

Ketterings, Q.M., H. Krol, W.S. Reid, N. Herendeen, and R.N. King (2004). Monroe County Soil Sample Survey 1995-2001. CSS Extension Bulletin E04-3. 40 pages.

Soil Sample Survey

Monroe Co.

Samples analyzed by CNAL in 1995-2001



Agricultural land in Monroe County frequently has much greater value for urban development. The best farmland makes the best housing land as can be seen by the strip development along this farm field. Soil testing is important in crop production as well as turf establishment and maintenance in urban situations.

**Quirine M. Ketterings, Hettie Krol, W. Shaw Reid,
Nathan Herendeen, and Robert N. King**



Nutrient Management Spear Program: <http://nmsp.css.cornell.edu/>

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Summary compiled by

Quirine Ketterings and Hettie Krol

Nutrient Management Spear Program
Department of Crop and Soil Sciences
817 Bradfield Hall, Cornell University,
Ithaca NY 14853

W. Shaw Reid

Professor Emeritus
Department of Crop and Soil Sciences

Nathan Herendeen

Senior Extension Associate - Field Crops
CCE - North West New York Team

Robert N. King

Senior Extension Educator
CCE - Monroe County

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Table of Content

1. General Survey Summary.....	6
2. Cropping Systems	11
2.1 Samples for Home and Garden.....	11
2.2 Samples for Commercial Production.....	12
3. Soil Types	14
3.1 Samples for Home and Garden.....	14
3.2 Samples for Commercial Production.....	15
4. Organic Matter	17
4.1 Samples for Home and Garden.....	17
4.2 Samples for Commercial Production.....	18
5. pH	19
5.1 Samples for Home and Garden.....	19
5.2 Samples for Commercial Production.....	20
6. Phosphorus.....	21
6.1 Samples for Home and Garden.....	21
6.2 Samples for Commercial Production.....	22
7. Potassium	23
7.1 Samples for Home and Garden.....	23
7.2 Samples for Commercial Production.....	26
8. Magnesium	29
8.1 Samples for Home and Garden.....	29
8.2 Samples for Commercial Production.....	30
9. Iron.....	31
9.1 Samples for Home and Garden.....	31
9.2 Samples for Commercial Production.....	32
10. Manganese	33
10.1 Samples for Home and Garden.....	33
10.2 Samples for Commercial Production.....	34
11. Zinc	35
11.1 Samples for Home and Garden.....	35
11.2 Samples for Commercial Production.....	36
Appendix: Cornell Crop Codes	37

Introduction

Monroe County is located adjacent to Lake Ontario and includes the city of Rochester. It contains nearly 431,000 acres of land area. Approximately 100,000 acres (24) % of the area is used for farm production in any given year. Much of the county is covered with urban development around Rochester.

The county lies entirely in the Ontario and Huron Lake Plains region. The northern lake plain begins at Lake Ontario, where the elevation is 246 feet above sea level. It extends to the foot of the Niagara escarpment. However, the escarpment is not nearly as obvious in Monroe as it is to the west. The elevation increases gradually to areas of 600 feet elevation. The Huron Plain extends from that area southward into Livingston and Ontario Counties. It has a high point of about 900 feet near the Ontario County line in the southeast part of the county.

The northward flowing Genesee River dissects the county and empties into Lake Ontario at Charlotte Harbor. This feature was responsible for the development of Rochester. The present river gorge is the post-glacial channel for the river. Two sets of waterfalls in this channel provided waterpower for the early industrial and flour milling facilities that became the hub for Rochester to develop. The pre-glacial river channel ended a few miles to the east in what is now Irondequoit Bay. It was filled in by the advancing ice sheets and never became a major drainage channel during the recession of the ice.

The soils in the north are dominated by glacial till that was greatly modified by glacial outwash and/or glacial lake sediments. The soils in the south are derived from high carbonate materials deposited by glacial advance across the Niagara dolomite limestone escarpment. However, glacial outwash materials and/or lacustrine sediments also modified much of this area. The effects of the pre and post-glacial Genesee River channels greatly modified the glacial till materials. Huge deposits of sand and gravel are found in the old channels and at the interface areas where the Genesee flowed into the face of the receding ice sheets.

Large areas of kame and kettle topography occur in the southern portion of the county, the result of massive outwash during the period of glacial recession. Some of these areas are preserved and protected in the Mendon Ponds and Powder Mill County Parks.

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The agriculture of Monroe County is diverse. Vegetables for fresh market and processing (peas, snap beans, sweet corn, kidney beans, cabbage, pumpkins, potatoes) are the largest single generator of farm income. Next are greenhouse, nursery and ornamental production. Third is dairy and associated feed grain production. Fruit production (apples, cherries, strawberries, peaches, pears and plums) is also important for both fresh market and processing. Small-scale livestock producers market beef and sheep from Monroe County. There is also a significant pleasure horse industry in the area. Hay and grain crops not used locally are exported to areas throughout the eastern United States.

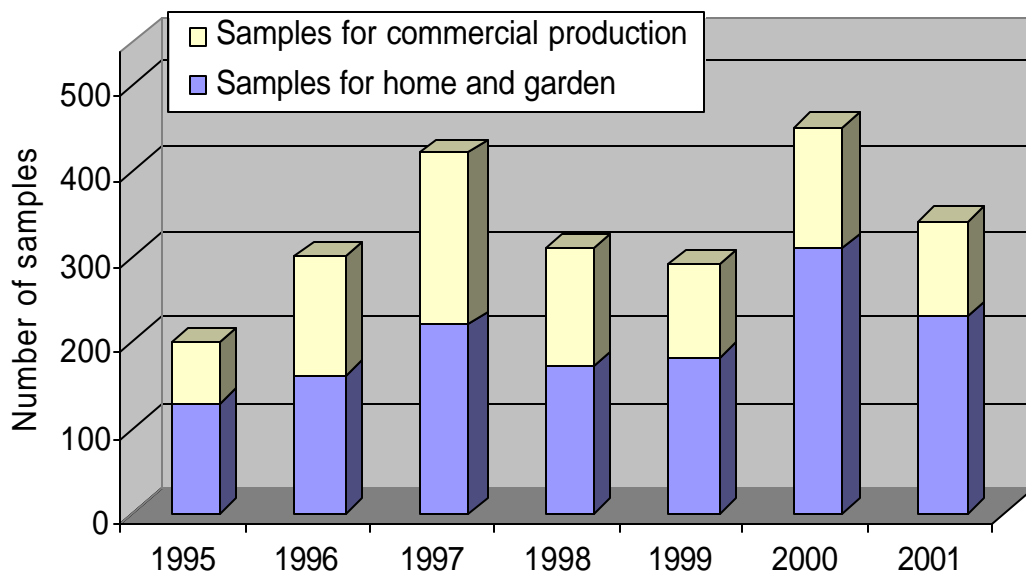
Monroe County is home to several large vegetable production farms, especially producers of cabbage. Stored cabbage is marketed throughout the eastern United States all year-round.

