

Soil Sample Survey

Yates Co.

Samples analyzed by CNAL in 1995-2001



The long slopes and moderating influence of the Finger Lakes make Yates County an ideal area for grape production as well as forage and vegetable crop production. The deep lakes keep the surrounding hillsides cool in the spring and warm in the fall.

Summary compiled by

Quirine M. Ketterings, Hettie Krol, W. Shaw Reid, Nathan Herendeen



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

Ketterings, Q.M., H. Krol, W.S. Reid and N. Herendeen (2004). Yates County Soil Sample Survey 1995-2001. CSS Extension Bulletin E04-5. 40 pages.

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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

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Introduction

Yates County is located in the central Finger Lakes area of New York, south of Ontario County. It contains about 220,160 acres of land area. Roughly 50% of the area is used for farm production.

The northeastern one-third of the county lies in the Ontario Lowlands where it transitions to the Allegheny Plateau. The northern boundary joins Ontario County. The elevation is about 600 to 900 feet above sea level. The glacial till plain is gently undulating. It extends south to the Portage Escarpment where the elevation rises from the 600 to 900 foot level to about 1800 feet in the Allegheny Plateau.

The county's topography is dominated by the deep valleys of the Finger Lakes, beginning with Canandaigua on the west, Keuka in the center and Seneca Lake on the east. These valleys were deepened by the glacial advance against the north flowing rivers. When the ice receded, the deep valleys became the Finger Lakes. The central Finger Lakes drain northward and eastward into the Clyde River and eventually the Oswego River.

Yates County soils are extremely diverse. The soils in the north are dominated by high carbonate materials developed from the limestone parent material in the southern part of Ontario County. This was spread southward by the last glacial action that covered the county. In the south, soils formed from the low carbonate Devonian shale deposits. There is a large area of organic soils between Keuka and Canandaigua Lakes at the head of Flint Creek. This shallow wetland area was drained and is primarily used for onion production. There are several large areas of glacial outwash sediments.

The agriculture of Yates County is diverse. Dairy farming is the largest single generator of farm income. Thousands of acres are devoted to field and forage crops to support the dairy and livestock industry. Grapes have the second greatest agricultural value. Over 5000 acres of grapes are grown for bulk processing markets, fresh market, and the 17 wineries operating in the county. The deep, well-drained soils on the lake hillsides plus the climate moderating effect of the lakes make this area ideally suited for grape production. Processing vegetable crops comprise the next largest segment of the agricultural economy. Crops grown for processing include snap beans, sweet corn, red beets, kidney beans, cabbage, carrots, onions and potatoes.

Fresh market produce is a growing industry. Crops include all of the above plus cucumbers, squash, pumpkins, tomatoes, peppers, melons, cantaloupes, berries and tree fruit. Greenhouse production of ornamental and edible crops is the fastest growing sector within agriculture. Christmas trees are grown on a wide range of soils, especially the acid soils on the hills in the south. Livestock farmers produce and market beef, hogs and sheep.

Agriculture supports the county's other major industry-tourism. There are two wine trails in the county and over 50 retail farm stands. Family farms typify Yates County. While the number of farms in New York State is declining overall, Yates County is experiencing a renaissance in agriculture largely due to the influx of Mennonites and the growth of the wine industry. Dairy farms have increased from 100 in 1980 to over 220 in 2003. Greenhouse and produce production has increased over 600% between 2000 and 2003. The wine industry has increased approximately 15% per year in the last 10 years.

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

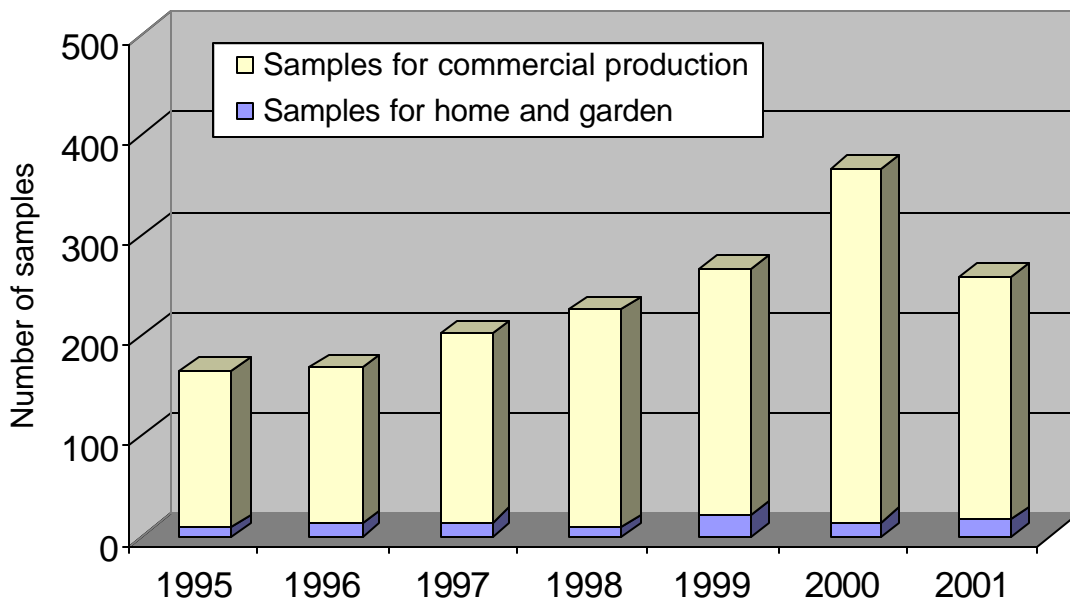
Nathan Herendeen, Senior Extension Associate
Field Crops CCE - North West New York Team

