Sciences and associate director, Arkansas Agricultural Experiment Station, Fayetteville. WebQX41. The University of Arkansas Division of Agriculture follows a nondiscriminatory policy in programs and employment.
ISSN: 0571-0189 CODEN:AUARAN

CONTENTS

ABSTRACT……………………………………………………………………………………………1

INTRODUCTION………………………………………………………………………………………1

MATERIALS AND METHODS………………………………………………………………………2

RESULTS AND DISCUSSION………………………………………………………………………3
Explanation of the Graphs for Each Nutrient…………………………………………………3
Accuracy and Precision……………………………………………………………………………3
Correlation Between the Dilution Ratio Procedures……………………………………………3
Average Differences Between the Dilution Ratio Procedures……………………………………4
Extractable Nutrient Levels and Soil pH Relationships……………………………………………4

CONCLUSIONS……………………………………………………………………………………5

LITERATURE CITED………………………………………………………………………………5

APPENDIX…………………………………………………………………………………………5
APPENDIX A:
Table 2..................................1-6
Figures 1&2..........................7
Figures 3&4..........................8
Figures 5&6..........................9
Figures 7&8........................10
Figures 9&10......................11
Figure 11............................12
Figures 12&13....................13
Figures 14&15....................14
Figures 16&17....................15
Figures 18&19....................16
Figures 20&21....................17
Figure 22............................18
Figures 23&24....................19
Figures 25&26....................20
Figures 27&28....................21

A Comparative Summary of the Standard Mehlich 3 Soil Test with a Modified Mehlich 3 Dilution Ratio Procedure

W.H. Baker, C.G. Herron,[1] S.D. Carroll,
M.A. Henslee, D.C. Lafex, and E.E. Evans

ABSTRACT

The Arkansas soil-testing program currently uses the Mehlich soil extraction procedure with a modified soil-to-extraction-solution dilution ratio of 1:7 instead of the standard 1:10 dilution. This study was performed in order to facilitate the decision process for making a conversion from the 1:7 ratio method to the 1:10 ratio method. Four hundred seventy-one soils used in this evaluation were selected to represent the major agricultural production areas in the Arkansas Delta. Each soil sample was extracted with Mehlich 3 solution at a dilution ratio of 1:7 and 1:10. The extraction solutions were then analyzed for the major soil nutrients included on routine soil test reports. Analytical results from each extraction dilution were compared for each soil nutrient. Differences were noted and assessed for any significance that might affect the current fertilizer recommendation break points and equations. Phosphorus was the only soil nutrient that indicated a need for fertilizer break-point adjustments if the extraction method is converted from 1:7 to the standard 1:10 dilution ratio. Phosphorus levels were indicated to be significantly elevated with an average difference of +32 lb/A more P in the 1:10 extraction solution than in the 1:7 extraction solution.

INTRODUCTION

Analytical procedures used for routine soil testing attempt to estimate the amount of soil nutrients available to the plant during its growing season. While soil fertility is an important component of crop production, most of the production expenses associated with crop nutrition are low when contrasted with the total cost of production. Therefore, the costs for a specific soil test method must be relatively low for an analysis to be of any practical use. The best way to achieve this is to capture as many analyses as possible using a minimum of procedures. The Mehlich 3 extractant (M3) was developed as an attempt to accommodate as many important plant nutrients as possible in a single extraction (Mehlich, 1984). Many laboratories have purchased simultaneous inductively coupled spectrophotometers (ICP), and have incorporated M3 into their soil testing program to take advantage of this more economical single-extraction procedure (Wolf and Baker, 1985). This was certainly one reason for the use of the M3 extractant considered by the University of Arkansas Soil Test Laboratory.

The M3 extractant was first considered for use by the Arkansas Soil Test Laboratory in 1985. The University of Arkansas Soil Test Laboratory was one of the first soil testing facilities in the nation to incorporate a simultaneous ICP into their soil testing program. With this shift in new instrumentation came the need for a new multi-element extractant to take advantage of the ICP capabilities. However, it was noted that the standard method for M3 was using a 1:10 soil-to-extraction-solution dilution ratio that did not match up to the existing Bray P1 analysis for P (Richard Maples, personal communication, 1990; Donahue, 1983). A series of soil analyses was performed at different dilution ratios by the University of Arkansas Soil Test Laboratory using the M3 (unpublished data) method. It was found that a 1:7 dilution ratio agreed closely with the previous critical levels for

[1]Soil Testing and Research Laboratory, Department of Crop, Soil and Environmental Sciences, University of Arkansas, Marianna, AR 72360. Corresponding author (email: cherro@uark.edu)

nutrients used for making fertilizer recommendations. The decision was made to modify the M3 method from the standard 1:10 dilution ratio to a 1:7 dilution ratio so that soil test P values remained virtually unchanged between methods. This kept the transition to the new M3 extractant and the new ICP instrumentation as straightforward as possible for growers and consultants. Over the last 15 years this modified method has served the needs of Arkansas farmers well.

With the acceptance of precision agriculture technologies, soil samples are being used to produce site specific maps of the fertility status of production fields. In addition, the information obtained from soil samples is being stored in long-term databases. The new emphasis on geo-encoded soils data has shifted the action from fertilizer recommendations to the analytical output. When the decision was based primarily on the fertilizer recommendation, the analytical value could afford to be different due to different methods or modifications to a method. Methods and their results could vary, but the research-based correlation and calibration database would produce similar recommendations across methods.

This work was put forward as a basis for developing new soil-test action level points based on analyses using the standard M3 1:10 dilution ratio. The specific reasons for this research are:

1. Part of the Arkansas Soil Testing Lab quality control and assurance "good lab" practices involves participation in the American Society of Agronomy North American Proficiency program (Miller and Wolf, 1998). This program only accommodates the unmodified 1:10 M3 extraction method. Proficiency testing causes the University of Arkansas Soil Test Lab to abruptly change the routine process from a 1:7 to a 1:10 dilution. Use of an altered M3 method does not meet the true intent of proficiency-testing quality control performance evaluations.
2. When clients switch or compare analytical results between the University of Arkansas Soil Test Lab and other nearby private or public labs, they are, in effect, comparing data from two different systems and causing their interpretation of the data to possibly be in error, depending on the nutrient and its concentration range, because of this dilution ratio difference. Most clients are not aware of the difference in the M3 method used by Arkansas (1:7 ratio) and the standard M3 method used by other labs (1:10 ratio). Normally, this would not be a noteworthy problem because the analytical result is calibrated to a soil test range that is converted into a fertilizer recommendation. However, most individuals who are collecting geo-encoded soil samples are using Geographic Information System (GIS) mapping packages to make field assessments and produce their own GIS-based recommendations for fertilizer from the lab analyses.

The objective of this work was to provide a correlation of M3 nutrient extraction analyses performed at dilution ratios of 1:7 and 1:10. This information has been developed in order to assist research and extension crop specialists in the task of assessing the appropriate change that should be made to nutrient action levels (break points) for fertilizer recommendations should the University of Arkansas Soil Test Lab convert to the standard 1:10 M3 dilution ratio. This work was biased toward soils representing the major crops in the Arkansas Delta agronomic region. The focal point of the analytical results was in the upper-medium to low nutrient concentration ranges, which contain the nutrient action levels that are the most significant for making fertilizer recommendation decisions.

MATERIALS AND METHODS

<u>Reagents</u>

The Mehlich 3 extractant is a combination of the following reagents:

0.2N CH3COOH – 0.25N NH4NO3 – 0.015N NH4F – 0.013N HNO3 – 0.001M EDTA

R1 Ammonium Nitrate (NH4NO3) fw 80.05 g,
R2 Ammonium Fluoride (NH4F) fw 37.04 g,
R3 Acetic Acid, Glacial (CH3.COOH) 99.5%, fw 60.04g, 17.4N,
R4 Nitric Acid (HNO3) 68-70%, fw 63.02 g, 15.5N,
R5 Ethylenediaminetetraacetic Acid (EDTA) (HOOCCH2)2 NCH2CH2N (CH2COOH)2 fw 292.24 g.

Stock M3 Solution (3.75M NH4F – 0.25M EDTA)

A calibrated 2 L volumetric flask was used to add 1200 mL of de-ionized water to 277.8 g of R2 (NH4F). Then, 146.1 g of R5 (EDTA) were added and dissolved. The volume was brought to 2 L with de-ionized water, mixed thoroughly and stored in a sealed plastic container.

Extractant M3 Solution

An 18 L calibrated plastic carboy was used to dissolve 360 g of R1 (NH4NO3) in 14.4 L of de-ionized water. To this, 72 mL of Stock M3 (NH4F-EDTA) were poured and mixed. Then, 207 mL of R3 (Acetic Acid) and 14.76 mL of R4 (HNO3) were added. The solution was brought to 18 L with de-ionized water and mixed thoroughly. The pH of the extractant solution was in the prescribed range of 2.5+ 0.1 pH units.

Extraction, 1:10 V/V Ratio

Soil samples were measured 2.0 cm3 (dried and screened < 2 mm) into 70 mL plastic extraction cups. M3 extractant, 20 mL, was then added and placed in a reciprocating shaker for 5 min (200, 4 cm, oscillations min-1). The extractant was filtered through a medium porosity filter paper (Schleicher & Schuell pre-folded 11 cm grade #1 filter paper).

Extraction, 1:7 V/V Ratio

This same procedure as the 1:10 extraction procedure above was repeated using a 2.0 cm3 volume of soil and 14 mL of the M3 extractant.

Analytical Instrumentation

A Spectro Flame ICP (Spectro Analytical Instruments, 160 Authority Drive, Fitchburg, MA 01420) was used to analyze the extractions from the soil samples. The soils were analyzed for M3 extractable potassium (K), calcium (Ca), sodium (Na), magnesium (Mg), iron (Fe), manganese (Mn), copper (Cu), zinc (Zn), boron (B), sulfur (S), and phosphorus (P). Analytical performance of the ICP for the M3 method is summarized in Table 1.

Soils Selected for the Summary

A representation of soil from the Arkansas Delta was studied that exhibited a range of soil associations, soil textures, and agronomic crops. Farmers, in conjunction with the local county agent, provided the soil associations, soil textures, and agronomic crop information. Lawns, gardens, and any other soils not associated with agronomic crops were omitted from this study. A collection of 471 soil samples was obtained for this review. Additional information for these soils is summarized in Table 2 in the Appendix.

RESULTS AND DISCUSSION

Explanation of the Graphs for Each Nutrient

The results for each nutrient are illustrated as a function of the M3 [1:7] nutrient concentrations on the x-axis and the M3 [1:10] nutrient concentrations on the y-axis. A best-fit least-square equation for a linear function was computed along with its respective correlation coefficient.

The same data were illustrated in a different manner as a second graph of the difference between the M3 extractant concentrations at the 1:10 dilution ratio and the 1:7 dilution ratio. The difference ([1:10] – [1:7]) was plotted on the y-axis for each sample (observation) on the x-axis. The mean of all the differences is also plotted across observations as a single line on the graph. The units for the M3 extractable nutrients are in pounds per acre (lb/A).

Accuracy and Precision

Possible bias in the analytical results of the nutrients examined was evaluated based on a determination of accuracy and precision (Table 1). Except for Na, results for the determination of instrument accuracy did not indicate major deviations that would need to be factored into the assessment of an element. The same was true for repeatability or precision. Sodium, with a negative value of 13 lb/A at the high range of the analysis spectrum, was suggested to need a correction factor to account for ICP bias.

Correlation Between the Dilution Ratio Procedures

The major cations (K, Ca, Na, and Mg) were all well correlated between the two dilution ratio procedures based on a linear function (Figs.1-4). The slopes for these cations are all very near to unity with y-intercepts that drive toward zero within acceptable analytical tolerances for the objectives of the extraction procedure. The linear correlations for Fe and Mn were good, but the agreement between the 1:10 and 1:7 dilution ratios was positively skewed for both elements (Figs. 5 and 6). The correlations for Cu, Zn, S, and P were also found to agree well (Figs. 7, 8, 10, and 11). Boron was found to have the poorest correlation, which was expected since the extractable levels of this element in soil are

Table 1. Mehlich 3 extractable elements and ICP instrument performance.

Element	Atomic number	Emission wave length nm	Emission line order	Detection[1] limit lbs/A	Accuracy[2] Low QC lbs/A	Accuracy[2] High QC lbs/A	Precision[3] (Std. Dev.) lbs/A
K	19	766.491	1	1.9419	+1.0	-1.7	8.4
Ca	20	317.933	1	0.3807	+2.8	+3.4	94.2
Na	11	588.995	1	0.9747	-1.6	-13.5	11.9
Mg	12	279.079	1	0.0564	+0.5	-0.4	12.0
Fe	26	259.940	1	0.1269	+0.3	+1.0	8.8
Mn	25	257.610	1	0.0453	+0.5	+0.9	16.4
Cu	29	324.754	1	0.1140	+0.1	-0.2	0.43
Zn	30	213.856	1	0.0285	+1.2	+1.4	0.89
B	5	249.678	1	0.4971	-0.6	-3.8	0.32
S	16	182.040	1	0.7032	+1.2	-0.7	2.8
P	15	178.290	1	0.3072	+0.1	+0.3	1.5

[1]Element detection limits were obtained from the calculation of 3 times the standard deviation of the blank reading analysis from 20 repeated measurements.