All the above industries rely heavily on soil testing to maintain optimum production while protecting the agricultural environment from nutrient runoff.

Nathan Herendeen and Robert N. King
Cornell Cooperative Extension

1. General Survey Summary

This survey summarizes the soil test results from Monroe County soil samples submitted for analyses to the Cornell Nutrient Analysis Laboratory (CNAL) during 1995-2001. The total number of samples analyzed in these years amounted to 2313. Of these 2313 samples, 907 (39%) were submitted to obtain fertilizer recommendations for commercial production while 1406 samples (61%) were submitted as home and garden samples.



Homeowners		Commercial		Total
1995	129	1995	72	210
1996	161	1996	139	300
1997	220	1997	200	420
1998	172	1998	137	309
1999	183	1999	108	291
2000	310	2000	141	451
<u>2001</u>	<u>231</u>	<u>2001</u>	<u>110</u>	<u>341</u>
Total	1406	Total	907	2313

Many of the home and garden (44%) were submitted to request fertilizer recommendations for lawns while 17% of the samples were submitted to obtain home garden vegetable recommendation. People submitting samples for commercial production requested fertilizer recommendations for corn silage or grain production (12%), cabbage (10%), wheat (9%), sweet corn (8%), apples (7%), alfalfa or alfalfa/grass mixtures (6%), while fewer samples were submitted for other crops including small grains, vegetables and fruit production.

Home and garden samples in Monroe County were silty (27%), silt loams (23%), sandy loams (25%) or sandy (25%) belonging to soil management group 2, 3, 4, and 5, respectively. The table below gives descriptions of each of the soil management groups.

Soil Management Groups for New York

1	Fine-textured soils developed from clayey lake sediments and medium- to fine-textured soils developed from lake sediments.
2	Medium- to fine-textured soils developed from calcareous glacial till and medium-textured to moderately fine-textured soils developed from slightly calcareous glacial till mixed with shale and medium-textured soils developed in recent alluvium.
3	Moderately coarse textured soil developed from glacial outwash and recent alluvium and medium-textured acid soil developed on glacial till.
4	Coarse- to medium-textured soils formed from glacial till or glacial outwash.
5	Coarse- to very coarse-textured soils formed from gravelly or sandy glacial outwash or glacial lake beach ridges or deltas.
6	Organic or muck soils with more than 80% organic matter.

Of the samples submitted for commercial production, 59% belonged to soil management group 2. Two percent belonged to soil management group 1 while 16% were classified as group 3 soils, 14% as group 4 soils and 6% as group 5 soils. Less than one percent was

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from soil management group 6 while the remainder of the soils could not be classified with regards to soil management group. The five most common soil series were Hilton (22%), Ontario (21%), Collamer (9%), Galen (4%), and Claverack (3%). These soils represent 10% (Hilton), 10% (Ontario), 7% (Collamer), 2% (Galen), and 2% (Claverack) of the nearly 431,000 acres of land area in the county.

Organic matter levels, as measured by loss on ignition, ranged from less than 1% to slightly more than 35% with median values ranging from 3.0 to 3.1% organic matter for home and garden samples and 2.1 to 2.7% for samples submitted for commercial production. Sixty-seven percent of the home and garden samples had between 2 and 5% organic matter with 28% testing between 2 and 2.9% organic matter, 25% between 3.0 and 3.9% organic matter, and 14% between 4.0 and 4.9% organic matter. Sixteen percent of the soils submitted for home and garden tested >4.9% in organic matter while 17% had less than 2% organic matter. Of the samples submitted for commercial production, 29% contained between 1-2% organic matter, while 50% had between 2 and 3% organic matter and 15% contained between 3 and 4% organic matter. In total, 92% of the samples had less than 4% organic matter.

Soil pH in water (1:1 extraction ratio) varied from pH 4.1 to 10.5 with the median for home and garden samples ranging from pH 7.1 to pH 7.4 and for samples submitted for commercial production ranging from pH 6.4 to pH 6.7. Of the home and garden samples, 92% had a pH of 6.0 or higher. For the samples submitted for commercial production, this was 90% while 10% tested between pH 5.0 and pH 5.9.

Extractable nutrients such as phosphorus (P), potassium (K), magnesium (Mg), calcium (Ca), iron (Fe), manganese (Mn), and zinc (Zn) were measured using the Morgan solution and extraction method (Morgan, 1941). This solution contains sodium acetate buffered at a pH of 4.8.

Soil test P levels of <1 lb P/acre are classified as very low. Between 1-3 lbs P/acre is low. Medium is between 4-8 lbs P/acre. High testing soils have P levels between 9 and 39 lbs P/acre and soils with >39 lbs P/acre are classified as very high. Of the home and garden samples, 6% tested low, 13% tested medium, 42% tested high and 39% tested very high. This meant that 81% tested high or very high in P.

Phosphorus levels for samples for commercial production in Monroe County were skewed towards high and very high levels as compared to the state average in the 1995-2001 period. Ten percent of the samples tested very high in P. Eight percent were low in P, 26% tested medium for P while 56% of the submitted samples were classified as high in soil test P. This means that 66% tested high or very high in P. There were no clear trends in P levels over the 7 years.

Classifications for potassium depend on soil management group. The fine-textured soils of soil management group 1 have a greater K supplying capacity than the coarse textured sandy soils (soil management group 5). Classification for each of the management groups in the above table represent very low, low, medium, high and very high. So for example for soil management group 5 and 6, <60 lbs K/acre means the soil is very low in K, between 60 and 114 lbs K/acre is low, 115-164 lbs K/acre is medium, 165-269 lbs K/acre is high and >269 lbs K/acre is classified as very high (see the table below).

Potassium classifications depend on soil test K levels and soil management group.