Peter Landre, Executive Director
Cornell Cooperative Extension of Yates County

Judson Reid, Cornell Cooperative Extension Educator of Yates County

1. General Survey Summary

This survey summarizes the soil test results from Yates 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 8735. Of these 8735 samples, 8611 (99%) were submitted to obtain fertilizer recommendations for commercial production while 124 samples (1%) were submitted as home and garden samples.



Homeowners		Commercial		Total
1995	9	1995	156	165
1996	13	1996	155	168
1997	14	1997	187	201
1998	9	1998	216	225
1999	21	1999	245	266
2000	15	2000	351	366
<u>2001</u>	<u>16</u>	<u>2001</u>	<u>244</u>	<u>260</u>
Total	97	Total	1554	1651

Many of the home and garden (28%) were submitted to request fertilizer recommendations for home garden vegetable recommendation while 20% of the samples were submitted to obtain recommendations for perennials and 16% came from home lawns. People submitting samples for commercial production requested fertilizer recommendations for corn silage or grain production (31%), alfalfa or alfalfa/grass mixtures (20%), and grapes (16%), while fewer samples were submitted for other crops including clover/grass and legume stands, small grains, onions, soybeans, sweet corn, vegetables and fruits.

Home and garden samples in Yates County were silty (34%), silt loams (25%), sandy loams (33%) or sandy (8%) 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, 47% belonged to soil management group 2. Two percent belonged to soil management group 1 while 44% were classified as

group 3 soils and 2% belonged to soil management group 6. Less than one percent was from soil management group 6, none of the soils belonged to soil management group 5 while the remainder of the soils could not be classified with regards to soil management group. The five most common soil series were Honeoye (12%), Lansing (11%), Langford (10%), Erie (7%) and Lima (6%).

Organic matter levels, as measured by loss on ignition, ranged from less than 1% to almost 55% with median values ranging from 3.1 to 4.6% organic matter for home and garden samples and 2.7 to 3.2% for samples submitted for commercial production. Sixty-five percent of the home and garden samples had between 2.0 and 4.9% organic matter with 18% testing between 2.0 and 2.9% organic matter, 20% between 3.0 and 3.9% organic matter, and 27% between 4.0 and 4.9% organic matter. Twenty-eight percent of the soils submitted for home and garden tested >4.9% in organic matter while 7% had less than 2.0% organic matter. Of the samples submitted for commercial production, 10% contained between 1.0 and 1.9% organic matter, while 45% had between 2.0 and 2.9% organic matter and 31% contained between 3.0 and 3.9% organic matter. In total, 86% of the samples had less than 4.0% organic matter.

Soil pH in water (1:1 extraction ratio) varied from pH 3.2 to pH 8.4 with the median for home and garden samples ranging from pH 6.8 to pH 7.3 and for samples submitted for commercial production ranging from pH 6.1 to pH 6.5. Of the home and garden samples, 82% had a pH of 6.0 or higher. For the samples submitted for commercial production, this was 80% while 13% 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, 10% tested low, 12% tested medium, 29% tested high and 48% tested very high. This meant that 77% tested high or very high in P. For the commercial samples, 10% tested very high in P. Twenty-one percent were low in P, 31% tested medium for P while