[2]Element accuracies were obtained from the analysis of the first two low-quality control solution standards (qc) and the first two high-qc standards for each month for fiscal year 1997. The low-qc solution was 17.5 lbs/A for K, Ca, Na, Mg, Fe, Mn, S, P and 3.5 lb/A for Cu, Zn and 0.7 lb/A for B. The high-qc solution was 175.0 lbs/A for K, Ca, Na, Mg, Fe, Mn, S, P and 35.0 lb/A for Cu, Zn and 7.0 lb/A for B.

[3]Element precision assessment was obtained from the standard deviation of the mean of analyses of check-soil container number 374 according to procedure outlined in Section C of UA Soil Test Lab Quality Control and Assurance Manual from April 19, 1999 to April 21, 1999.

very near the analytical capabilities for an emission ICP (Table 1) (Fig. 9).

Average Differences Between the Dilution Ratio Procedures

The element differences between the analytical value of a soil sample for the 1:7 dilution ratio subtracted from the value of the same sample for a 1:10 ratio are presented in Figures 12 through 22. For each element, the mean differences across all the observations are given. The means of the differences between the two extraction ratios indicated the 1:10 ratio to extract more nutrient in all cases except for B. For final assessment purposes, the mean differences for the extractable nutrients would appear to provide a good basis for making adjustments from a 1:7 value to a 1:10 value. While most of the action levels using values from the 1:7 M3 method would need to be increased for all elements, P was the only nutrient that was indicated to have the greatest relative discrepancy with a mean difference of 32 lb/A.

Extractable Nutrient Levels and Soil pH Relationships

Recent work has lead to the modification of the Arkansas Cooperative Extension Service position on P fertility in rice (Chapman, 2000). The new P fertilizer recommendations for rice now consider soil pH in the decision scheme. Because of the dependence of the P fertilizer recommendation for rice on soil pH, the relationships of selected extractable M3 soil nutrients as a function of the 1:2 soil pH were also examined (Figs. 23 through 28). Only a minor increasing relationship was noted for extractable Ca and soil pH (Fig. 23). Extractable Fe indicated a decreasing availability with soil pH that was poorly correlated (Fig. 24). No relationship with soil pH was observed for M3 extractable Mn, Zn, and B (Figs. 25 through 27). As with the other nutrients, extractable soil P was also found not to possess any significant correlation with soil pH (Fig. 28). Since the M3 extractant is an acidic solution, it was not unexpected that the relationship between soil pH and the amount of extractable nutrient was indistinct due to the dissolution of various solid-phase soluble mineral carbonates present in the soil.

CONCLUSIONS

All of the extractable nutrients except for B appeared to have a good linear correlation between samples extracted at a 1:10 dilution and a 1:7 dilution ratio. No real significance was attributed to the extractable nutrients when examined as a function of sand, silt and clay. The best method of assessing the data appeared to be the utilization of the mean of the differences between the values for the 1:10 ratio subtracted from the 1:7 ratio. These mean differences were positive for all nutrients except for B. Thus, on the average, the 1:10 dilution ratio was found to extract more soil nutrient. In the case of B, the M3 extractable values are too close to the ICP detection limit to provide any solid conclusions.

LITERATURE CITED

Chapman, Stanley L. 2000. Soil test recommendation guide. University of Arkansas Cooperative Extension Service. Little Rock, AR.

Donahue, S. J. 1983. Determination of phosphorus by Bray P1 extraction. p. 20-24. Reference Soil Test Methods for the Southern Region of the United States. Southern Cooperative Series Bulletin 289. University of Georgia College of Agriculture Experiment Stations. Athens, GA.

Mehlich, A. 1984. Mehlich 3 soil test extractant: A modification of Mehlich 2 extractant. Commun. Soil Sci. Plant Anal. 15: 1409-1416.

Miller, R. O. and A. Wolf. 1998. Development of a North American Proficiency Testing program for soil and plant analysis. Commun. Soil Sci. Plant Anal. 29:1685-1690.

Wolf, A. and D. E. Baker. 1985. Comparisons of soil test phosphorus by Olsen, Bray P1, Mehlich I, and Mehlich III methods. Commun. Soil Sci. Plant Anal. 16: 467-484.

APPENDIX

Table 2. A summary of soil properties for the samples selected for this study.

Figure 1. Correlation between the M3 soil extraction for K at a 1:10 and a 1:7 dilution ratio.

Figure 2. Correlation between the M3 soil extraction for Ca at a 1:10 and a 1:7 dilution ratio.

Figure 3. Correlation between the M3 soil extraction for Na at a 1:10 and a 1:7 dilution ratio.

Figure 4. Correlation between the M3 soil extraction for Mg at a 1:10 and a 1:7 dilution ratio.

Figure 5. Correlation between the M3 soil extraction for Fe a 1:10 and a 1:7 dilution ratio.

Figure 6. Correlation between the M3 soil extraction for Mn at a 1:10 and a 1:7 dilution ratio.

Figure 7. Correlation between the M3 soil extraction for Cu at a 1:10 and a 1:7 dilution ratio.

Figure 8. Correlation between the M3 soil extraction for Zn at a 1:10 and a 1:7 dilution ratio.

Figure 9. Correlation between the M3 soil extraction for B at a 1:10 and a 1:7 dilution ratio.

Figure 10. Correlation between the M3 soil extraction for S at a 1:10 and a 1:7 dilution ratio.

Figure 11. Correlation between the M3 soil extraction for P at a 1:10 and a 1:7 dilution ratio.

Figure 12. Analytical differences between M3 soil K extracted at a 1:10 and a 1:7 dilution ratio.

Figure 13. Analytical differences between M3 soil Ca extracted at a 1:10 and a 1:7 dilution ratio.

Figure 14. Analytical difference between M3 soil Na extracted at a 1:10 and a 1:7 dilution ratio.

Figure 15. Analytical difference between M3 soil Mg extracted at a 1:10 and a 1:7 dilution ratio.

Figure 16. Analytical differences between M3 soil Fe extracted at a 1:10 and a 1:7 dilution ratio.

Figure 17. Analytical differences between M3 soil Mn extracted at a 1:10 and a 1:7 dilution ratio.

Figure 18. Analytical differences between M3 soil Cu extracted at a 1:10 and a 1:7 dilution ratio.

Figure 19. Analytical differences between M3 soil Zn extracted at a 1:10 and a 1:7 dilution ratio.

Figure 20. Analytical differences between M3 soil B extracted at a 1:10 and a 1:7 dilution ratio.

Figure 21. Analytical differences between M3 soil S extracted at a 1:10 and a 1:7 dilution ratio.

Figure 22. Analytical differences between M3 soil P extracted at a 1:10 and a 1:7 dilution ratio.

Figure 23. Relationship between soil pH and M3 extractable Ca.

Figure 24. Relationship between soil pH and M3 extractable Fe.

Figure 25. Relationship between soil pH and M3 extractable Mn.

Figure 26. Relationship between soil pH and M3 extractable Zn.

Figure 27. Relationship between soil pH and M3 extractable B.

Figure 28. Relationship between soil pH and M3 extractable P.

Appendix table and figures are in the following numbered PDF pages.

UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

APPENDIX A

Table 2. A Summary of soil properties for the samples selected for this study.

Observation	Location	County	Soil Associaton	Texture	Crop
1	Star City	Lincoln	Perry-Portland	Silt Loam	Cotton
2	Star City	Lincoln	Perry-Portland	Silt Loam	Cotton
3	Star City	Lincoln	Perry-Portland	Silt Loam	Cotton
4	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
5	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
6	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
7	Paragould	Greene	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/non-irrig.
8	Paragould	Greene	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
9	Paragould	Greene	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
10	Paragould	Greene	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
11	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
12	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
13	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
14	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
15	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
16	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
17	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
18	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
19	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
20	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
21	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
22	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
23	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
24	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
25	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
26	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
27	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
28	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
29	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
30	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
31	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
32	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
33	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
34	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
35	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
36	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
37	Pine Bluff	Jefferson	Rilla-Hebert	Clay Loam	Soybeans alone - Irrigated
38	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
39	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
40	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
41	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
42	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
43	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
44	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
45	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
46	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
47	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
48	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
49	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
50	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
51	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
52	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
53	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
54	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
55	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
56	0	Crittendon	Dundee-Bosket-Dubbs	Silt Loam	Cotton
57	0	Crittendon	Dundee-Bosket-Dubbs	Silt Loam	Cotton
58	0	Crittendon	Dundee-Bosket-Dubbs	Silt Loam	Cotton
59	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 225 bu. yield)-sandy or silt loams
60	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 225 bu. yield)-sandy or silt loams
61	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 225 bu. yield)-sandy or silt loams
62	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 225 bu. yield)-sandy or silt loams
63	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
64	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
65	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
66	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
67	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
68	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
69	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
70	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 200 bu. yield)-sandy or silt loams
71	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
72	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
73	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
74	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
75	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
76	Harrisburg	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Bengal
77	Piggott	Clay-Piggott	Calloway-Henry-Grenada-Calhoun	Silt Loam	Brambles (blackberries - raspberries)
78	Lonoke	Lonoke	Rilla-Hebert	Clay Loam	Soybeans alone - Non-irrigated
79	Lonoke	Lonoke	Rilla-Hebert	Silt Loam	Cotton
80	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
81	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew

Observation	Location	County	Soil Associaton	Texture	Crop
82	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
83	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
84	Carlisle	Lonoke	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
85	Carlisle	Lonoke	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
86	Carlisle	Lonoke	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
87	Carlisle	Lonoke	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
88	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
89	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
90	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
91	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
92	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
93	Holly Grove	Monroe	Dundee-Bosket-Dubbs	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
94	0	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
95	0	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
96	0	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
97	0	Poinsett	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
98	Taylor	Lafayette	Wrightsville-Louin-Acadia	Silt Loam	Soybeans alone - Non-irrigated
99	Osceola	Mississippi-Blythev	Commerce-Sharkey-Crevasse-Robinsonvil	Silt Loam	Cotton
100	Osceola	Mississippi-Blythev	Commerce-Sharkey-Crevasse-Robinsonvil	Silt Loam	Cotton
101	England	Lonoke	Perry-Portland	Clay Loam	Soybeans alone - Irrigated
102	England	Lonoke	Perry-Portland	Clay Loam	Soybeans alone - Irrigated
103	England	Lonoke	Perry-Portland	Clay Loam	Soybeans alone - Irrigated
104	England	Lonoke	Perry-Portland	Clay Loam	Soybeans alone - Irrigated
105	England	Lonoke	Perry-Portland	Clay Loam	Soybeans alone - Irrigated
106	Austin	Lonoke	Loring	Silt Loam	Blueberries - 4th year or older
107	Austin	Lonoke	Loring	Silt Loam	Blueberries - 4th year or older
108	Austin	Lonoke	Loring	Silt Loam	Blueberries - 4th year or older
109	Lonoke	Lonoke	Rilla-Hebert	Clay	Rice - Bengal
110	Lonoke	Lonoke	Rilla-Hebert	Sand	Rice - Bengal
111	Lonoke	Lonoke	Rilla-Hebert	Clay	Rice - Bengal
112	Lonoke	Lonoke	Crowley-Stuttgart	Silt Loam	Rice - Drew
113	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Oats for grain
114	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Oats for grain
115	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Oats for grain
116	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Oats for grain
117	Bartlett	Poinsett	Sharkey-Alligator-Tunica	Clay Loam	Soybeans alone - Irrigated
118	Bartlett	Poinsett	Sharkey-Alligator-Tunica	Silt Loam	Soybeans alone - Irrigated
119	England	Lonoke	Rilla-Hebert	Silt Loam	Soybeans alone - Irrigated
120	Lonoke	Lonoke	Crowley-Stuttgart	Silt Loam	Rice - Lagrue
121	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
122	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
123	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
124	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
125	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
126	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
127	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
128	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
129	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
130	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 160 bu/A yield)-clay loams, silty clays, clays
131	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 160 bu/A yield)-clay loams, silty clays, clays
132	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 160 bu/A yield)-clay loams, silty clays, clays
133	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 160 bu/A yield)-clay loams, silty clays, clays
134	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Corn for grain (up to 160 bu/A yield)-clay loams, silty clays, clays
135	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Cotton
136	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Cotton
137	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
138	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
139	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
140	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
141	Pine Bluff	Jefferson	Severn-Oklared	Silt Loam	Cotton
142	Hoxie	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Non-irrigated
143	Hoxie	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Non-irrigated
144	Hoxie	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Non-irrigated
145	Alicia	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Non-irrigated
146	Maumelle	Pulaski	Perry-Portland	Clay Loam	Cotton
147	Maumelle	Pulaski	Perry-Portland	Clay Loam	Cotton
148	Maumelle	Pulaski	Perry-Portland	Clay Loam	Cotton
149	Maumelle	Pulaski	Perry-Portland	Clay Loam	Cotton
150	Maumelle	Pulaski	Perry-Portland	Clay Loam	Cotton
151	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
152	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
153	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
154	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
155	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
156	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
157	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
158	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
159	0	Prairie-Des Arc	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
160	Des Arc	Prairie	Kobel	Clay Loam	Soybeans DBLCRP after wheat following any other crop - irrig.
161	Texarkana	Miller	Billyhaw-Perry	Silt Loam	Soybeans alone - Non-irrigated
162	Texarkana	Miller	Billyhaw-Perry	Silt Loam	Soybeans alone - Non-irrigated
163	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Cotton
164	Altheimer	Jefferson	Rilla-Hebert	Silt Loam	Cotton
165	Forrest City	St. Francis	Loring-Memphis	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams

Observation	Location	County	Soil Associaton	Texture	Crop
166	Paragould	Greene	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
167	Wynne	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
168	Wynne	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
169	Wynne	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
170	Wynne	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
171	Biscoe	Prairie	Dundee-Bosket-Dubbs	Silt Loam	Cotton
172	Biscoe	Prairie	Dundee-Bosket-Dubbs	Silt Loam	Cotton
173	Biscoe	Prairie	Dundee-Bosket-Dubbs	Silt Loam	Cotton
174	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
175	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
176	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
177	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
178	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
179	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
180	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
181	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
182	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
183	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
184	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
185	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
186	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
187	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
188	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
189	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
190	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
191	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
192	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
193	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
194	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
195	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
196	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
197	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
198	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
199	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
200	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
201	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
202	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
203	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
204	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
205	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
206	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
207	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
208	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
209	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
210	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
211	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
212	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
213	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
214	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
215	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
216	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
217	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
218	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
219	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
220	Lonoke	Lonoke	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Other varieties
221	Jacksonville	Lonoke	Perry-Portland	Clay Loam	Apple, peach, or plum trees - 3rd year or leaf
222	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
223	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
224	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
225	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
226	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
227	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
228	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
229	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
230	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Cotton
231	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
232	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
233	Turner	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
234	Holly Grove	Monroe	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/irrig.
235	Holly Grove	Monroe	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/irrig.
236	Holly Grove	Monroe	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/irrig.
237	Holly Grove	Monroe	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/irrig.
238	Holly Grove	Monroe	Calloway-Henry-Grenada-Calhoun	Silt Loam	Grain sorghum for grain alone or not DBCP with sm. grains/irrig.
239	0	Poinsett	Dundee-Bosket-Dubbs	Sand	Cotton
240	0	Poinsett	Dundee-Bosket-Dubbs	Sand	Cotton
241	0	Poinsett	Dundee-Bosket-Dubbs	Sand	Cotton
242	0	Poinsett	Dundee-Bosket-Dubbs	Sand	Cotton
243	Desha	Independence	Amagon-Dundee	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
244	Desha	Independence	Amagon-Dundee	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
245	Desha	Independence	Amagon-Dundee	Silt Loam	Soybeans DBLCRP after wheat/wheat follows sorghum, rice or corn
246	Desha	Independence	Amagon-Dundee	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
247	Batesville	Independence	Amagon-Dundee	Silt Loam	Soybeans DBLCRP after wheat/wheat follows sorghum, rice or corn
248	Batesville	Independence	Amagon-Dundee	Silt Loam	Soybeans DBLCRP after wheat/wheat follows sorghum, rice or corn
249	Dumas	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated

Observation	Location	County	Soil Associaton	Texture	Crop
250	Dumas	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
251	Dumas	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
252	Dumas	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
253	Keiser	Mississippi-Blythev	Amagon-Dundee	Clay	Cotton
254	Keiser	Mississippi-Blythev	Amagon-Dundee	Clay Loam	Cotton
255	Keiser	Mississippi-Blythev	Amagon-Dundee	Clay Loam	Cotton
256	Keiser	Mississippi-Blythev	Amagon-Dundee	Clay	Cotton
257	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
258	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
259	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Rice - Lagrue
260	Lake Village	Chicot	Commerce-Sharkey-Crevasse-Robinsonvil	Clay	Soybeans alone - Irrigated
261	Lake Village	Chicot	Commerce-Sharkey-Crevasse-Robinsonvil	Clay	Soybeans alone - Irrigated
262	Lake Village	Chicot	Commerce-Sharkey-Crevasse-Robinsonvil	Clay	Soybeans alone - Irrigated
263	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Rice - Cypress
264	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
265	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
266	Bradley	Lafayette	Severn-Oklared	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams
267	Bradley	Lafayette	Severn-Oklared	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams
268	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
269	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
270	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
271	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
272	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
273	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
274	Bradley	Lafayette	Severn-Oklared	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams
275	Bradley	Lafayette	Severn-Oklared	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams
276	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
277	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
278	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
279	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
280	Scott	Pulaski	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
281	Scott	Pulaski	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
282	Scott	Pulaski	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
283	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
284	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
285	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
286	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
287	Hamburg	Ashley	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
288	Joiner	Mississippi-Osceola	Commerce-Sharkey-Crevasse-Robinsonvil	Silt Loam	Cotton
289	Joiner	Mississippi-Osceola	Commerce-Sharkey-Crevasse-Robinsonvil	Silt Loam	Cotton
290	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
291	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
292	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
293	Batesville	Independence	Amagon-Dundee	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
294	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
295	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
296	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
297	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
298	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
299	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
300	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
301	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
302	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
303	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
304	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
305	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
306	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
307	Aubrey	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 175 bu. yield)-sandy or silt loams
308	Stuttgart	Arkansas-Stuttgart	Crowley-Stuttgart	Silt Loam	Pecan trees - 5th year or older (orchard)
309	Pollard	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
310	Pollard	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
311	Pollard	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
312	Pollard	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
313	Reyno	Lawrence	Foley-Jackport-Crowley	Sand	Soybeans alone - Irrigated
314	Oneida	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
315	Oneida	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
316	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
317	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
318	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
319	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
320	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
321	Bradley	Lafayette	Severn-Oklared	Silt Loam	Cotton
322	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
323	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
324	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
325	Bradley	Lafayette	Severn-Oklared	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
326	Brinkley	Lonoke	Foley-Jackport-Crowley	Silt Loam	Wheat for grain
327	McCrory	Woodruff	Dundee-Bosket-Dubbs	Silt Loam	Soybeans alone - Irrigated
328	McCrory	Woodruff	Dundee-Bosket-Dubbs	Silt Loam	Soybeans alone - Irrigated
329	DeWitt	Arkansas-Dewitt	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
330	DeWitt	Arkansas-Dewitt	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
331	DeWitt	Arkansas-Dewitt	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
332	Greenway	Clay-Piggott	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
333	Marianna	Lee	Loring-Memphis	Silt Loam	Soybeans alone - Non-irrigated

Observation	Location	County	Soil Associaton	Texture	Crop
334	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
335	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
336	Hickory Ridge	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
337	Walnut Ridge	Lawrence	Foley-Jackport-Crowley	Silt Loam	Rice - Kaybonnet
338	Paragould	Greene	Loring-Memphis	Silt Loam	Wheat for grain
339	Star City	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Non-irrigated
340	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Corn for grain (up to 150 bu. yield)-sandy or silt loams
341	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
342	Jonesboro	Craighead	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
343	Jonesboro	Craighead	Dundee-Bosket-Dubbs	Clay Loam	Soybeans alone - Irrigated
344	Jonesboro	Craighead	Dundee-Bosket-Dubbs	Clay Loam	Corn for grain (up to 120 bu/A yield)-clay loams, silty clays, clays
345	Plumerville	Conway	Perry-Portland	Silt Loam	Soybeans alone - Non-irrigated
346	Plumerville	Conway	Perry-Portland	Silt Loam	Soybeans alone - Non-irrigated
347	Jonesboro	Craighead	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Irrigated
348	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Fig trees - 2nd year or leaf
349	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Fig trees - 2nd year or leaf
350	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
351	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
352	Beech Grove	Greene	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
353	Beech Grove	Greene	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
354	Beech Grove	Greene	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
355	Hoxie	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans DBLCRP after wheat/wheat not fol. sorghum, rice or corn
356	Corning	Clay-Corning	Kobel	Clay	Wheat for grain
357	Corning	Clay-Corning	Kobel	Clay	Wheat for grain
358	Corning	Clay-Corning	Kobel	Clay	Wheat for grain
359	Hunter	Woodruff	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
360	England	Lonoke	Rilla-Hebert	Silt Loam	Pecan trees - 5th year or older (orchard)
361	Star City	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
362	Star City	Lincoln	Perry-Portland	Silt Loam	Soybeans alone - Irrigated
363	Jonesboro	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
364	Hoxie	Lawrence	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
365	Paragould	Greene	Kobel	Silt Loam	Soybeans alone - Irrigated
366	Paragould	Greene	Kobel	Silt Loam	Soybeans alone - Irrigated
367	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Cotton
368	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Cotton
369	Coushatta	Lafayette	Billyhaw-Perry	Clay Loam	Cotton
370	Coushatta	Lafayette	Billyhaw-Perry	Clay Loam	Cotton
371	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
372	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
373	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
374	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
375	Coushatta	Lafayette	Billyhaw-Perry	Clay Loam	Soybeans alone - Non-irrigated
376	Coushatta	Lafayette	Billyhaw-Perry	Clay Loam	Soybeans alone - Non-irrigated
377	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
378	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
379	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
380	Coushatta	Lafayette	Severn-Oklared	Silt Loam	Soybeans alone - Non-irrigated
381	Coushatta	Lafayette	Severn-Oklared	Sand	Soybeans alone - Non-irrigated
382	Coushatta	Lafayette	Severn-Oklared	Sand	Soybeans alone - Non-irrigated
383	Portland	Chicot	Perry-Portland	Clay	Soybeans alone - Irrigated
384	Portland	Chicot	Perry-Portland	Clay	Rice - Cypress
385	Beech Grove	Greene	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
386	Beech Grove	Greene	Foley-Jackport-Crowley	Silt Loam	Soybeans alone - Irrigated
387	Bono	Greene	Kobel	Silt Loam	Soybeans alone - Irrigated
388	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
389	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
390	Gillett	Arkansas-Dewitt	Crowley-Stuttgart	Silt Loam	Soybeans alone - Irrigated
391	Forrest City	St. Francis	Calloway-Henry-Grenada-Calhoun	Clay Loam	Soybeans alone - Irrigated
392	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
393	Marianna	Lee	Calloway-Henry-Grenada-Calhoun	Silt Loam	Soybeans alone - Non-irrigated
394	Lake Village	Chicot	Sharkey-Alligator-Tunica	Silt Loam	Soybeans alone - Irrigated
395	Wynne	Cross	Calloway-Henry-Grenada-Calhoun	Silt Loam	Rice - Drew
396	Lake Village	Chicot	Commerce-Sharkey-Crevasse-Robinsonvil	Clay	Rice - Cypress
397	Texarkana	Miller	Sacul-Smithdale-Sawyer	Silt Loam	Wheat for grazing plus grain
398	Texarkana	Miller	Sacul-Smithdale-Sawyer	Silt Loam	Wheat for grazing plus grain
399	Harrisbrug	Poinsett	Dundee-Bosket-Dubbs	Silt Loam	Rice - Drew
400	Harrisburg	Poinsett	Dundee-Bosket-Dubbs	Silt Loam	Rice - Drew
401	Buckner	Lafayette	Sacul-Smithdale-Sawyer	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
402	Buckner	Lafayette	Sacul-Smithdale-Sawyer	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
403	Buckner	Lafayette	Sacul-Smithdale-Sawyer	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
404	Buckner	Lafayette	Sacul-Smithdale-Sawyer	Silt Loam	Corn for grain (up to 125 bu. yield)-sandy or silt loams
405	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
406	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
407	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
408	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
409	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
410	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
411	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
412	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
413	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
414	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
415	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
416	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
417	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer

Observation	Location	County	Soil Associaton	Texture	Crop
418	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
419	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
420	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
421	Lexa	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Bermudagrass - maintenance
422	Lexa	Phillips	Calloway-Henry-Grenada-Calhoun	Silt Loam	Bermudagrass - maintenance
423	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
424	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
425	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
426	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
427	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
428	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
429	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
430	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
431	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
432	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
433	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
434	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
435	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
436	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
437	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
438	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
439	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
440	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
441	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
442	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
443	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
444	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
445	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
446	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
447	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
448	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
449	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
450	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
451	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
452	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
453	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
454	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
455	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
456	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
457	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
458	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
459	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
460	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
461	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
462	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
463	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
464	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
465	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
466	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
467	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
468	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
469	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
470	Pine Bluff	Jefferson	Rilla-Hebert	Silt Loam	Peas - Southern or summer
471	Stuttgart	Arkansas-Stuttgart	Crowley-Stuttgart	Silt Loam	Pecan trees - 5th year or older (orchard)

APPENDIX A

Figure 1. Correlation between the M3 soil extraction for K at a 1:10 and a 1:7 dilution ratio.