Soil Management Group	Potassium Soil Test Value (Morgan extraction in lbs K/acre)				
	Very low	Low	Medium	High	Very High
1	<35	35-64	65-94	95-149	>149
2	<40	40-69	70-99	100-164	>164
3	<45	45-79	80-119	120-199	>199
4	<55	55-99	100-149	150-239	>239
5 and 6	<60	60-114	115-164	165-269	>269

Of the home and garden samples, 15% were classified as very low or low in potassium. Nineteen percent tested medium, 30% high and 35% very high. For samples submitted for commercial production, 1% tested very low in K, 8% tested low, 16% tested medium, 37% tested high and 37% tested very high in potassium with the remainder being of unknown K classification. As with phosphorus, there were no trends over the 7 years of soil sampling.

Soils test very low for magnesium if Morgan extractable Mg is less than 20 lbs Mg/acre. Low testing soils have 20-65 lbs Morgan Mg per acre. Soils with 66-100 lbs Mg/acre test medium for magnesium. High testing soils have 101-199 lbs Mg/acre while soils with more than 200 lbs Mg/acre in the Morgan extraction are classified as very high in Mg. Magnesium levels ranged from 21 to almost 15,000 lbs Mg/acre (Morgan extraction) in a sample that had over 40% organic matter. There were no samples that tested very low in Mg. Most soils tested high or very high for Mg (98% of the homeowner soils and 96% of the soils of the commercial growers). No more than 2% of the homeowner soils and 4% of the commercial growers' soil tested low or medium in Mg. Thus, magnesium deficiency is not likely to occur in Monroe County provided the soil pH is maintained in the desirable range.

Soils with more than 50 lbs Morgan extractable Fe per acre test excessive for Fe. Anything lower than 50 lbs Fe/acre is considered normal. Iron levels fell for 98-100% in the normal range with 2% of the home and garden samples and only 2 of the samples for commercial production testing excessive for Fe. Similarly, most soils (96-100%) for both groups tested normal for manganese. Soils with more than 100 lbs Morgan extractable Mn per acre are classified as excessive in Mn. Anything less than 100 lbs Mn per acre is classified as normal. Soils with less than 0.5 lb zinc per acre in the Morgan extraction are classified as low in Zn. Medium testing soils have between 0.5 and 1 lb of Morgan extractable Zn per acre. If more than 1 lb of Zn/acre is extracted with the Morgan solution, the soil tests high in Zn. For the home and garden samples, 90% tested high for zinc while 9% tested medium and 1% was low in zinc. Of the samples for commercial production, 4% tested low in zinc, 34% tested medium while 61% were high in zinc.

In the following sections, the summary tables for each of the soil fertility indicators described above are given. The appendix contains the crop codes used in section 2.

Reference

- Morgan, M.F. 1941. Chemical soil diagnosis by the universal soil testing system. Connecticut Agricultural Experimental Station. Bulletin 450.

2. Cropping Systems

2.1 Samples for Home and Garden

Crops for which recommendations are requested by homeowners:

	1995	1996	1997	1998	1999	2000	2001	Total	%
ALG	6	5	9	3	7	5	3	38	3
APR	0	0	0	0	0	0	1	1	0
ATF	5	11	11	9	13	27	9	85	6
BLU	0	0	2	0	0	0	2	4	0
CEM	0	0	0	0	0	4	0	4	0
FAR	1	0	0	1	0	0	0	2	0
FLA	2	15	5	3	3	3	4	35	2
GEN	1	3	1	2	2	11	0	20	1
GPV	0	0	0	0	1	0	0	1	0
HRB	0	0	0	0	0	0	1	1	0
LAW	57	65	70	61	84	178	108	623	44
MVG/MIX	19	33	49	41	31	25	45	243	17
OTH	2	1	1	1	10	9	14	38	3
PER	7	8	21	12	9	13	10	80	6
PRK	1	0	6	1	0	2	0	10	1
PTO	0	0	1	0	0	0	0	1	0
PUM	0	0	0	1	0	1	0	2	0
ROD	1	0	0	3	0	1	0	5	0
ROS	3	5	6	3	3	6	2	28	2
ROU	0	0	1	0	0	2	1	4	0
RSP	0	0	2	0	0	3	0	5	0
SAG	23	15	31	23	14	11	29	146	10
SUB	0	0	1	0	0	0	0	1	0
SPB	0	0	0	1	0	0	0	1	0
TOM	0	0	1	0	0	0	0	1	0
TRF	1	0	2	0	1	0	1	5	0
Unknown	0	0	0	7	5	9	1	22	2
Total	129	161	220	172	183	310	231	1406	100

See Appendix for Cornell crop codes.

2.2 Samples for Commercial Production

Crops for which recommendations are requested for commercial production:

Current year crop	1995	1996	1997	1998	1999	2000	2001	Total	%
ABE/ABT	0	2	0	1	0	1	0	4	0
AGE/AGT	9	7	6	3	2	1	3	31	3
ALE/ALT	4	9	6	0	5	2	4	30	3
APP	7	2	7	17	10	19	4	66	7
BCE/BCT	0	0	2	0	0	1	0	3	0
BDR/BND	0	0	3	0	0	0	2	5	1
BET	0	0	3	0	0	0	0	3	0
BLB	0	0	0	0	0	0	1	1	0
BNS	0	0	0	0	0	49	0	49	5
BGE/BGT	0	0	1	0	0	0	0	1	0
BRS	1	0	0	0	0	0	0	1	0
BTT	0	0	0	3	0	0	0	3	0
BUK	0	0	0	0	1	0	0	1	0
CBP	2	16	17	25	15	6	8	89	10
CBS	0	0	2	0	0	0	0	2	0
CGE/CGT	0	0	4	0	0	0	0	4	0
CKS	0	0	2	0	0	0	0	2	0
CLE/CLT	0	0	0	0	1	0	1	2	0
COG/COS	10	37	28	20	10	0	6	111	12
EGG	0	0	1	0	0	0	0	1	0
GPV	0	0	0	1	0	0	0	1	0
GRE/GRT	0	0	2	4	1	1	0	8	1
MIX	1	0	7	0	1	0	2	11	1
OAS	0	0	0	0	0	0	2	2	0
OAT	1	0	1	2	1	1	0	6	1
ONP	0	0	0	0	1	0	0	1	0
PCH	0	2	2	5	1	1	0	11	1
PEA	0	1	0	4	17	20	2	44	5
PEP	1	0	0	0	0	0	1	2	0
PGE/PGT	1	0	1	0	0	2	1	5	1
PIE/PIT	0	0	4	0	0	0	1	5	1
PLE/PLT	0	0	0	0	1	0	2	3	0
PNE/PNT	0	0	0	0	0	1	0	1	0
POT	18	8	5	5	0	7	0	43	5
PUM	4	3	7	8	5	8	10	45	5