38% of the submitted samples were classified as high in soil test P. This means that 48% 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, 5% were classified as very low or low in potassium. Seven percent tested medium, 22% high and 66% very high. For samples submitted for commercial production, 5% tested low, 13% tested medium, 35% tested high and 46% 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 19 to 4359 lbs Mg/acre (Morgan extraction). There were

only three samples that tested very low in Mg. Most soils tested high or very high for Mg (99% of the homeowner soils and 96% of the soils of the commercial growers). No more than 1 homeowner soil and 3% of the commercial growers' soil tested low or medium in Mg. Thus, magnesium deficiency is not likely to occur in Yates 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 94-95% in the normal range with 6% of the home and garden samples and 5% of the samples for commercial production testing excessive for Fe. Similarly, most soils (95-99%) 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, 35% 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	%
ATF	0	0	0	0	1	0	3	4	4
BLU	0	0	1	1	1	0	0	3	3
FLA	0	1	1	2	0	1	0	5	5
GEN	0	0	1	0	0	2	0	3	3
GRA	0	0	0	0	0	1	1	2	2
LAW	3	3	4	1	0	3	2	16	16
MVG	4	3	3	3	8	3	3	27	28
OTH	0	0	0	0	0	1	3	4	4
PER	2	5	1	1	6	3	1	19	20
PUM	0	0	0	0	1	0	0	1	1
ROS	0	0	0	0	1	0	0	1	1
RSP	0	0	0	1	1	1	1	4	4
SAG	0	1	0	0	2	0	1	4	4
STR	0	0	0	0	0	0	1	1	1
TRF	0	0	1	0	0	0	0	1	1
Unknown	0	0	2	0	0	0	0	2	2
Total	9	13	14	9	21	15	16	97	100

Notes:

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	0	0	1	0	0	2	3	0
AGE/AGT	12	9	5	15	24	55	30	150	10
ALE/ALT	18	20	39	20	13	15	35	160	10
APP	0	0	0	1	0	0	0	1	0
ASP	0	1	0	0	0	0	1	2	0
BCE/BCT	0	0	0	1	0	2	1	4	0
BDR/BND	0	0	4	10	2	1	0	17	1
BGE/BGT	0	6	0	0	7	7	0	20	1
BKB	0	1	0	0	0	0	0	1	0
BLB	0	8	3	11	9	0	0	31	2
BNS	0	0	2	0	0	0	0	2	0
BSP	1	0	0	3	0	1	1	6	0
BSS	0	0	3	0	0	0	0	3	0
BUK	3	3	2	2	0	2	0	12	1
BUS	0	0	0	0	1	0	0	1	0
BWI	0	0	0	1	0	0	0	1	0
BWS	0	0	0	1	0	0	0	1	0
CAR	0	0	0	1	0	1	0	2	0
CFP	0	0	0	0	0	1	0	1	0
CGE/CGT	2	1	0	0	1	8	1	13	1
CLE/CLT	0	0	0	5	4	5	3	17	1
COG/COS	62	37	82	32	81	101	90	485	31
CSE/CST	2	0	0	0	0	0	0	2	0
GIE/GIT	0	0	0	0	0	0	5	5	0
GPA	8	11	14	10	25	27	6	101	6
GPF	0	4	6	17	17	24	25	93	6
GPV	5	13	2	18	1	18	2	59	4
GRE/GRT	0	2	1	11	11	29	7	61	4
IDL	0	0	1	1	1	6	0	9	1
MIX/MVG	1	3	2	2	7	6	14	35	2
MML	0	0	1	0	0	1	0	2	0
OAS	1	0	0	2	0	1	0	4	0
OAT	2	0	1	2	0	0	4	9	1
ONP	0	0	1	0	1	0	0	2	0
ONS	7	0	0	6	0	0	0	13	1