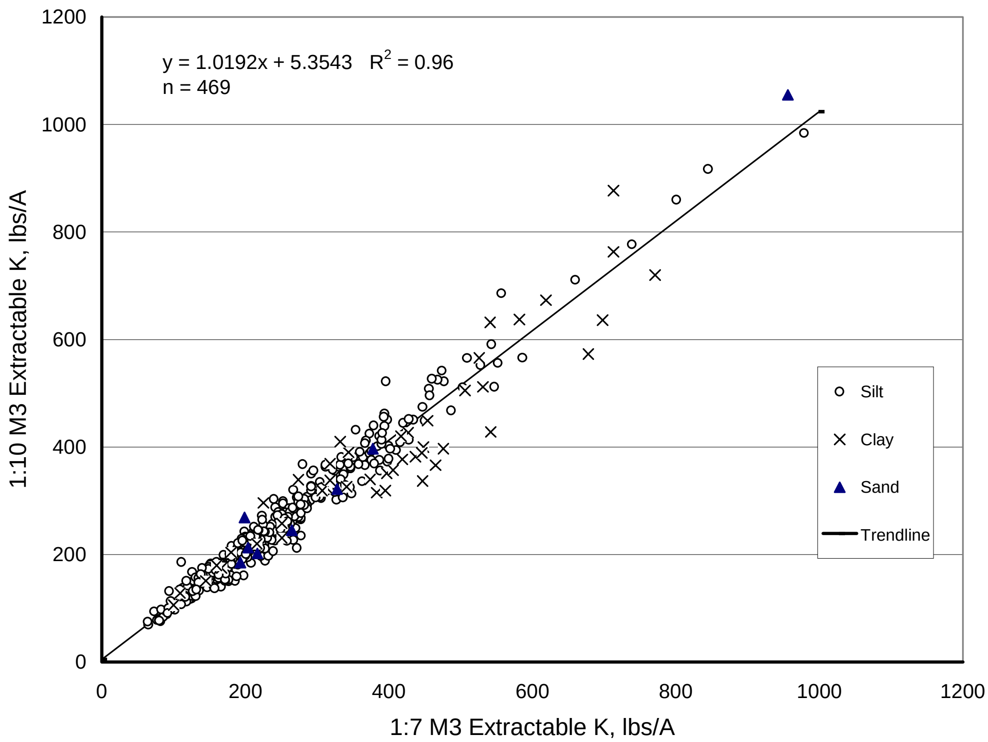
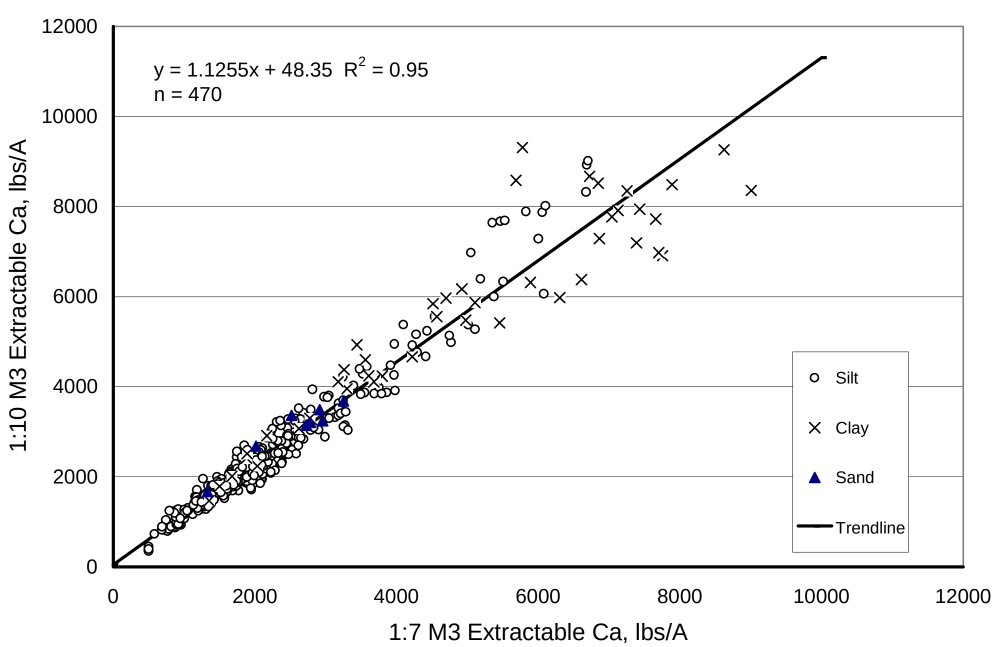


Figure 2. Correlation between the M3 soil extraction for Ca at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 3. Correlation between the M3 soil extraction for Na at a 1:10 and a 1:7 dilution ratio.

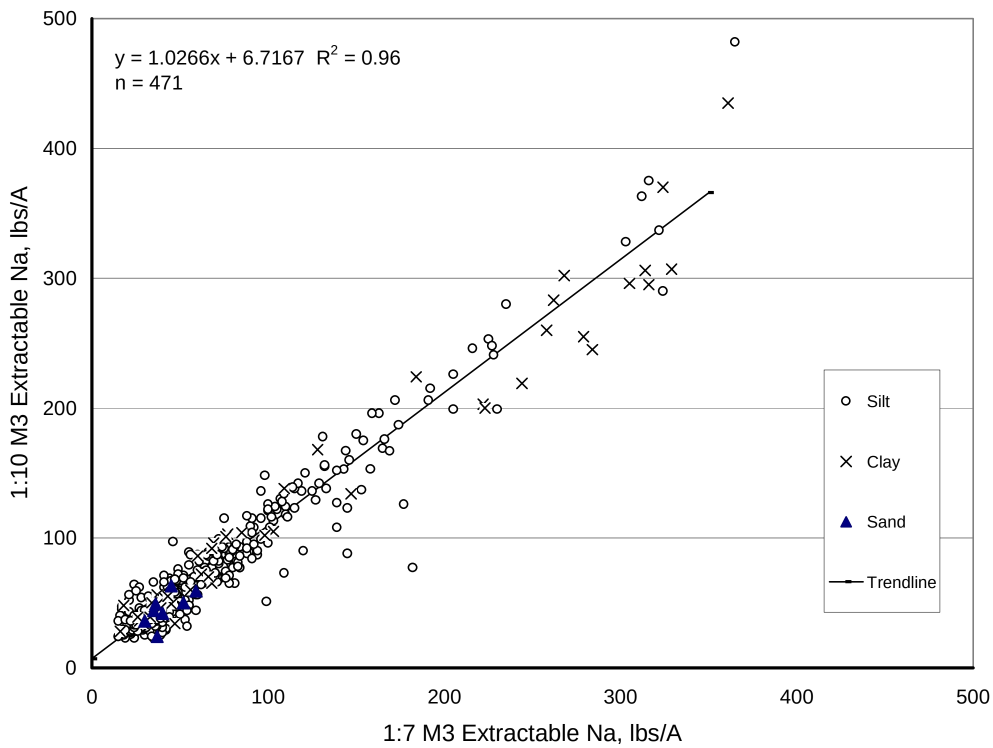
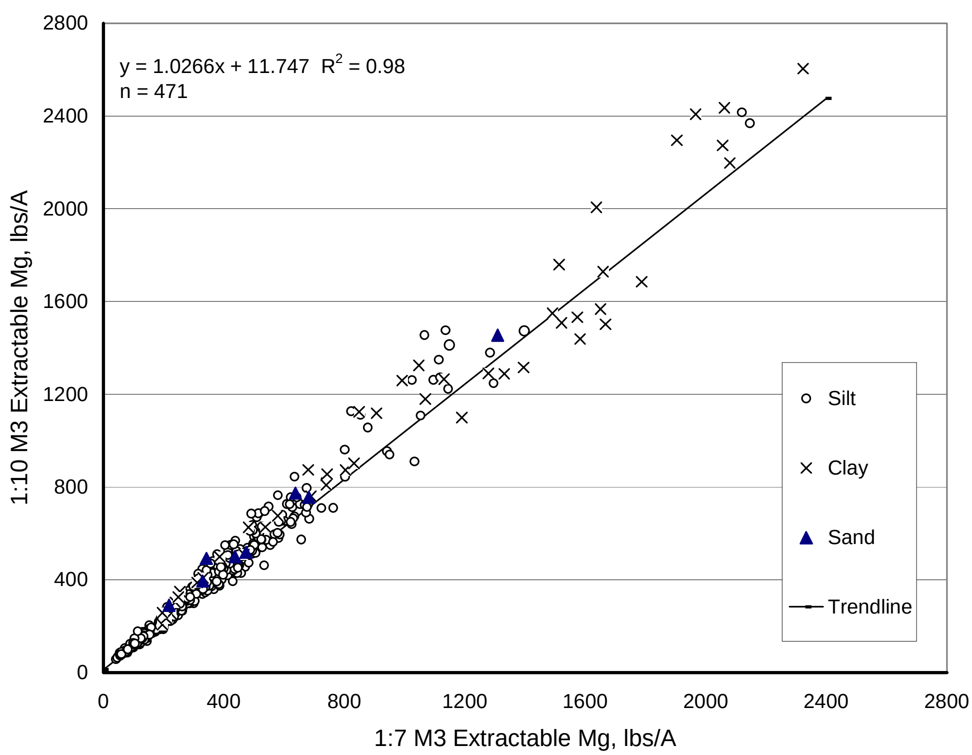


Figure 4. Correlation between the M3 soil extraction for Mg at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 5. Correlation between the M3 soil extraction for Fe a 1:10 and a 1:7 dilution ratio.

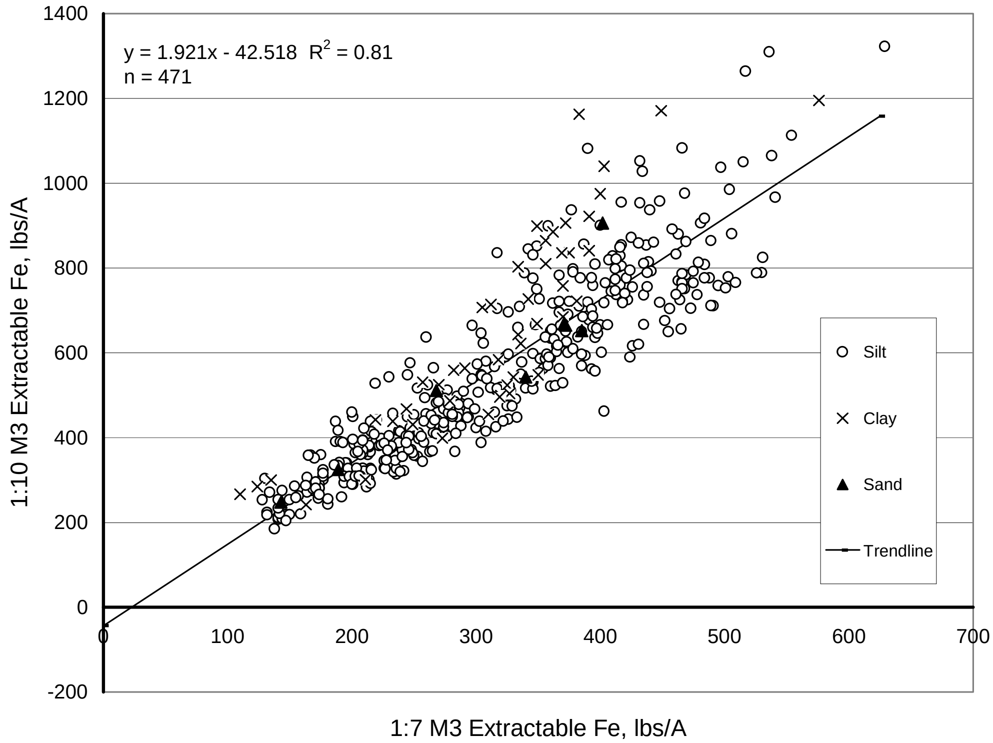
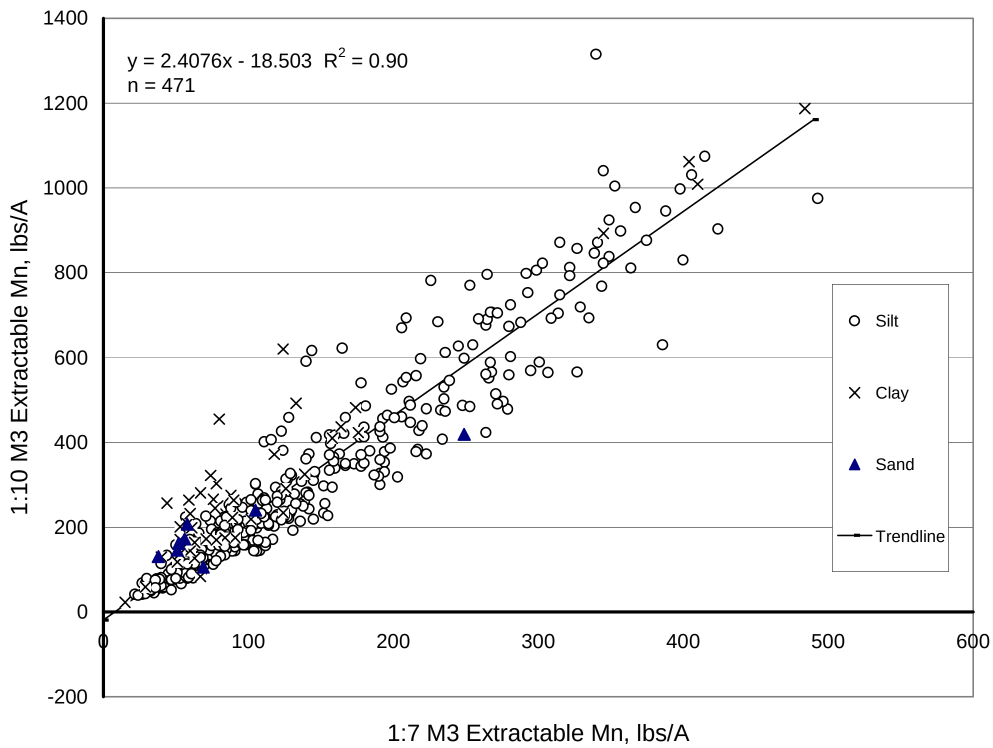


Figure 6. Correlation between the M3 soil extraction for Mn at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 7. Correlation between the M3 soil extraction for Cu at a 1:10 and a 1:7 dilution ratio.