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Current year crop	1995	1996	1997	1998	1999	2000	2001	Total	%
RSS	1	1	2	0	0	0	1	5	1
RYC	0	2	1	0	0	0	2	5	1
RYS	0	0	0	0	1	0	1	2	0
SOY	0	0	7	7	13	1	19	47	5
SQW	0	0	3	0	0	0	0	3	0
STS	5	2	9	10	10	7	5	48	5
SUN	0	0	0	2	0	0	0	2	0
SWC	2	3	15	15	8	5	29	77	8
TME	0	0	0	0	0	7	0	7	1
TOM	0	1	0	2	0	0	0	3	0
TRE/TRT	4	2	0	3	1	0	3	13	1
WHS	0	0	9	0	2	0	0	11	1
WHT	1	41	41	0	1	0	0	84	9
Unknown	0	0	2	0	0	1	0	3	0
Total	72	139	200	137	108	141	110	907	100

Notes:

See Appendix for Cornell crop codes.

3. Soil Types

3.1 Samples for Home and Garden

Soil types (soil management groups) for home and garden samples:

	1995	1996	1997	1998	1999	2000	2001	Total
SMG 1 (clayey)	0	0	0	0	0	0	0	0
SMG 2 (silty)	44	50	52	58	54	58	62	378
SMG 3 (silt loam)	26	26	35	37	44	91	66	325
SMG 4 (sandy loam)	20	51	59	44	40	88	54	356
SMG 5 (sandy)	39	34	74	33	45	73	49	347
SMG 6 (mucky)	0	0	0	0	0	0	0	0
Total	129	161	220	172	183	310	231	1406

3.2 Samples for Commercial Production

Soil series for samples submitted for commercial production:

Name	SMG	1995	1996	1997	1998	1999	2000	2001	Total
Alton	5	4	1	6	2	0	1	1	15
Appleton	2	3	0	4	2	0	3	0	12
Arkport	4	1	1	2	1	1	0	1	7
Benson	4	0	0	2	0	0	2	0	4
Brockport	1	0	1	1	0	0	0	0	2
Canandaigua	3	1	0	3	1	0	4	0	9
Cayuga	2	0	2	2	2	4	1	8	19
Cazenovia	2	1	8	3	0	1	0	3	16
Churchville	2	0	1	1	0	1	2	0	5
Claverack	4	0	3	3	3	3	11	7	30
Collamer	3	11	17	12	22	7	8	8	85
Colonie	5	1	2	3	4	0	11	2	23
Cosad	4	0	0	0	0	1	0	0	1
Dunkirk	3	1	0	4	0	2	2	1	10
Edwards	6	0	0	0	0	2	0	0	2
Elnora	5	0	9	0	1	1	5	1	17
Galen	4	3	4	7	6	4	7	6	37
Genesee	2	0	0	0	2	0	1	0	3
Hamlin	2	0	0	1	3	0	0	1	5
Hilton	2	18	24	33	42	31	23	27	198
Honeoye	2	1	2	4	1	7	0	7	22
Ira	4	7	0	0	0	0	0	0	7
Lakemont	1	0	0	1	1	0	0	0	2
Lamson	4	0	0	10	0	0	1	0	11
Lima	2	2	9	1	2	3	1	11	29
Lockport	2	0	0	3	0	0	0	0	3
Lyons	2	0	0	0	0	1	0	0	1
Madalin	1	0	1	0	0	0	0	0	1
Madrid	4	3	3	2	8	1	2	4	23
Massena	4	0	0	0	1	0	0	0	1
Minoa	4	0	0	1	2	1	0	2	6
Niagara	3	0	4	8	2	5	3	0	22
Odessa	2	1	0	4	2	2	5	0	22
Ontario	2	5	37	61	18	24	38	11	194
Ovid	2	0	2	2	0	0	0	1	5
Palmyra	3	0	1	2	5	2	2	0	12

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Name	SMG	1995	1996	1997	1998	1999	2000	2001	Total
Phelps	3	2	0	1	0	1	1	0	5
Rhinebeck	2	0	0	0	1	0	0	0	1
Riga	2	2	0	3	0	0	1	1	7
Schoharie	1	1	0	4	2	0	5	0	12
Wampsville	3	1	2	0	0	1	0	2	6
Wassaic	4	1	0	0	0	0	0	3	4
Wayland	2	0	0	2	0	0	0	0	2
Unknown	-	2	5	4	1	2	1	2	17
Total	-	72	139	200	137	108	141	110	907

4. Organic Matter

4.1 Samples for Home and Garden

Number of home and garden samples within each % organic matter range:

	<1%	1.0-1.9	2.0-2.9	3.0-3.9	4.0-4.9	5.0-5.9	6.0-6.9	>6.9	Total
1995	1	29	31	31	16	3	7	11	129
1996	5	21	54	41	13	12	4	11	161
1997	3	31	61	58	33	8	9	17	220
1998	7	27	42	29	27	15	7	18	172
1999	2	30	52	46	21	13	5	14	183
2000	10	45	84	89	47	15	5	15	310
2001	6	29	64	51	41	14	7	19	231
Total	34	212	388	345	198	80	44	105	1406

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.9	0.7	0.4	0.1	0.7	0.3	0.4	
Highest:	35.9	15.6	19.7	33.8	30.1	28.6	19.4	
Mean:	3.9	3.5	3.8	4.2	3.9	3.6	3.8	
Median:	3.0	3.0	3.1	3.3	3.1	3.1	3.1	

Percent of home and garden samples within each % organic matter range:

	<1%	1.0-1.9	2.0-2.9	3.0-3.9	4.0-4.9	5.0-5.9	6.0-6.9	>6.9	Total
1995	1	22	24	24	12	2	5	9	100
1996	3	13	34	25	8	7	2	7	100
1997	1	14	28	26	15	4	4	8	100
1998	4	16	24	17	16	9	4	10	100
1999	1	16	28	25	11	7	3	8	100
2000	3	15	27	29	15	5	2	5	100
2001	3	13	28	22	18	6	3	8	100
Total	2	15	28	25	14	6	3	7	100

4.2 Samples for Commercial Production

Number of samples for commercial production within each % organic matter range:

	<1%	1.0-1.9	2.0-2.9	3.0-3.9	4.0-4.9	5.0-5.9	6.0-6.9	>6.9	Total
1995	0	13	35	18	6	0	0	0	72
1996	0	44	74	18	2	1	0	0	139
1997	1	64	98	29	2	2	0	4	200
1998	2	34	66	27	6	1	0	1	137
1999	1	33	57	10	3	1	0	3	108
2000	0	58	54	15	2	3	0	9	141
2001	0	16	68	23	2	0	0	1	110
Total	4	262	452	140	23	8	0	18	907

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1.3	1.0	0.9	0.5	0.9	1.0	1.0	
Highest:	4.7	5.6	17.5	31.8	20.0	13.9	10.8	
Mean:	2.7	2.3	2.5	2.7	2.6	2.8	2.6	
Median:	2.6	2.3	2.3	2.3	2.2	2.1	2.7	

Percent of samples for commercial production within each % organic matter range:

	<1%	1.0-1.9	2.0-2.9	3.0-3.9	4.0-4.9	5.0-5.9	6.0-6.9	>6.9	Total
1995	0	18	49	25	8	0	0	0	100
1996	0	32	53	13	1	1	0	0	100
1997	1	32	49	15	1	1	0	2	100
1998	1	25	48	20	4	1	0	1	100
1999	1	31	53	9	3	1	0	3	100
2000	0	41	38	11	1	2	0	6	100
2001	0	15	62	21	2	0	0	1	100
Total	0	29	50	15	3	1	0	2	100

5. pH

5.1 Samples for Home and Garden

Number of home and garden samples within each pH range:

	<4.5	4.5-4.9	5.0-5.4	5.5-5.9	6.0-6.4	6.5-6.9	7.0-7.4	7.5-7.9	8.0-8.4	>8.4	Total
1995	0	2	1	5	8	16	35	54	8	0	129
1996	0	0	1	10	14	31	44	50	11	0	161
1997	3	4	5	8	30	41	69	54	4	2	220
1998	0	2	3	8	13	30	73	38	2	3	172
1999	1	4	6	9	12	28	49	67	7	0	183
2000	1	5	6	14	24	37	90	112	21	0	310
2001	0	2	9	12	25	25	67	76	15	0	231
Total	5	19	31	66	126	208	427	451	68	5	1406

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	4.6	5.4	4.1	4.8	4.3	4.4	4.8	
Highest:	8.3	8.3	10.5	9.5	8.2	8.3	8.1	
Mean:	-	-	-	-	-	-	-	
Median:	7.4	7.3	7.1	7.2	7.3	7.4	7.3	

Percent of home and garden samples within each pH range:

	<4.5	4.5-4.9	5.0-5.4	5.5-5.9	6.0-6.4	6.5-6.9	7.0-7.4	7.5-7.9	8.0-8.4	>8.4	Total
1995	0	2	1	4	6	12	27	42	6	0	100
1996	0	0	1	6	9	19	27	31	7	0	100
1997	1	2	2	4	14	19	31	25	2	1	100
1998	0	1	2	5	8	17	42	22	1	2	100
1999	1	2	3	5	7	15	27	37	4	0	100
2000	0	2	2	5	8	12	29	36	7	0	100
2001	0	1	4	5	11	11	29	33	6	0	100
Total	0	1	2	5	9	15	30	32	5	0	100

5.2 Samples for Commercial Production

Number of samples for commercial production within each pH range:

	<4.5	4.5-4.9	5.0-5.4	5.5-5.9	6.0-6.4	6.5-6.9	7.0-7.4	7.5-7.9	8.0-8.4	>8.4	Total
1995	0	0	2	5	17	31	10	5	2	0	72
1996	0	0	2	17	42	55	19	4	0	0	139
1997*	0	2	4	12	84	60	32	3	0	0	197
1998	1	2	6	11	30	52	29	4	2	0	137
1999	0	0	0	6	24	45	23	10	0	0	108
2000	0	0	2	9	41	44	38	7	0	0	141
2001	0	0	2	16	26	32	20	14	0	0	110
Total	1	4	18	76	264	319	171	47	4	0	904

*Three samples were not analyzed for pH in 1997.

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	5.2	5.2	4.7	4.1	5.6	5.2	5.3	
Highest:	8.1	7.9	7.6	8.4	7.8	7.8	7.9	
Mean:	-	-	-	-	-	-	-	
Median:	6.6	6.5	6.4	6.6	6.7	6.6	6.6	

Percent of samples for commercial production within each pH range:

	<4.5	4.5-4.9	5.0-5.4	5.5-5.9	6.0-6.4	6.5-6.9	7.0-7.4	7.5-7.9	8.0-8.4	>8.4	Total
1995	0	0	3	7	24	43	14	7	3	0	100
1996	0	0	1	12	30	40	14	3	0	0	100
1997	0	1	2	6	43	30	16	2	0	0	100
1998	1	1	4	8	22	38	21	3	1	0	100
1999	0	0	0	6	22	42	21	9	0	0	100
2000	0	0	1	6	29	31	27	5	0	0	100
2001	0	0	2	15	24	29	18	13	0	0	100
Total	0	0	2	8	29	35	19	5	0	0	100

6. Phosphorus

6.1 Samples for Home and Garden

Number of home and garden samples within each range Morgan extractable P range (lbs/acre Morgan P):

	<1	1-3	4-8	9-39	40-60	61-80	81-100	101-150	151-200	>200	Total
	VL	L	M	H	VH	VH	VH	VH	VH	VH	
1995	0	7	27	55	11	6	7	7	5	4	129
1996	0	10	28	56	21	10	6	12	7	11	161
1997	0	8	14	76	44	14	12	16	7	29	220
1998	0	3	21	75	18	14	10	13	2	16	172
1999	0	9	14	81	28	17	5	13	6	10	183
2000	0	22	42	150	37	21	5	10	8	15	310
2001	0	23	33	91	22	16	7	13	6	20	231
Total	0	82	179	584	181	98	52	84	41	105	1406

VL = very low, L = low, M = medium, H = high, VH = very high.