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Current year crop	1995	1996	1997	1998	1999	2000	2001	Total	%
OTH	0	6	5	2	1	1	0	15	1
PCH	0	2	0	0	0	0	0	2	0
PEA	1	1	0	0	0	0	0	2	0
PEP	0	2	1	0	2	1	1	7	0
PGE/PGT	0	1	0	10	0	3	2	16	1
PIE/PIT	0	0	0	0	0	1	0	1	0
PLE/PLT	5	0	1	0	16	0	0	22	1
PNE/PNT	2	0	0	0	3	6	3	14	1
POT	8	1	0	0	0	1	0	10	1
PUM	0	0	0	1	0	1	0	2	0
RSF	0	1	0	1	0	1	1	4	0
RSS	0	0	0	1	0	0	0	1	0
RYC	1	0	0	4	0	1	0	6	0
RYS	0	1	0	1	2	1	0	5	0
SOG	0	0	0	0	0	0	1	1	0
SOY	0	1	1	0	1	4	1	9	1
SQW	0	2	1	0	2	1	1	7	0
SSH	1	0	0	0	0	0	0	1	0
STS	0	1	0	2	2	0	1	6	0
SUD	0	0	0	3	0	0	0	3	0
SUN	1	0	0	0	0	0	0	1	0
SWC	5	2	0	0	5	3	1	16	1
TOM	0	1	0	2	1	0	1	5	0
TRE/TRT	0	1	0	0	0	0	1	2	0
TRP	0	0	2	1	0	0	0	4	0
WAT	0	0	1	0	0	0	0	1	0
WHS	2	3	0	1	0	4	0	10	1
WHT	4	2	4	6	2	2	2	22	1
Unknown	1	7	2	8	3	9	1	31	2
Total	156	155	187	216	145	351	244	1544	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)	3	5	1	5	11	4	4	33
SMG 3 (silt loam)	4	3	4	2	2	4	5	24
SMG 4 (sandy loam)	2	4	9	2	5	6	4	32
SMG 5 (sandy)	0	1	0	0	3	1	3	8
SMG 6 (mucky)	0	0	0	0	0	0	0	0
Total	9	13	14	9	21	15	16	97

3.2 Samples for Commercial Production

Soil series for samples submitted for commercial production:

Name	SMG	1995	1996	1997	1998	1999	2000	2001	Total
Alden	3	0	0	0	1	0	0	0	1
Allis	3	0	0	0	1	1	0	0	2
Alluvial	3	0	0	0	0	1	0	0	1
Angola	2	0	0	1	0	0	0	0	1
Arkport	4	0	0	0	0	1	0	0	1
Aurora	2	4	0	3	7	1	30	5	50
Bath	3	0	1	0	2	0	0	0	3
Braceville	4	0	0	0	0	1	0	1	2
Caneadea	2	0	0	0	0	0	1	0	1
Carlisle	6	16	3	0	1	4	0	0	24
Cayuga	2	7	10	0	8	12	27	2	66
Chagrin	3	0	2	2	0	1	1	1	7
Chenango	3	6	2	2	7	4	8	2	31
Chippewa	3	0	2	0	0	1	2	0	5
Dunkirk	3	0	0	1	0	6	0	5	12
Edwards	6	0	0	0	3	0	2	0	5
Erie	3	8	6	6	11	32	32	9	104
Fremont	2	1	5	0	2	1	0	0	9
Genesee	2	0	0	0	0	0	1	2	3
Homer	2	0	1	0	0	0	0	0	1
Honeoye	2	6	12	51	35	13	49	21	187
Hornell	2	2	3	3	1	2	6	4	21
Howard	3	0	4	4	5	3	11	1	28
Kendaia	2	3	3	4	10	4	2	0	26
Lakemont	1	0	1	0	0	3	3	0	7
Langford	3	22	12	22	17	28	43	11	155
Lansing	2	22	25	39	26	18	16	31	177
Lima	2	10	13	7	20	9	14	28	101
Lordstown	3	0	0	0	0	1	0	0	1
Madalin	1	0	2	0	3	1	4	1	11
Manlius	3	5	1	0	6	7	8	2	29
Mardin	3	14	5	7	3	4	17	35	85
Middlebury	3	0	0	0	5	1	0	0	6
Morocco	4	0	0	0	0	0	0	2	2
Muck	6	1	0	0	0	0	0	0	1
Odessa	2	1	0	0	0	2	0	0	3
Ontario	2	3	6	3	8	3	10	2	35

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Name	SMG	1995	1996	1997	1998	1999	2000	2001	Total
Ovid	2	0	17	5	5	9	14	6	56
Palmyra	3	0	1	10	0	3	1	13	28
Phelps	3	0	0	2	0	1	10	2	15
Schoharie	1	3	1	0	0	2	1	3	10
Valois	3	10	4	8	9	17	14	0	62
Volusia	3	9	3	5	2	2	10	22	53
Wayland	2	0	0	0	0	0	0	1	1
Woostern	3	3	10	1	4	31	4	0	53
Unknown	-	0	0	1	14	15	10	32	72
Total	-	156	155	187	216	245	351	244	1554

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	0	1	3	1	3	0	0	1	9
1996	0	1	1	4	4	0	2	1	13
1997	0	1	3	0	5	3	0	2	14
1998	0	1	2	2	3	1	0	0	9
1999	0	1	2	5	5	4	1	3	21
2000	0	0	2	6	3	3	0	1	15
2001	2	0	4	1	3	2	4	0	16
Total	2	5	17	19	26	13	7	8	97