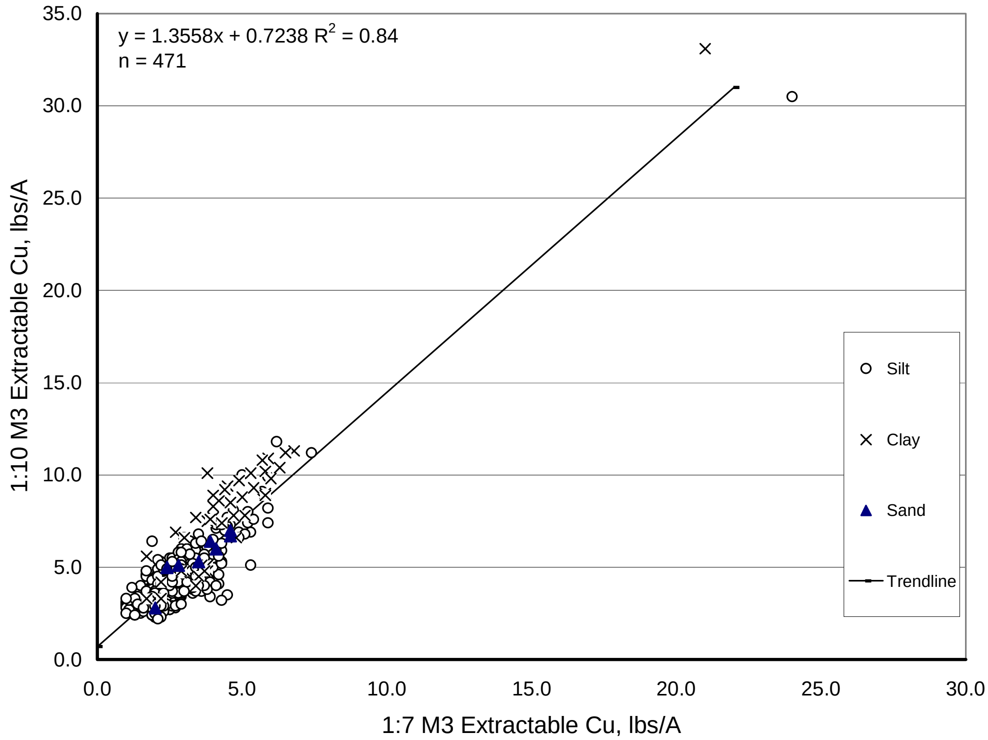
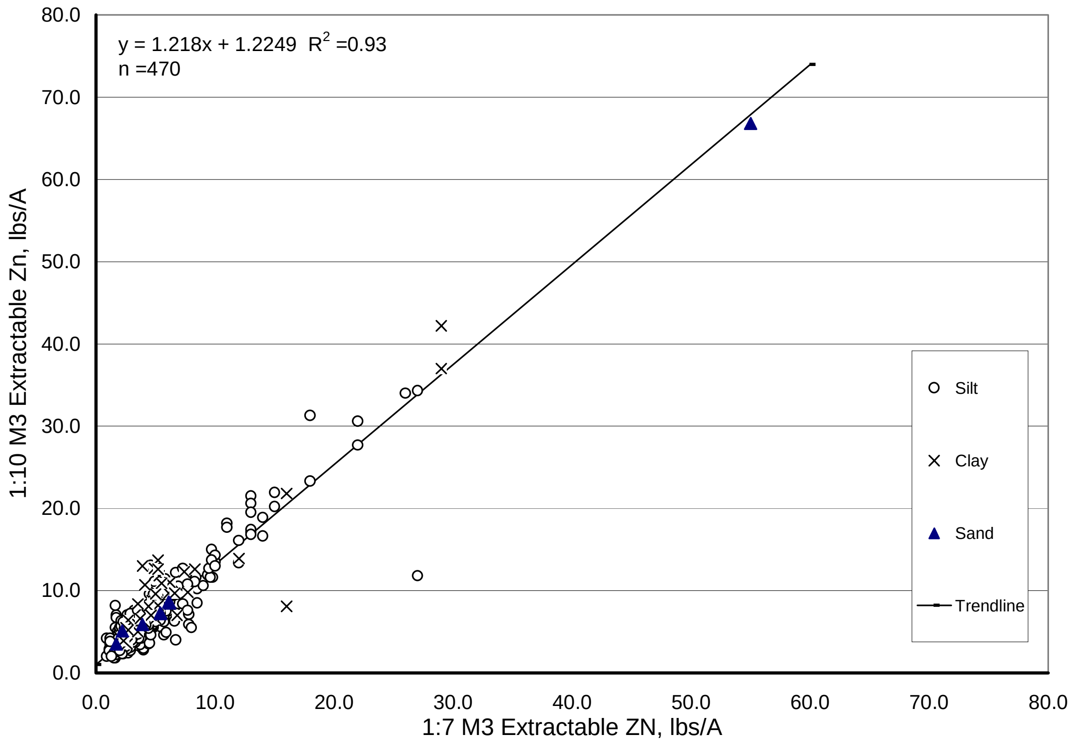


Figure 8. Correlation between the M3 soil extraction for Zn at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 9. Correlation between the M3 soil extraction for B at a 1:10 and a 1:7 dilution ratio.

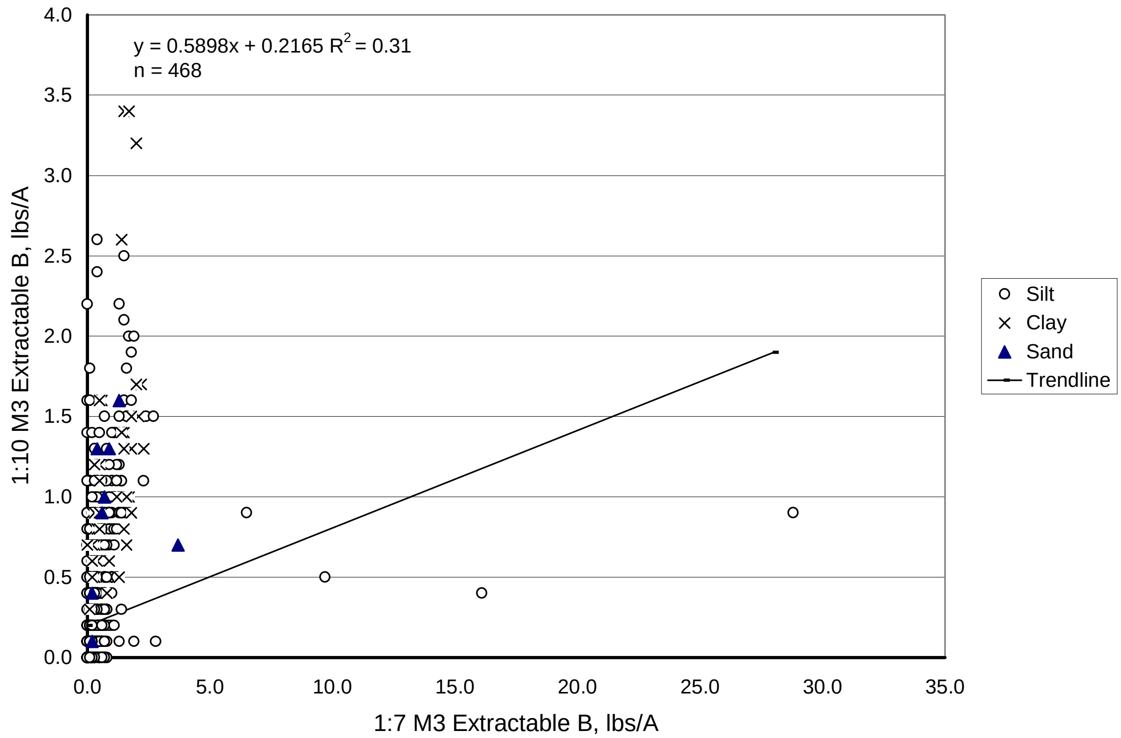
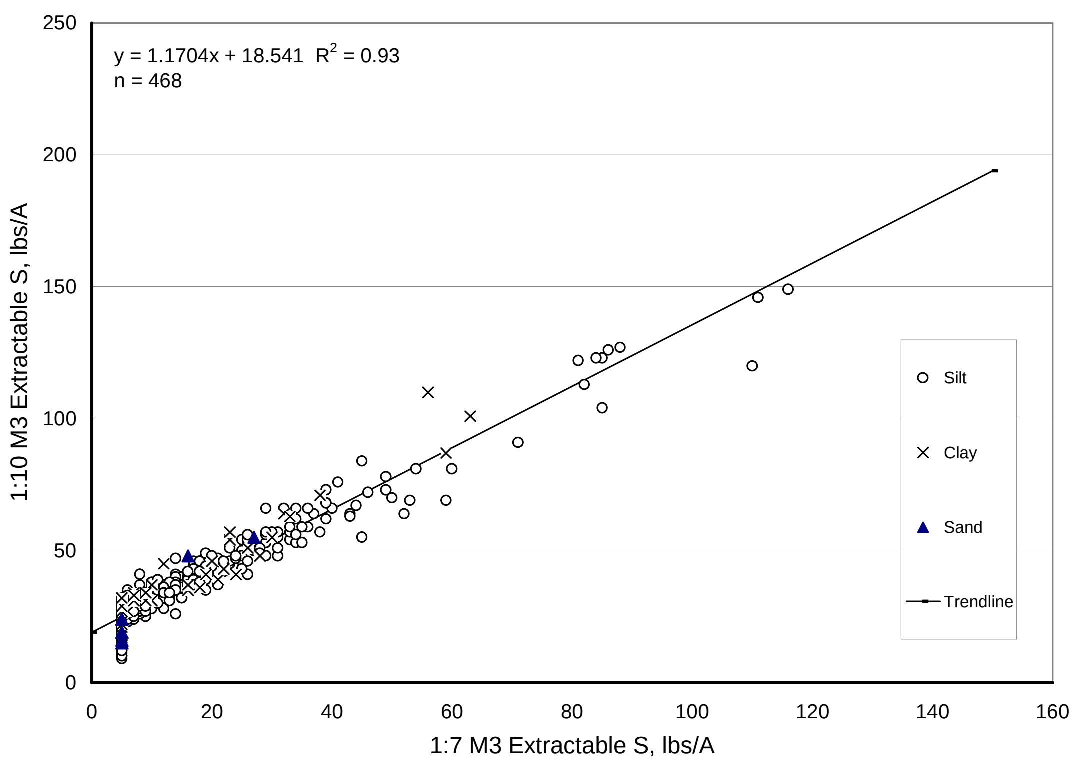
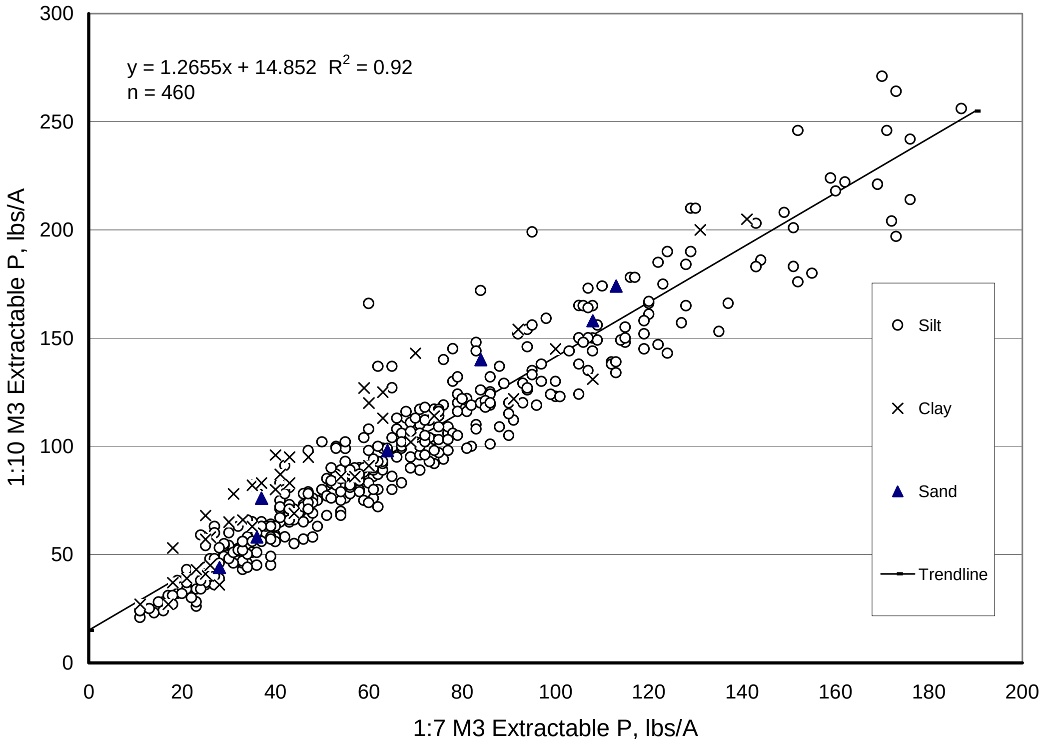


Figure 10. Correlation between the M3 soil extraction for S at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 11. Correlation between the M3 soil extraction for P at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 12. Analytical differences between M3 soil K extracted at a 1:10 and a 1:7 dilution ratio.