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	2	1	1	
Highest:	588	762	928	1946	1030	519	836	
Mean:	46	64	92	90	72	48	65	
Median:	23	31	42	29	34	25	24	

Percent of home and garden samples within each Morgan extractable phosphorus range:

	<1	1-3	4-8	9-39	40-60	61-80	81-100	101-150	151-200	>200	Total
	VL	L	M	H	VH	VH	VH	VH	VH	VH	
1995	0	5	21	43	9	5	5	5	4	3	100
1996	0	6	17	35	13	6	4	7	4	7	100
1997	0	4	6	35	20	6	5	7	3	13	100
1998	0	2	12	44	10	8	6	8	1	9	100
1999	0	5	8	44	15	9	3	7	3	5	100
2000	0	7	14	48	12	7	2	3	3	5	100
2001	0	10	14	39	10	7	3	6	3	9	100
Total	0	6	13	42	13	7	4	6	3	7	100

VL = very low, L = low, M = medium, H = high, VH = very high.

6.2 Samples for Commercial Production

Number of samples submitted for commercial production within each Morgan extractable phosphorus (lbs P/acre) range:

	<1	1-3	4-8	9-39	40-60	61-80	81-100	101-150	151-200	>200	Total
	VL	L	M	H	VH	VH	VH	VH	VH	VH	
1995	0	10	19	31	10	1	0	1	0	0	
1996	0	8	44	78	8	1	0	0	0	0	
1997	0	5	45	134	4	7	2	1	0	2	
1998	0	15	32	71	9	4	2	2	1	1	
1999	0	12	34	54	3	0	3	0	0	2	
2000	0	10	35	82	5	2	0	0	0	7	
2001	0	15	31	59	3	1	0	0	0	1	
Total	0										

VL = very low, L = low, M = medium, H = high, VH = very high.

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	2	1	2	1	1	
Highest:	108	61	290	1337	345	435	264	
Mean:	18	15	23	30	20	34	16	
Median:	11	11	16	11	9	12	10	

Percent of samples submitted for commercial production within each Morgan P range:

	<1	1-3	4-8	9-39	40-60	61-80	81-100	101-150	151-200	>200	Total
	VL	L	M	H	VH	VH	VH	VH	VH	VH	
1995	0	14	26	43	14	1	0	1	0	0	100
1996	0	6	32	56	6	1	0	0	0	0	100
1997	0	3	23	67	2	4	1	1	0	1	100
1998	0	11	23	52	7	3	1	1	1	1	100
1999	0	11	31	50	3	0	3	0	0	2	100
2000	0	7	25	58	4	1	0	0	0	5	100
2001	0	14	28	54	3	1	0	0	0	1	100
Total	0	8	26	56	5	2	1	0	0	1	100

VL = very low, L = low, M = medium, H = high, VH = very high.

7. Potassium

7.1 Samples for Home and Garden

Number of home and garden samples within each K range (lbs K/acre Morgan extraction):

Soil Management Group 1						
	<35	35-64	65-94	95-149	>149	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
Total (#)	0	0	0	0	0	0
Total (%)	-	-	-	-	-	-
Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
1995	0	5	4	18	17	44
1996	0	10	3	18	19	50
1997	0	2	5	20	25	52
1998	0	0	5	15	38	58
1999	0	0	5	17	32	54
2000	2	3	8	21	24	58
2001	2	7	10	19	24	62
Total (#)	4	27	40	128	179	378
Total (%)	1	7	11	34	47	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	2	6	11	7	26
1996	0	2	5	12	7	26
1997	0	2	6	13	14	35
1998	0	3	4	8	22	37
1999	2	3	3	10	26	44
2000	1	11	18	34	27	91
2001	0	4	16	22	24	66
Total (#)	3	27	58	110	127	325
Total (%)	1	8	18	34	39	100

Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
	Very Low	Low	Medium	High	Very High	
1995	0	4	2	8	6	20
1996	1	2	10	16	22	51
1997	1	11	11	14	22	59
1998	2	4	11	12	15	44
1999	1	4	7	13	15	40
2000	1	14	22	29	22	88
2001	0	7	12	13	22	54
Total (#)	6	46	75	105	124	356
Total (%)	2	13	21	29	35	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
1995	1	8	15	7	8	39
1996	3	12	8	8	3	34
1997	3	25	21	13	12	74
1998	1	4	10	9	9	33
1999	4	10	13	6	12	45
2000	5	16	16	29	7	73
2001	4	14	15	11	5	49
Total (#)	21	89	98	83	56	347
Total (%)	6	26	28	24	16	100
Soil Management Group 6						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
Total (#)	0	0	0	0	0	0
Total (%)	-	-	-	-	-	-

Number of home and garden samples within each potassium classification:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
1995	1	19	27	44	38	129
1996	4	26	26	54	51	161
1997	4	40	43	60	73	220
1998	3	11	30	44	84	172
1999	7	17	28	46	85	183
2000	9	44	64	113	80	310
2001	6	32	53	65	75	231
Total #	34	189	271	426	486	1406

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	42	34	30	42	26	15	25	
Highest:	4124	2065	5102	3619	2421	2066	4410	
Mean:	215	211	274	267	268	212	239	
Median:	151	164	156	186	188	158	153	

Percent of samples submitted for home and garden within each potassium classification.

Summary (%)	Very Low	Low	Medium	High	Very High	Total
1995	1	15	21	34	29	100
1996	2	16	16	34	32	100
1997	2	18	20	27	33	100
1998	2	6	17	26	49	100
1999	4	9	15	25	46	100
2000	3	14	21	36	26	100
2001	3	14	23	28	32	100
Grand Total	2	13	19	30	35	100

7.2 Samples for Commercial Production

Number of samples submitted for commercial production within each potassium (lbs K/acre Morgan extraction) range:

Soil Management Group 1						
	<35	35-64	65-94	95-149	>149	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	1	0	1
1996	0	0	1	1	0	2
1997	0	0	1	4	1	6
1998	0	1	0	2	0	3
1999	0	0	0	0	0	0
2000	0	0	1	1	3	5
2001	0	0	0	0	0	0
Total (#)	0	1	3	9	4	17
Total (%)	0	6	18	53	24	100
Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
1995	0	1	5	15	12	33
1996	1	9	8	23	44	85
1997	0	13	22	51	38	124
1998	0	1	6	31	37	75
1999	0	3	4	31	36	74
2000	0	3	10	31	31	75
2001	0	2	10	27	31	70
Total (#)	1	32	65	209	229	536
Total (%)	0	6	12	39	43	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	5	8	3	16
1996	0	2	7	12	3	24
1997	0	4	7	13	6	30
1998	0	0	9	6	15	30
1999	0	2	4	9	3	18
2000	0	1	4	5	10	20
2001	0	3	3	4	1	11
Total (#)	0	12	39	57	41	149
Total (%)	0	8	26	38	28	100