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1.8	1.8	1.6	1.3	1.9	2.5	0.3	
Highest:	14.9	8.9	7.2	5.6	10.8	13.6	6.8	
Mean:	4.5	4.4	4.4	3.6	4.8	4.7	4.0	
Median:	3.1	4.1	4.4	3.6	4.6	3.9	4.1	

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	0	11	33	11	33	0	0	11	100
1996	0	8	8	31	31	0	15	8	100
1997	0	7	21	0	36	21	0	14	100
1998	0	11	22	22	33	11	0	0	100
1999	0	5	10	24	24	19	5	14	100
2000	0	0	13	40	20	20	0	7	100
2001	13	0	25	6	19	13	25	0	100
Total	2	5	18	20	27	13	7	8	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	7	54	60	15	3	0	17	156
1996	0	19	73	45	8	4	2	4	155
1997	0	17	108	51	9	1	0	1	187
1998	0	34	92	50	18	5	4	13	216
1999	0	15	114	90	20	2	0	4	145
2000	0	46	142	95	56	6	0	6	351
2001	0	20	117	91	11	4	1	0	244
Total	0	158	700	482	137	25	7	45	1554

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1.4	1.4	1.5	1.3	1.4	1.2	1.4	
Highest:	54.5	42.5	7.6	50.4	47.0	53.1	6.0	
Mean:	7.1	3.6	2.8	4.7	3.5	3.3	2.9	
Median:	3.2	2.7	2.7	2.8	2.9	2.8	2.8	

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	4	35	38	10	2	0	11	100
1996	0	12	47	29	5	3	1	3	100
1997	0	9	58	27	5	1	0	1	100
1998	0	16	43	23	8	2	2	6	100
1999	0	6	47	37	8	1	0	2	100
2000	0	13	40	27	16	2	0	2	100
2001	0	8	48	37	5	2	0	0	100
Total	0	10	45	31	9	2	0	3	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	0	0	1	1	0	5	2	0	0	9
1996	0	1	0	2	1	3	4	2	0	0	13
1997	0	1	1	1	1	1	7	2	0	0	14
1998	1	0	0	3	0	2	2	1	0	0	9
1999	0	1	0	0	0	6	7	7	0	0	21
2000	0	1	0	2	2	1	4	5	0	0	15
2001	0	0	0	3	0	4	5	4	0	0	16
Total	1	4	1	12	5	17	34	23	0	0	97

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	5.6	4.7	4.9	4.2	4.7	4.9	5.5	
Highest:	7.7	7.5	7.8	7.5	7.8	7.9	7.8	
Mean:	-	-	-	-	-	-	-	
Median:	7.2	6.8	7.1	6.5	7.2	7.3	7.1	

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	0	0	11	11	0	56	22	0	0	100
1996	0	8	0	15	8	23	31	15	0	0	100
1997	0	7	7	7	7	7	50	14	0	0	100
1998	11	0	0	33	0	22	22	11	0	0	100
1999	0	5	0	0	0	29	33	33	0	0	100
2000	0	7	0	13	13	7	27	33	0	0	100
2001	0	0	0	19	0	25	31	25	0	0	100
Total	1	4	1	12	5	18	35	24	0	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	1	1	8	25	57	36	26	2	0	0	156
1996	4	11	14	35	39	40	11	1	0	0	155
1997*	7	5	10	32	55	39	3	2	0	0	153
1998	4	16	28	44	48	52	21	3	0	0	216
1999	7	18	22	27	53	73	42	3	0	0	145
2000	2	22	25	50	77	109	44	20	2	0	351
2001	4	7	9	21	67	88	45	3	0	0	244
Total	29	80	116	234	396	437	192	34	2	0	1520

*Thirty-four samples were not analyzed for pH in 1997.

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	4.4	3.8	3.2	4.3	3.5	4.4	3.9	
Highest:	7.7	7.5	7.5	7.7	7.7	8.4	7.7	
Mean:	-	-	-	-	-	-	-	
Median:	6.4	6.3	6.1	6.1	6.4	6.4	6.5	

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	1	1	5	16	37	23	17	1	0	0	100
1996	3	7	9	23	25	26	7	1	0	0	100
1997	5	3	7	21	36	25	2	1	0	0	100
1998	2	7	13	20	22	24	10	1	0	0	100
1999	3	7	9	11	22	30	17	1	0	0	100
2000	1	6	7	14	22	31	13	6	0	0	100
2001	2	3	4	9	27	36	18	1	0	0	100
Total	2	5	8	5	26	29	13	2	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	2	1	2	1	1	0	0	0	2	9
1996	0	1	2	5	1	1	0	1	0	2	13
1997	0	2	1	3	1	2	0	3	1	1	14
1998	0	0	1	5	0	0	0	1	1	1	9
1999	0	0	1	5	5	0	2	1	3	4	21
2000	0	3	2	4	3	0	0	0	0	3	15
2001	0	2	4	4	0	1	1	1	0	3	16
Total	0	10	12	28	11	5	3	7	5	16	97