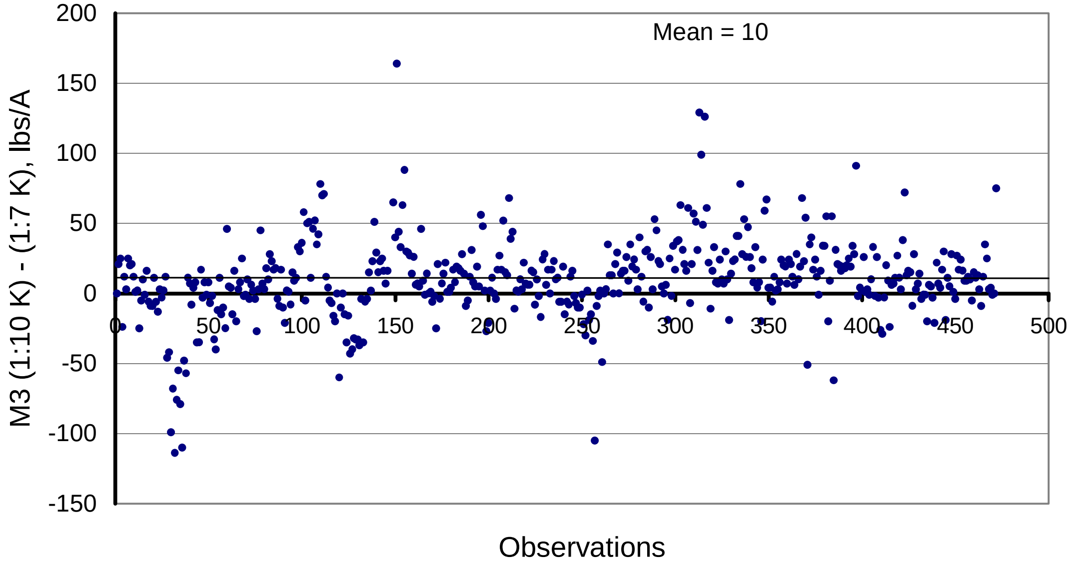
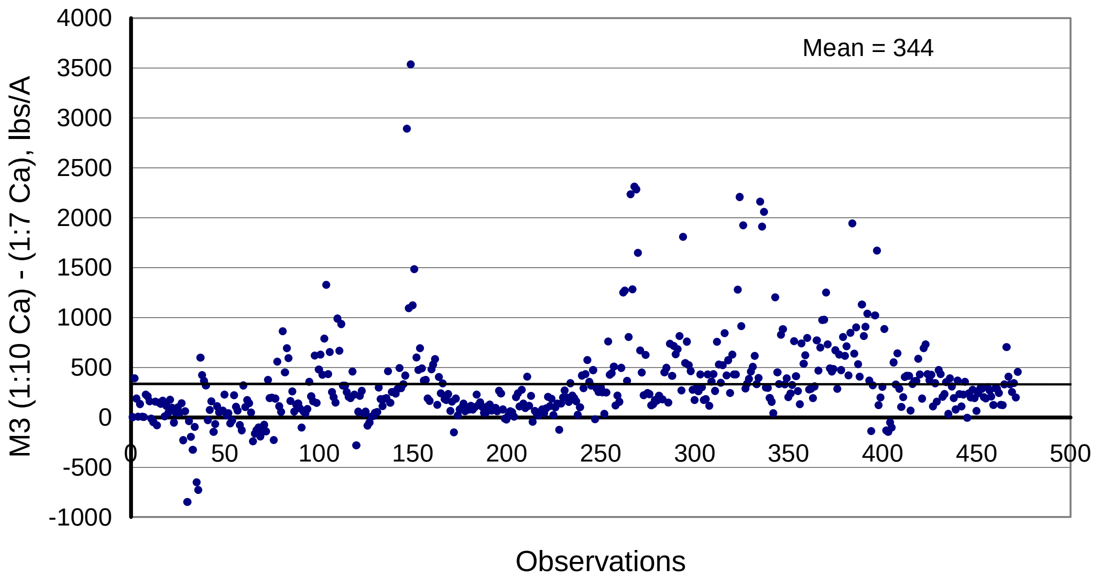


Figure 13. Analytical differences between M3 soil Ca extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 14. Analytical difference between M3 soil Na extracted at a 1:10 and a 1:7 dilution ratio.

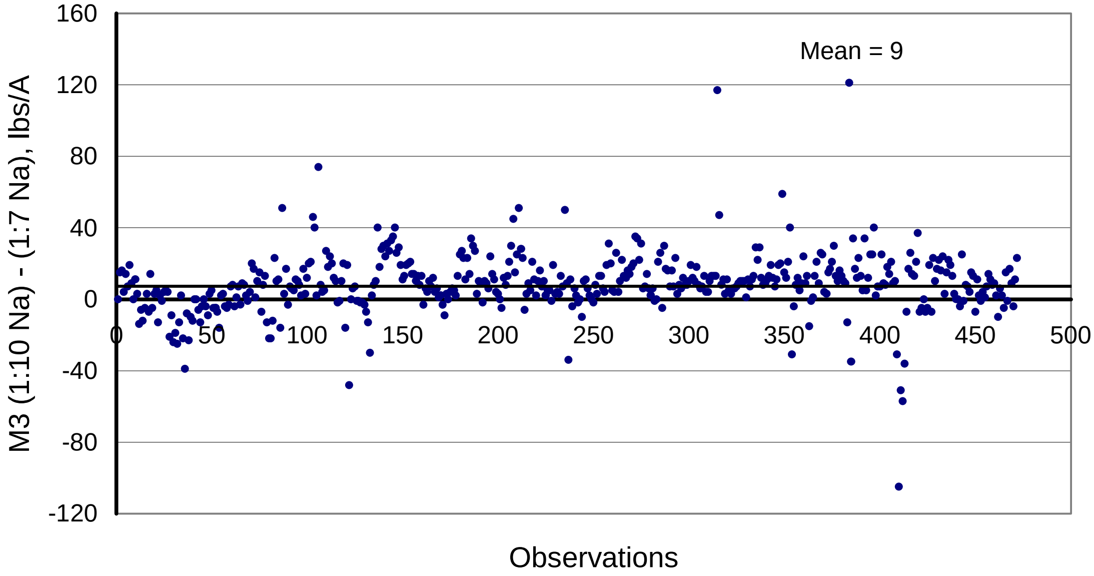
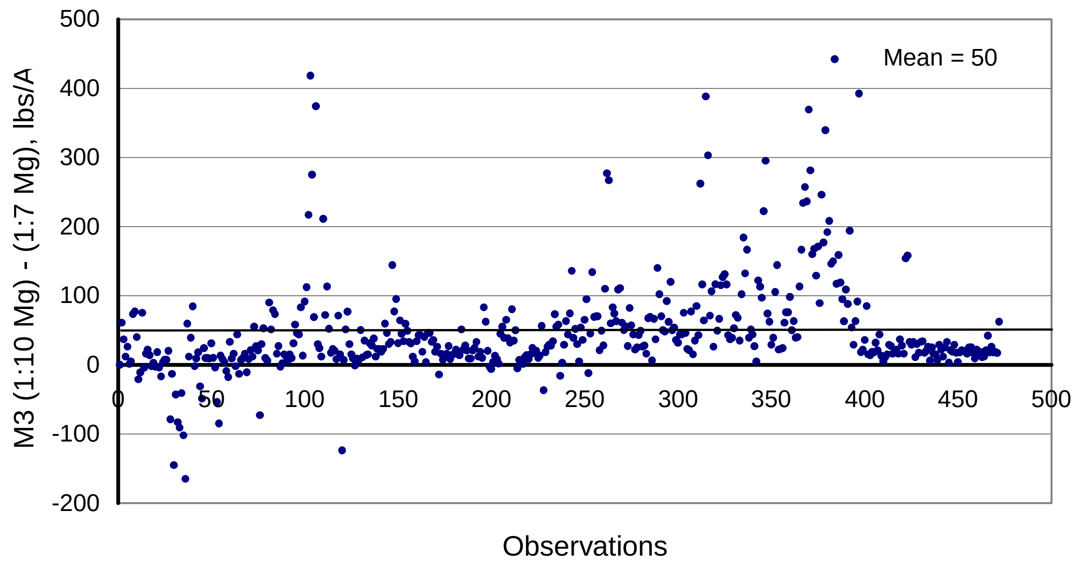


Figure 15. Analytical difference between M3 soil Mg extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 16. Analytical differences between M3 soil Fe extracted at a 1:10 and a 1:7 dilution ratio.

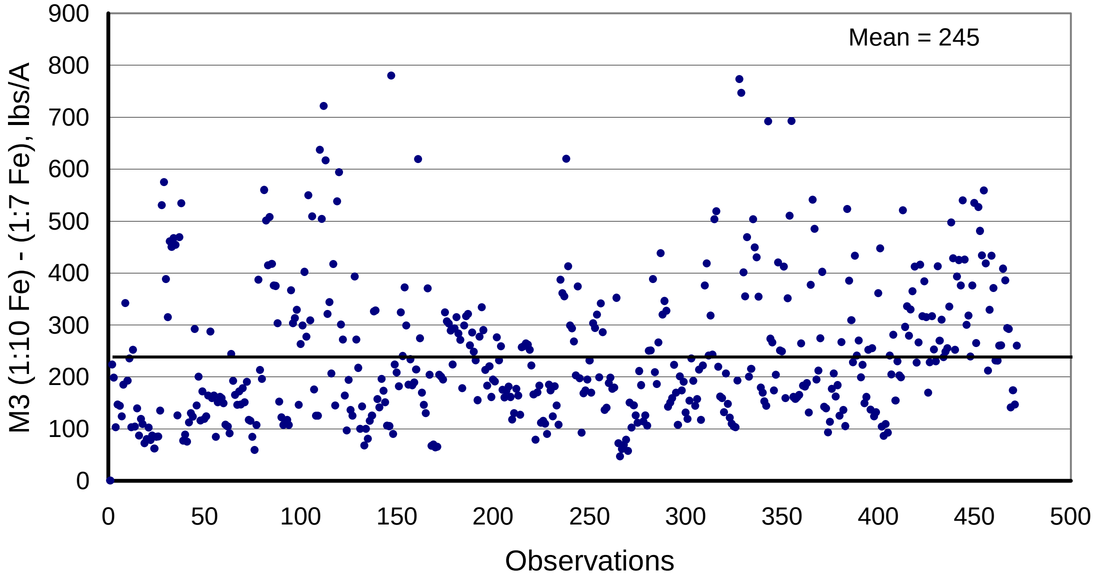
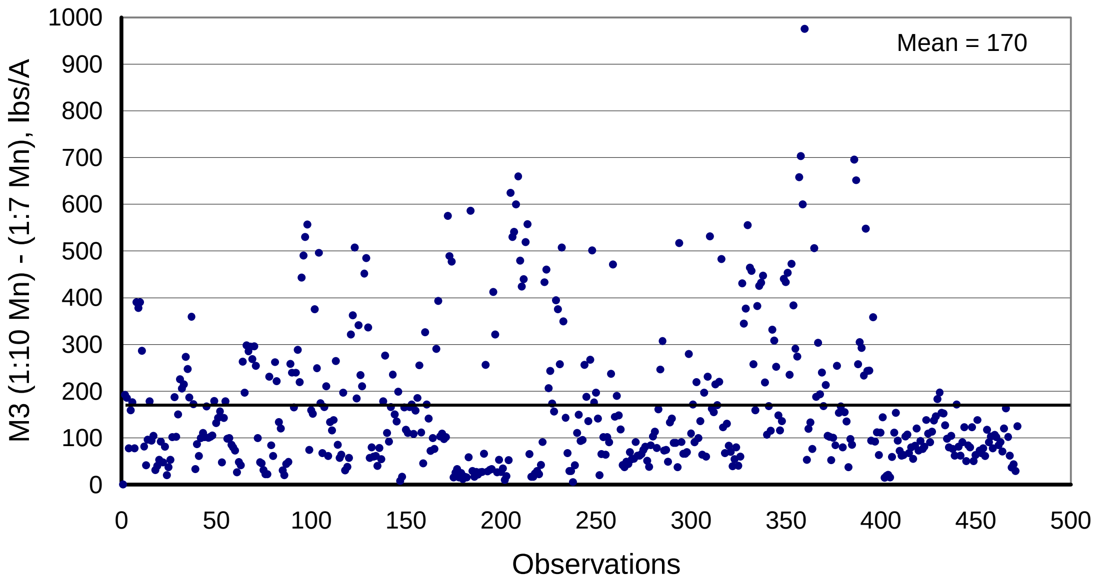


Figure 17. Analytical differences between M3 soil Mn extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 18. Analytical differences between M3 soil Cu extracted at a 1:10 and a 1:7 dilution ratio.