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Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
	Very Low	Low	Medium	High	Very High	
1995	0	1	3	4	7	15
1996	0	1	4	2	4	11
1997	2	5	3	10	7	27
1998	2	4	3	5	7	21
1999	0	0	3	4	4	11
2000	0	3	7	10	3	23
2001	0	5	5	11	2	23
Total (#)	4	19	28	46	34	131
Total (%)	3	15	21	35	26	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	3	2	5
1996	0	2	4	4	2	12
1997	0	2	1	5	1	9
1998	0	1	0	1	5	7
1999	0	0	0	1	0	1
2000	0	0	2	4	11	17
2001	0	1	2	0	1	4
Total (#)	0	6	9	18	22	55
Total (%)	0	11	16	33	40	100
Soil Management Group 6						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	2	2
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
Total (#)	0	0	0	0	2	2
Total (%)	0	0	0	0	100	100

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Number of samples submitted for commercial production within each potassium classification.

Summary (#)	Very Low	Low	Medium	High	Very High	Un-known	Total
1995	0	2	13	31	24	2	72
1996	1	14	24	42	53	5	139
1997	2	24	34	83	53	4	200
1998	2	7	18	45	64	1	137
1999	0	5	11	45	45	2	108
2000	0	7	24	51	58	1	141
2001	0	11	20	42	35	2	110
Grand Total	5	70	144	339	332	17	907

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	58	36	32	41	43	54	54	
Highest:	647	869	1276	2406	13495	2137	887	
Mean:	202	170	167	250	328	218	173	
Median:	160	149	149	172	165	166	146	

Percent of samples submitted for commercial production within each potassium classification.

% summary	Very Low	Low	Medium	High	Very High	Un-known	Total
1995	0	3	18	43	33	3	100
1996	1	10	17	30	38	4	100
1997	1	12	17	42	27	2	100
1998	1	5	13	33	47	1	100
1999	0	5	10	42	42	2	100
2000	0	5	17	36	41	1	100
2001	0	10	18	38	32	2	100
Grand Total	1	8	16	37	37	2	100

8. Magnesium

8.1 Samples for Home and Garden

Number of home and garden samples within each Mg range (lbs Morgan Mg/acre):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	3	0	7	119	129
1996	0	0	0	7	154	161
1997	0	2	5	10	203	220
1998	0	1	1	8	162	172
1999	0	3	4	12	164	183
2000	0	4	2	22	282	310
2001	0	1	3	17	210	231
Total	0	14	15	83	1294	1406

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	22	108	56	33	37	21	63	
Highest:	2255	1855	2357	4324	14782	1882	3829	
Mean:	547	538	541	588	628	504	514	
Median:	501	476	483	495	512	478	449	

Percent of home and garden samples within each Mg range (lbs Morgan Mg/acre):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	2	0	5	92	100
1996	0	0	0	4	96	100
1997	0	1	2	5	92	100
1998	0	1	1	5	94	100
1999	0	2	2	7	90	100
2000	0	1	1	7	91	100
2001	0	0	1	7	91	100
Total	0	1	1	6	92	100

8.2 Samples for Commercial Production

Number of samples submitted for commercial production within each Mg range (lbs Mg/acre Morgan extraction):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	10	62	72
1996	0	6	10	20	103	139
1997	0	0	5	38	157	200
1998	0	2	0	31	104	137
1999	0	0	2	17	89	108
2000	0	1	2	17	121	141
2001	0	2	2	12	94	110
Total	0	11	21	145	730	907

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	110	41	71	26	81	36	53	
Highest:	1693	1213	2806	3455	1812	1375	1420	
Mean:	415	311	335	342	406	393	397	
Median:	327	278	288	277	330	328	342	

Percent of samples submitted for commercial production within each magnesium range (lbs Mg/acre Morgan extraction):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	14	86	100
1996	0	4	7	14	74	100
1997	0	0	3	19	79	100
1998	0	1	0	23	76	100
1999	0	0	2	16	82	100
2000	0	1	1	12	86	100
2001	0	2	2	11	85	100
Total	0	1	2	16	80	100

9. Iron

9.1 Samples for Home and Garden

Iron (lbs Fe/acre Morgan extraction) in samples for home and garden:

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
1995	123	6	129
1996	156	5	161
1997	215	5	220
1998	167	5	172
1999	179	4	183
2000	305	5	310
2001	227	4	231
Total	1372	34	1406

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	95	5	100
	97	3	100
	98	2	100
	97	3	100
	98	2	100
	98	2	100
	98	2	100
	98	2	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	1	1	1	
Highest:	93	84	1554	118	344	225	480	
Mean:	12	10	16	10	11	8	10	
Median:	6	6	5	5	6	5	5	

9.2 Samples for Commercial Production

Iron (lbs Fe/acre Morgan extraction) in samples submitted for commercial production:

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
1995	71	1	172
1996	138	1	139
1997	200	0	200
1998	137	0	137
1999	108	0	108
2000	141	0	141
2001	110	0	110
Total	905	2	907

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	99	1	100
	99	1	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	1	1	1	
Highest:	63	80	49	45	46	32	32	
Mean:	8	9	8	9	7	5	7	
Median:	6	6	5	6	5	4	5	

10. Manganese

10.1 Samples for Home and Garden

Manganese (lbs Mn/acre Morgan extraction) in samples for home and garden:

Total number of samples:

	0-99	>99	Total
	Normal	Excessive	
1995	115	14	129
1996	153	8	161
1997	214	6	220
1998	164	8	172
1999	176	7	183
2000	298	12	310
2001	227	4	231
Total	1347	59	1406

Percentages:

	0-99	>99	Total
	Normal	Excessive	
	89	11	100
	95	5	100
	97	3	100
	95	5	100
	96	4	100
	96	4	100
	98	2	100
	96	4	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	6	6	4	3	8	3	7	
Highest:	1134	146	162	214	429	307	760	
Mean:	55	44	42	45	43	36	44	
Median:	35	40	38	38	33	28	36	

10.2 Samples for Commercial Production

Manganese (lbs Mn/acre Morgan extraction) in samples for commercial production:

Total number of samples:

	0-99	>99	Total
	Normal	Excessive	
1995	71	1	172
1996	139	0	139
1997	199	1	200
1998	137	0	137
1999	108	0	108
2000	141	0	141
2001	110	0	110
Total	905	2	907