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

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	2	2	7	8	2	1	
Highest:	492	302	303	330	439	455	551	
Mean:	114	73	77	86	117	86	121	
Median:	13	36	55	29	49	23	13	

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	22	11	22	11	11	0	0	0	22	100
1996	0	8	15	38	8	8	0	8	0	15	100
1997	0	14	7	21	7	14	0	21	7	7	100
1998	0	0	11	56	0	0	0	11	11	11	100
1999	0	0	5	24	24	0	10	5	14	19	100
2000	0	20	13	27	20	0	0	0	0	20	100
2001	0	13	25	25	0	6	6	6	0	19	100
Total	0	10	12	29	11	5	3	7	5	16	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	25	40	70	1	5	1	4	3	7	156
1996	0	28	56	66	0	0	1	1	1	2	155
1997	0	29	49	90	12	3	1	3	0	0	187
1998	0	42	73	74	16	4	4	1	2	0	216
1999	0	42	66	104	19	9	0	2	2	1	145
2000	0	94	149	80	12	4	3	2	2	5	351
2001	0	62	56	104	10	3	3	4	1	1	244
Total	0	322	489	588	70	28	13	17	11	16	1554

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

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	1	1	1	
Highest:	330	511	124	173	349	398	237	
Mean:	31	16	16	17	20	15	17	
Median:	10	8	10	8	10	5	9	

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	16	26	45	1	3	1	3	2	4	100
1996	0	18	36	43	0	0	1	1	1	1	100
1997	0	16	26	48	6	1	1	2	0	0	100
1998	0	19	34	34	7	1	2	0	1	0	100
1999	0	17	27	42	8	4	0	1	1	0	100
2000	0	27	42	23	3	1	1	1	1	1	100
2001	0	25	23	43	4	1	1	2	0	0	100
Total	0	21	31	38	5	2	1	1	1	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	0	1	1	1	3
1996	0	0	1	1	3	5
1997	0	0	0	0	1	1
1998	0	0	0	1	4	5
1999	0	0	0	0	11	11
2000	0	0	0	1	3	4
2001	0	0	0	0	4	4
Total (#)	0	0	2	4	27	33
Total (%)	0	0	6	12	82	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	1	3	4
1996	0	0	0	0	3	3
1997	0	0	1	2	1	4
1998	0	0	0	0	2	2
1999	0	0	0	0	2	2
2000	0	0	0	3	1	4
2001	0	0	0	2	3	5
Total (#)	0	0	1	8	15	24
Total (%)	0	0	4	33	63	100

Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	1	0	1	2
1996	0	0	0	2	2	4
1997	0	1	0	2	6	9
1998	0	1	0	1	0	2
1999	0	0	1	3	1	5
2000	0	1	1	1	3	6
2001	0	0	0	0	4	4
Total (#)	0	3	3	9	17	32
Total (%)	0	9	9	28	53	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	0	0	0
1996	0	0	0	0	1	1
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	1	0	2	3
2000	0	0	0	0	1	1
2001	1	1	0	0	1	3
Total (#)	1	1	1	0	5	8
Total (%)	13	13	13	0	63	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	0	0	2	2	5	9
1996	0	0	1	3	9	13
1997	0	1	1	4	8	14
1998	0	1	0	2	6	9
1999	0	0	2	3	16	21
2000	0	1	1	5	8	15
2001	1	1	0	2	12	16
Total #	1	4	7	21	64	97

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	83	84	78	95	116	69	37	
Highest:	6295	770	653	929	1200	866	1243	
Mean:	1010	364	315	310	444	359	419	
Median:	202	308	217	191	415	327	313	