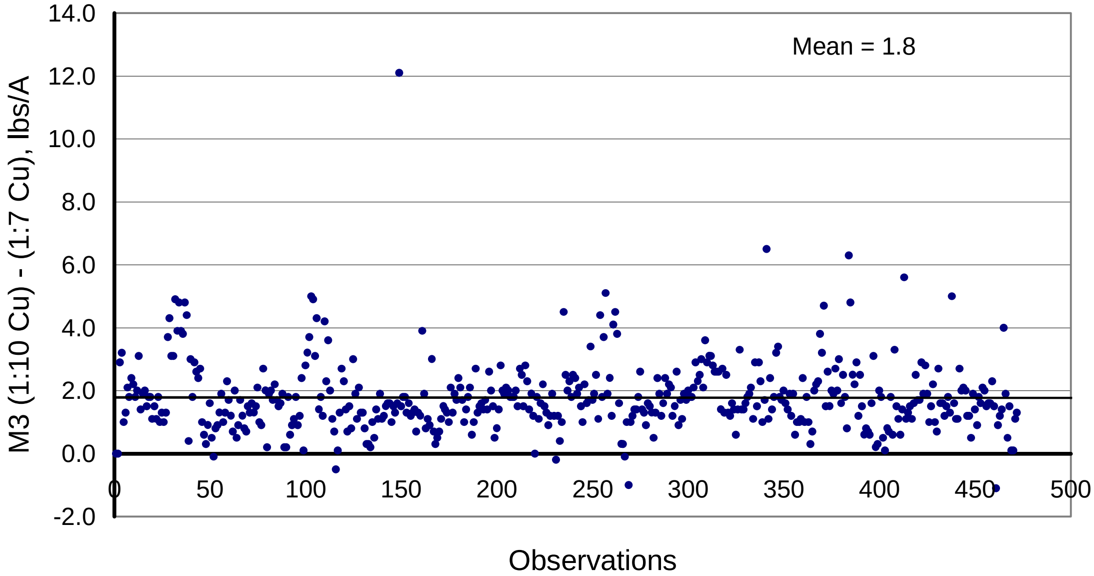
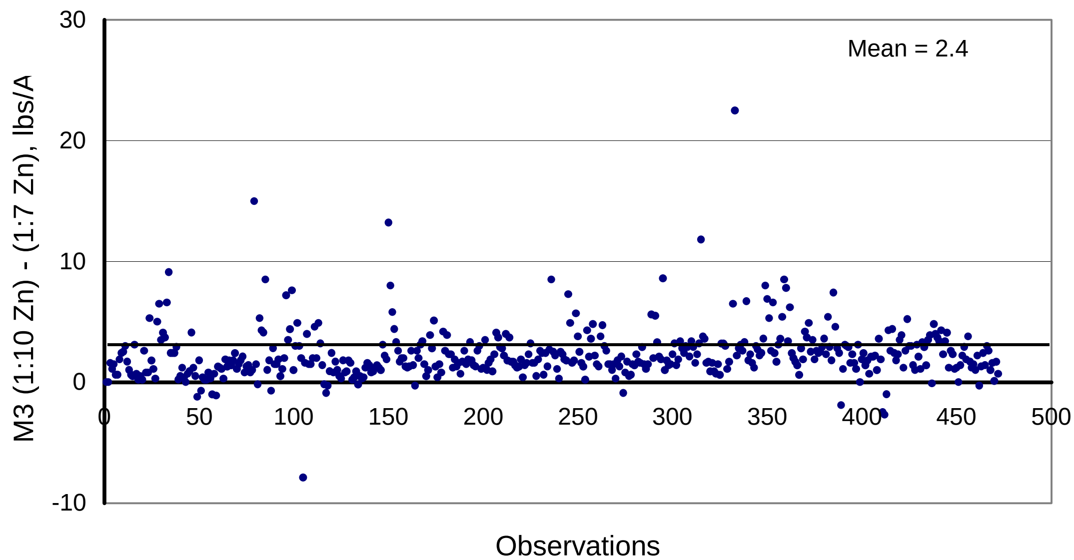


Figure 19. Analytical differences between M3 soil Zn extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 20. Analytical differences between M3 soil B extracted at a 1:10 and a 1:7 dilution ratio.

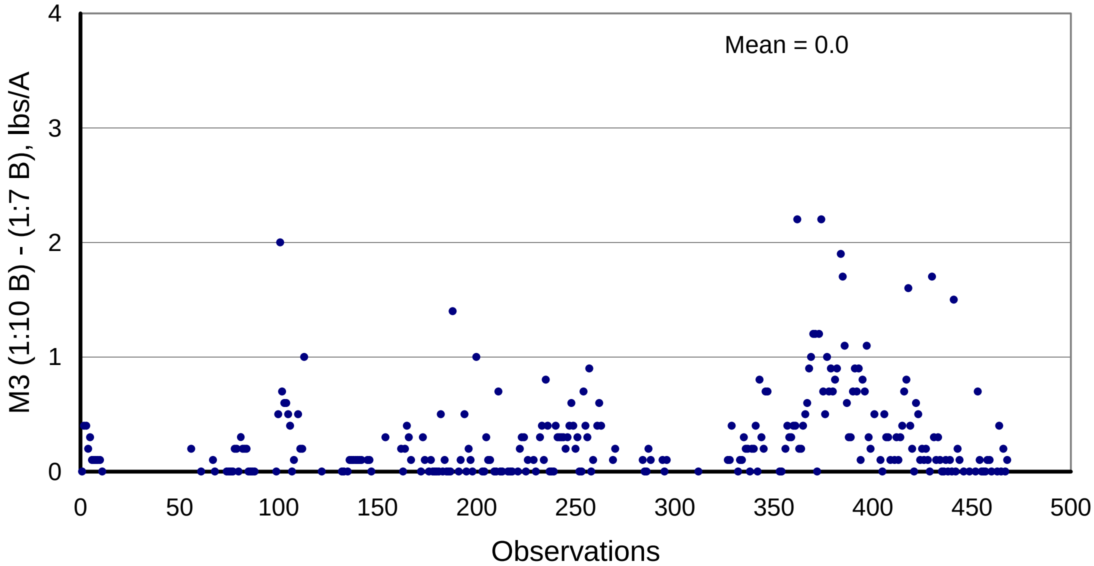
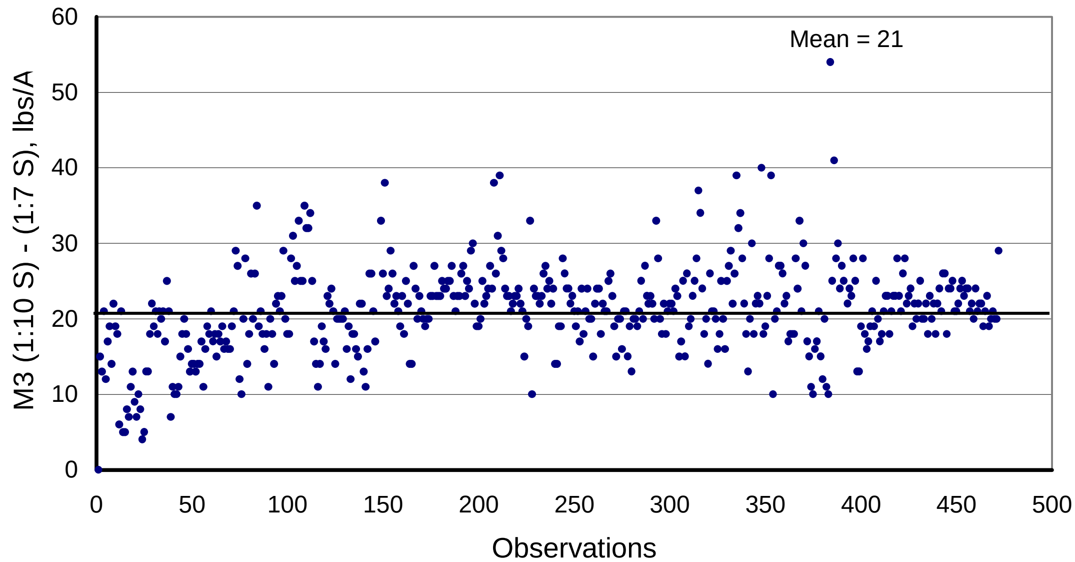
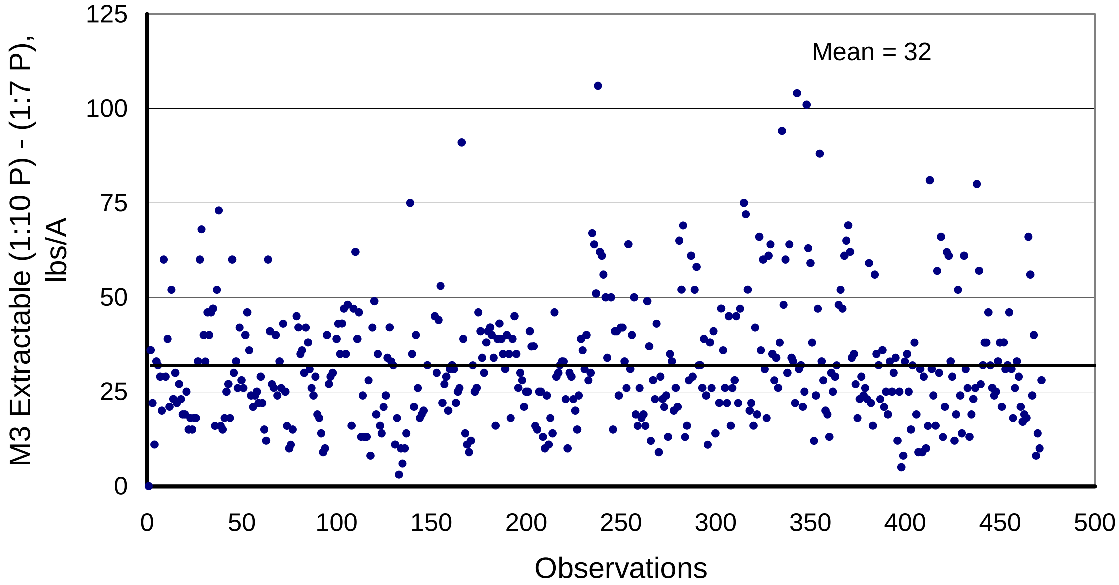


Figure 21. Analytical differences between M3 soil S extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 22. Analytical differences between M3 soil P extracted at a 1:10 and a 1:7 dilution ratio.



APPENDIX A

Figure 23. Relationship between soil pH and M3 extractable Ca.