Percentages:

	0-99	>99	Total
	Normal	Excessive	
	99	1	100
	100	0	100
	100	1	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	7	7	5	5	6	4	6	
Highest:	115	61	129	96	70	89	73	
Mean:	26	27	33	26	26	20	30	
Median:	23	25	31	23	25	18	30	

11. Zinc

11.1 Samples for Home and Garden

Zinc (lbs Zn/acre Morgan extraction) in samples for home and garden:

Total number of samples:					Percentages:				
	<0.5	0.5-1.0	>1	Total	<0.5	0.5-1.0	>1	Total	
	Low	Medium	High		Low	Medium	High		
1995	1	13	115	129	1	10	89	100	
1996	1	17	143	161	1	11	89	100	
1997	0	13	207	220	0	6	94	100	
1998	1	11	160	172	1	6	93	100	
1999	3	16	164	183	2	9	90	100	
2000	3	35	272	310	1	11	88	100	
2001	5	26	200	231	2	11	87	100	
Total	14	131	1261	1406	1	9	90	100	

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.4	0.3	0.5	0.4	0.2	0.3	0.1	
Highest:	574.6	241.9	194.2	206.4	311.0	303.3	177.1	
Mean:	14.0	10.9	16.0	13.0	15.5	11.4	10.8	
Median:	3.1	4.1	7.3	4.3	4.7	3.0	3.8	

11.2 Samples for Commercial Production

Zinc (lbs Zn/acre Morgan extraction) in samples for commercial production:

Total number of samples:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
1995	2	29	41	72
1996	4	62	73	139
1997	8	58	134	200
1998	17	46	74	137
1999	3	34	71	108
2000	4	57	80	141
2001	2	24	84	110
Total	40	310	557	907

Percentages:

<0.5	0.5-1.0	>1	Total
Low	Medium	High	
3	40	57	100
3	45	53	100
4	29	67	100
12	34	54	100
3	31	66	100
3	40	57	100
2	22	76	100
4	34	61	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.3	0.3	0.4	0.1	0.1	0.2	0.3	
Highest:	509.3	55.8	201.0	2793.0	74.9	56.0	41.0	
Mean:	11.7	2.1	3.0	40.2	2.8	3.4	2.6	
Median:	1.1	1.1	1.3	1.1	1.3	1.1	1.6	

Appendix: Cornell Crop Codes

Crop codes are used in the Cornell Nutrient Analyses Laboratory.

Crop Code	Crop Description
Alfalfa	
ABE	Alfalfa trefoil grass, Establishment
ABT	Alfalfa trefoil grass, Established
AGE	Alfalfa grass, Establishment
AGT	Alfalfa grass, Established
ALE	Alfalfa, Establishment
ALT	Alfalfa, Established
Birdsfoot	
BCE	Birdsfoot trefoil clover, Establishment
BCT	Birdsfoot trefoil clover, Established
BGE	Birdsfoot trefoil grass, Establishment
BGT	Birdsfoot trefoil grass, Established
BSE	Birdsfoot trefoil seed, Establishment
BST	Birdsfoot trefoil seed, Established
BTE	Birdsfoot trefoil, Establishment
BTT	Birdsfoot trefoil, Established
Barley	
BSP	Spring barley
BSS	Spring barley with legumes
BUK	Buckwheat
BWI	Winter barley
BWS	Winter barley with legumes
Clover	
CGE	Clover grass, Establishment
CGT	Clover grass, Established
CLE	Clover, Establishment
CLT	Clover, Established
CSE	Clover seed production, Establishment
CST	Clover seed production, Established

Crop Code	Crop Description
Corn	
COG	Corn grain
COS	Corn silage
Grasses, pastures, covercrops	
GIE	Grasses intensively managed, Establishment
GIT	Grasses intensively managed, Established
GRE	Grasses, Establishment
GRT	Grasses, Established
PGE	Pasture, Establishment
PGT	Pasture improved grasses, Established
PIE	Pasture intensively grazed, Establishment
PIT	Pasture intensively grazed, Established
PLE	Pasture with legumes, Establishment
PLT	Pasture with legumes, Established
PNT	Pasture native grasses
PNE	Pasture native grasses, Established
RYC	Rye cover crop
RYS	Rye seed production
TRP	Triticale peas
Small grains	
MIL	Millet
OAS	Oats with legume
OAT	Oats
SOF	Sorghum forage
SOG	Sorghum grain
SOY	Soybeans
SSH	Sorghum sudan hybrid
SUD	Sudangrass
WHS	Wheat with legume
WHT	Wheat
Others	
ALG	Azalea
APP	Apples
APR	Apricots

Crop Code	Crop Description
ATF	Athletic Field
ASP	Asparagus
BDR/BND	Beans, Dry
BLU/BLB	Blueberries
BNS	Beans, Snap
BRS	Broccoli, Seeded
CBP	Cabbage, Transplanted
CBS	Cabbage, Seeded
CEM	Cemetery
CKS	Cucumber, Seeded
EGG	Eggplants
END	Endives
FAR	Fairway
FLA	Flowering Annuals
GPV	Grapes, Vinifera
GRA	Grapes (homeowners)
GEN	Green
HRB	Herbs
IDL	Idle land
LAW	Lawn
LET	Lettuce
MIX/MVG	Mixed vegetables
MML	Muskmelon
ONP	Onions, Transplanted
ONS	Onion, Seeded
OTH	Other
PAR	Pears
PCH	Peaches
PEA	Peas
PEP	Peppers
PER	Perennials
PLM	Plums
POP	Popcorn
PRK	Park
POT/PTO	Potatoes
PUM	Pumpkins
ROD	Roadside
ROS	Roses
ROU	Rough

Crop Code	Crop Description
RSF	Raspberries, Fall
RSP	Raspberries (homeowners)
RSS	Raspberries, Summer
SAG	Ornamentals adapted to pH 6.0 to 7.5
SPB	Spring flowering bulbs
SQS	Squash, Summer
SQW	Squash, Winter
STE	Strawberries, Ever
STR	Strawberries (homeowners)
STS	Strawberries, Spring
SUB	Summer flowering bulbs
SUN	Sunflowers
SWC	Sweet corn
TOM	Tomatoes
TME	Tomatoes, Early
TRE	Christmas trees, Established
TRF	Tree fruits
TRT	Christmas trees, Topdressing