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
1995	0	0	22	22	56	100
1996	0	0	8	23	69	100
1997	0	7	7	29	57	100
1998	0	11	0	22	67	100
1999	0	0	10	14	76	100
2000	0	7	7	33	53	100
2001	6	6	0	13	75	100
Grand Total	1	4	7	22	66	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	0	3	3
1996	0	0	0	1	3	4
1997	0	0	0	0	0	0
1998	0	0	1	1	1	3
1999	0	0	0	5	1	6
2000	0	2	1	3	2	8
2001	0	0	0	1	3	4
Total (#)	0	2	2	11	13	28
Total (%)	0	7	7	39	46	100
Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	4	30	25	59
1996	0	4	18	37	36	95
1997	1	2	9	41	63	116
1998	0	7	6	42	67	122
1999	0	2	7	23	52	84
2000	0	9	30	77	62	178
2001	2	2	14	35	79	132
Total (#)	3	26	88	285	384	786
Total (%)	0	3	11	36	49	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	2	8	36	31	77
1996	1	7	9	20	16	53
1997	0	5	22	24	19	70
1998	0	2	4	28	39	73
1999	0	9	13	39	83	144
2000	0	8	31	56	66	161
2001	2	10	21	36	34	103
Total (#)	3	43	108	239	288	681
Total (%)	0	6	16	35	42	100

Ketterings, Q.M., H. Krol, W.S. Reid and N. Herendeen (2004). Yates County Soil Sample Survey 1995-2001. CSS Extension Bulletin E04-5. 40 pages.

Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	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	2	0	0	2
2000	0	0	0	0	0	0
2001	0	0	1	2	0	3
Total (#)	0	0	3	2	0	5
Total (%)	0	0	60	40	0	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	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 6						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
1995	0	0	0	0	17	17
1996	0	0	0	0	3	3
1997	0	0	0	0	0	0
1998	0	0	0	0	4	4
1999	0	0	0	0	4	4
2000	0	0	0	0	2	2
2001	0	0	0	0	0	0
Total (#)	0	0	0	0	30	30
Total (%)	0	0	0	0	100	100

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	12	66	76	0	156
1996	1	11	27	58	58	0	155
1997	1	7	31	65	82	1	187
1998	0	9	11	71	111	14	216
1999	0	11	22	67	140	5	245
2000	0	19	62	136	132	2	351
2001	4	12	36	74	116	2	144
Grand Total	6	71	201	537	715	24	1554

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	75	40	1	46	53	50	31	
Highest:	1273	1020	624	1134	867	3131	999	
Mean:	263	180	186	229	252	207	208	
Median:	185	147	161	192	224	149	173	

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

% summary	Very Low	Low	Medium	High	Very High	Un-known	Total
1995	0	1	8	42	49	0	100
1996	1	7	17	37	37	0	100
1997	1	4	17	35	44	1	100
1998	0	4	5	33	51	6	100
1999	0	4	9	27	57	2	100
2000	0	5	18	39	38	1	100
2001	2	5	15	30	48	1	100
Grand Total	0	5	13	35	46	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	0	0	2	7	9
1996	0	0	0	1	12	13
1997	0	0	0	1	13	14
1998	0	0	0	0	9	9
1999	0	0	0	0	21	21
2000	0	1	0	1	13	15
2001	0	0	0	0	16	16
Total	0	1	0	5	91	97

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	160	189	105	227	261	54	245	
Highest:	4359	763	792	670	1297	971	977	
Mean:	843	437	477	416	634	490	580	
Median:	458	445	529	421	532	434	551	

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	0	0	22	78	100
1996	0	0	0	8	92	100
1997	0	0	0	7	93	100
1998	0	0	0	0	100	100
1999	0	0	0	0	100	100
2000	0	7	0	7	87	100
2001	0	0	0	0	100	100
Total	0	1	0	5	94	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	2	13	141	156
1996	0	4	7	22	122	155
1997	0	3	5	17	162	187
1998	1	1	2	24	188	216
1999	0	2	4	26	213	245
2000	0	7	8	41	295	351
2001	2	5	4	14	219	244
Total	3	22	32	157	1340	1554

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	82	38	22	19	48	25	19	
Highest:	2264	1820	960	1974	1974	1852	837	
Mean:	477	361	361	405	398	386	365	
Median:	373	330	371	334	393	370	375	

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	1	8	90	100
1996	0	3	5	14	79	100
1997	0	2	3	9	87	100
1998	0	0	1	11	87	100
1999	0	1	2	11	87	100
2000	0	2	2	12	84	100
2001	1	2	2	6	90	100
Total	0	1	2	10	86	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	9	0	9
1996	13	0	13
1997	14	0	14
1998	8	1	9
1999	20	1	21
2000	14	1	15
2001	13	3	16
Total	91	6	97

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	100	0	100
	100	0	100
	100	0	100
	89	11	100
	95	5	100
	93	7	100
	81	19	100
	94	6	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	2	2	2	1	1	1	1	
Highest:	21	35	48	326	232	80	69	
Mean:	8	12	8	41	15	12	15	
Median:	5	5	4	4	3	4	3	

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	151	5	156
1996	143	12	155
1997	178	9	187
1998	206	10	216
1999	225	20	245
2000	342	9	351
2001	234	10	244
Total	1497	75	1554