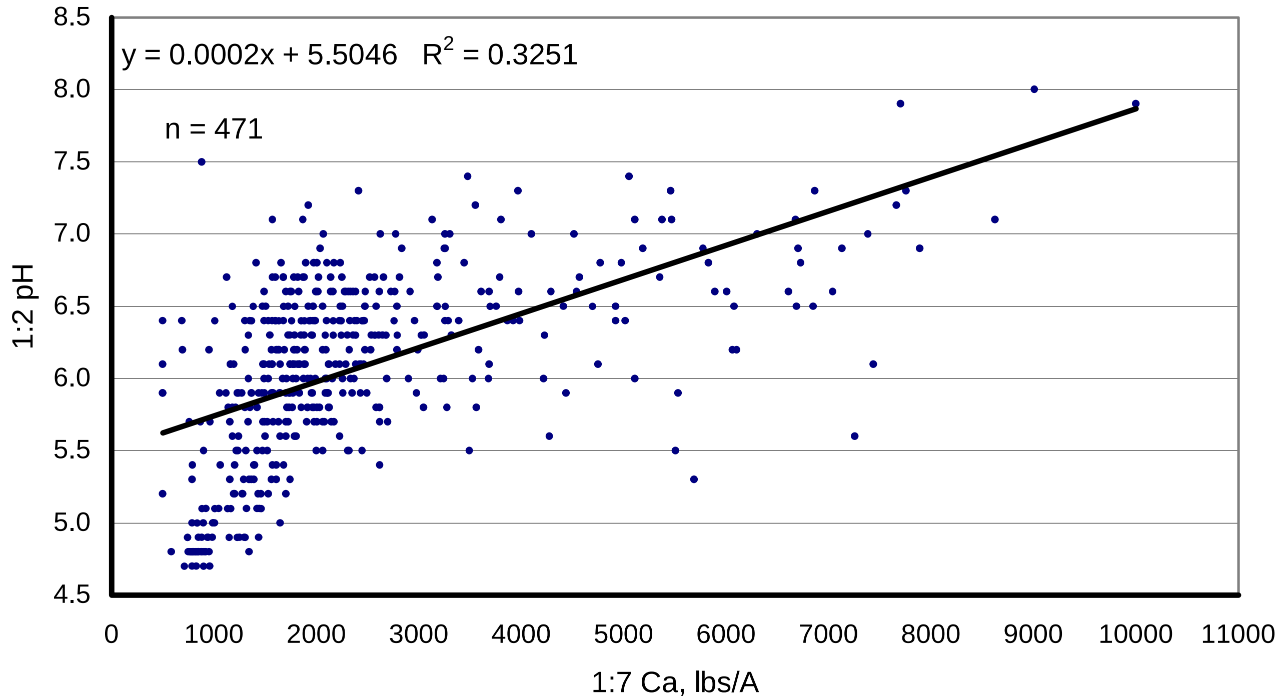
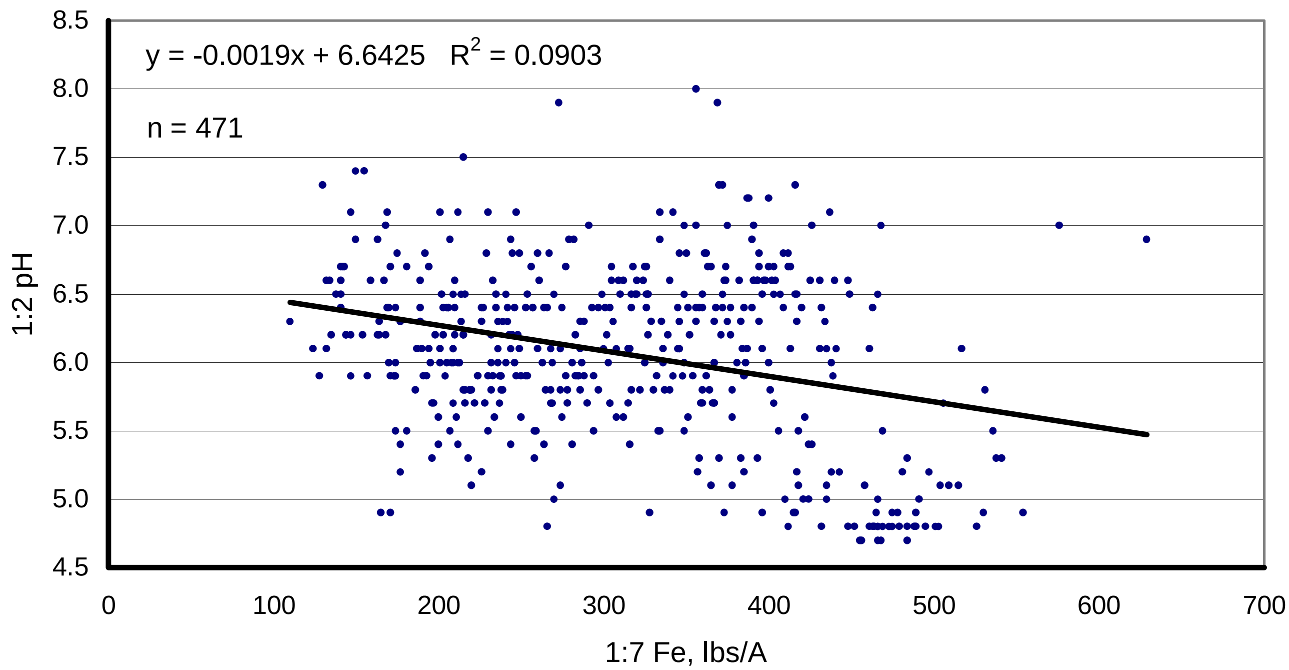


Figure 24. Relationship between soil pH and M3 extractable Fe.



APPENDIX A

Figure 25. Relationship between soil pH and M3 extractable Mn.

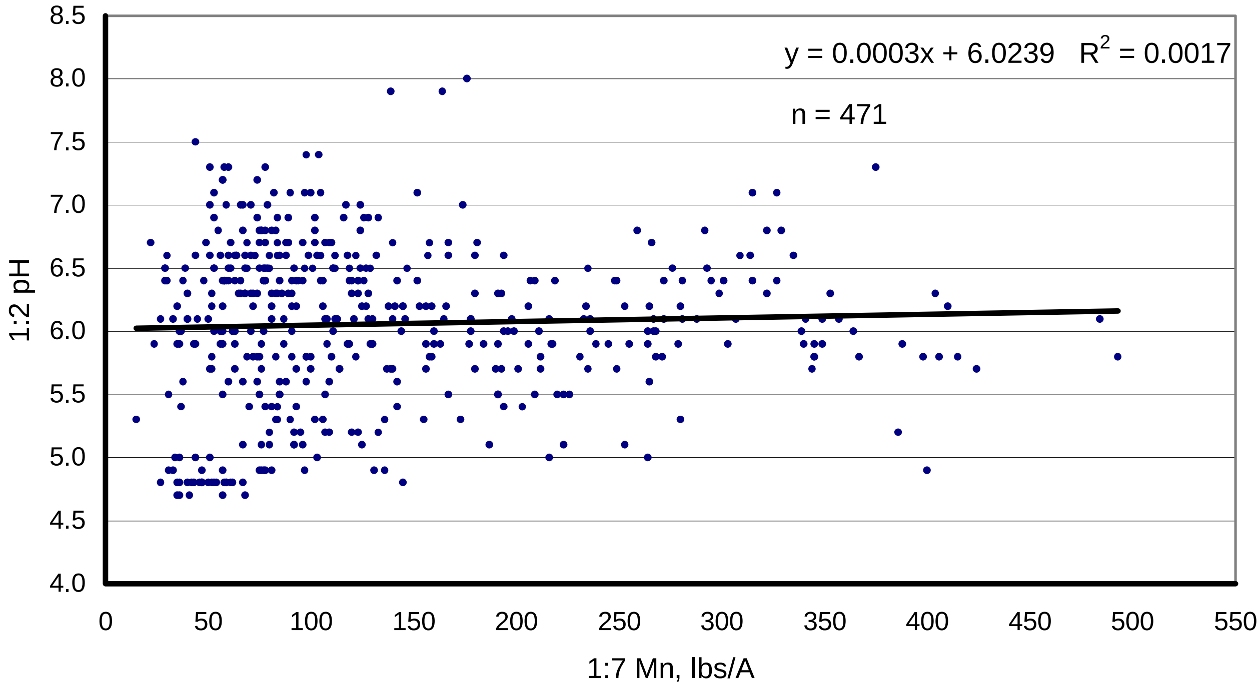
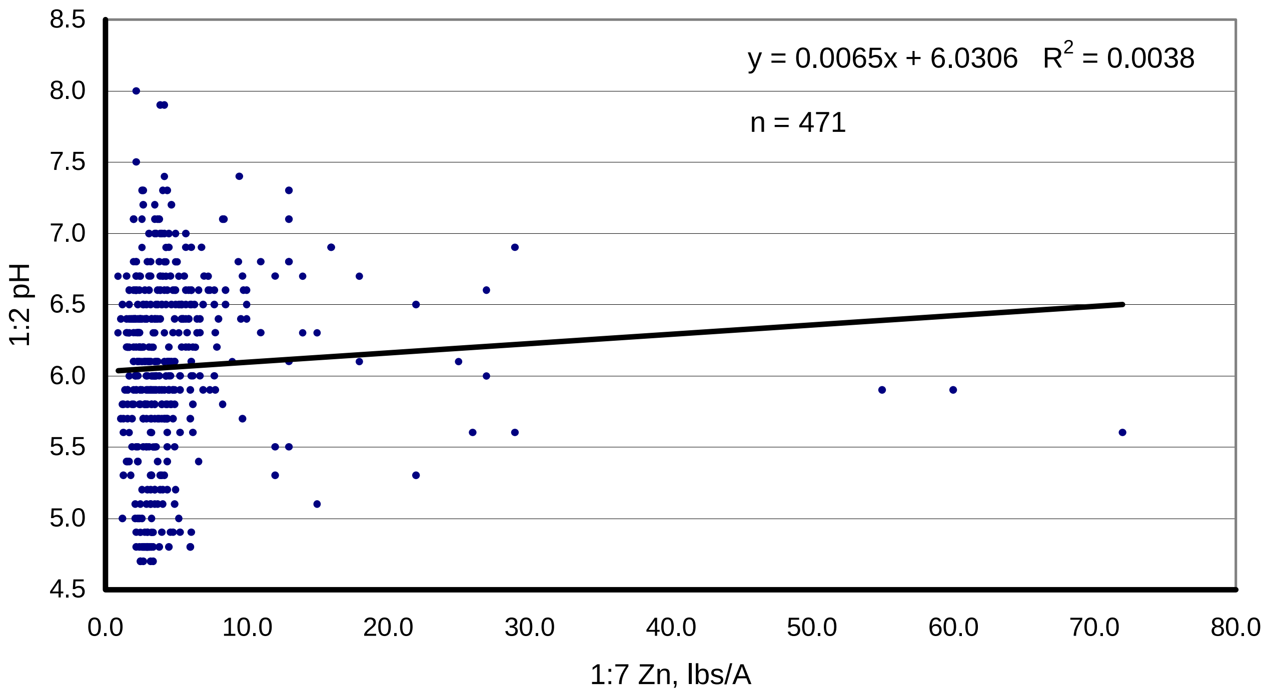


Figure 26. Relationship between soil pH and M3 extractable Zn.



APPENDIX A

Figure 27. Relationship between soil pH and M3 extractable B.

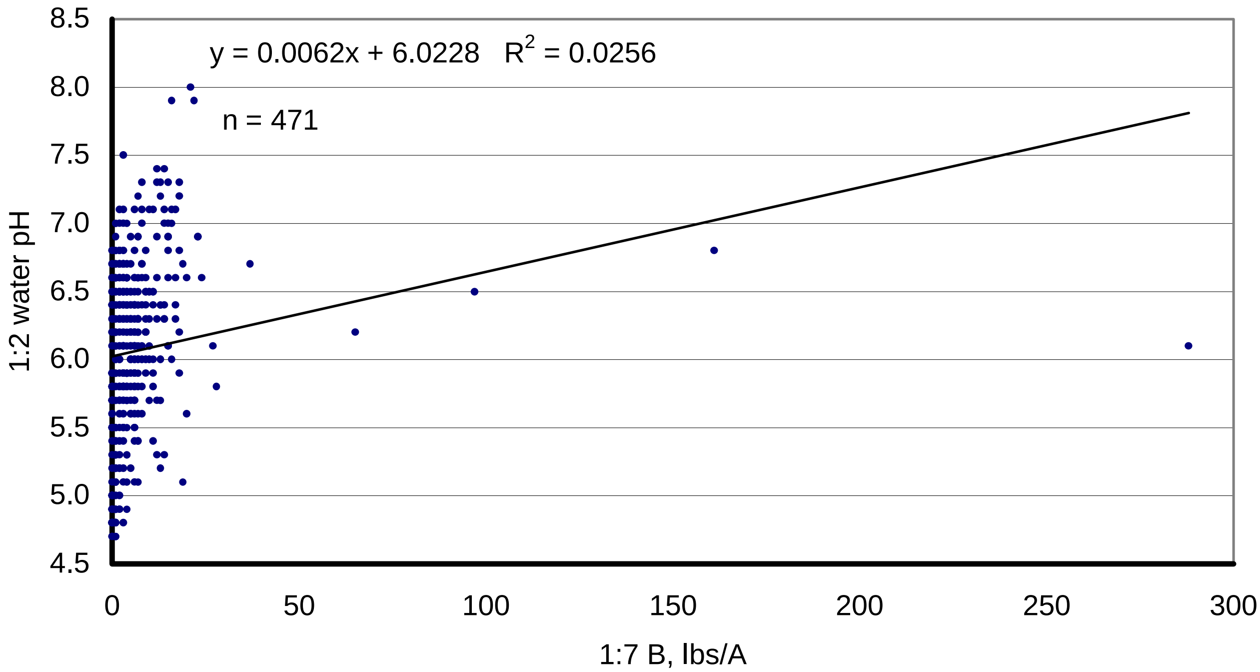


Figure 28. Relationship between soil pH and M3 extractable P.