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	97	3	100
	92	8	100
	95	5	100
	95	5	100
	92	8	100
	97	3	100
	96	4	100
	95	5	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	1	1	1	
Highest:	606	299	146	163	320	234	182	
Mean:	14	18	11	13	15	11	10	
Median:	6	7	5	7	4	5	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:				Percentages:		
	0-99	>99	Total	0-99	>99	Total
	Normal	Excessive		Normal	Excessive	
1995	8	1	9	89	11	100
1996	13	0	13	100	0	100
1997	12	2	14	86	14	100
1998	9	0	9	100	0	100
1999	21	0	21	100	0	100
2000	15	0	15	100	0	100
2001	14	2	16	88	13	100
Total	92	5	97	95	5	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	19	15	11	23	21	12	20	
Highest:	314	85	234	98	69	65	183	
Mean:	64	43	60	44	38	35	56	
Median:	30	39	46	36	37	36	42	

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	152	4	156
1996	154	1	155
1997	185	2	187
1998	209	7	216
1999	239	6	245
2000	351	0	351
2001	242	2	244
Total	1532	22	1554

Percentages:

	0-99	>99	Total
	Normal	Excessive	
	97	3	100
	99	1	100
	99	1	100
	97	3	100
	98	2	100
	100	0	100
	99	1	100
	99	1	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	11	11	2	11	12	4	9	
Highest:	210	136	173	192	158	99	112	
Mean:	35	36	43	38	37	28	36	
Median:	29	32	41	30	30	25	35	

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:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
1995	0	3	6	9
1996	0	2	11	13
1997	0	1	13	14
1998	0	0	9	9
1999	0	0	21	21
2000	1	2	12	15
2001	0	1	15	16
Total	1	9	90	97

Percentages:

<0.5	0.5-1.0	>1	Total
Low	Medium	High	
0	33	67	100
0	15	85	100
0	7	93	100
0	0	100	100
0	0	100	100
7	13	80	100
0	6	84	100
1	9	90	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.5	0.6	0.8	1.2	1.5	0.4	0.9	
Highest:	42.7	134.5	20.0	9.0	14.6	16.7	15.7	
Mean:	8.6	16.2	6.2	3.5	5.7	3.7	5.6	
Median:	2.2	5.6	4.5	1.8	4.6	2.2	4.9	

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	8	62	86	156
1996	1	77	77	155
1997	6	47	134	187
1998	5	64	147	216
1999	13	72	160	245
2000	27	153	171	351
2001	8	64	172	244
Total	68	539	947	1554

Percentages:

<0.5	0.5-1.0	>1	Total
Low	Medium	High	
5	40	55	100
1	50	50	100
3	25	72	100
2	30	68	100
5	29	65	100
8	44	49	100
3	26	70	100
4	35	61	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.3	0.4	0.1	0.1	0.1	0.1	0.2	
Highest:	51.4	53.6	34.6	10.1	13.6	21.8	23.4	
Mean:	2.9	2.1	2.2	1.8	1.9	1.8	2.4	
Median:	1.1	1.0	1.6	1.3	1.3	1.0	1.4	

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
ATF	Athletic Field

Crop Code	Crop Description
ASP	Asparagus
BDR/BND	Beans-dry
BKB	Blackberries
BLU/BLB	Blueberries
BNS	Beans, Snap
BUS	Brussels sprouts
CAR	Carrots
CEM	Cemetery
CFP	Cauliflowers, Transplanted
END	Endives
FAR	Fairway
FLA	Flowering Annuals
GPA	Grapes, American
GPF	Grapes, French-American
GPV	Grapes, Vinifera
GRA	Grapes
GEN	Green
HRB	Herbs
IDL	Idle land
LAW	Lawn
LET	Lettuce
MIX/MVG	Mixed vegetables
MML	Muskmelon
ONP	Onions, Transplanted
ONS	Onions, Seeded
OTH	Other
PAR	Pears
PCH	Peaches
PEA	Peas
PER	Perennials
POP	Popcorn
PRK	Park
POT/PTO	Potatoes
PUM	Pumpkins
ROD	Roadside
ROS	Roses
ROU	Rough
RSF	Raspberries, Fall
RSP	Raspberries (homeowners)

Crop Code	Crop Description
RSS	Raspberries, Summer
SAG	Ornamentals adapted to pH 6.0 to 7.5
SQS	Squash, Summer
SQW	Squash, Winter
STE	Strawberries, Ever
STR	Strawberries (homeowners)
STS	Strawberries, Spring
SUN	Sunflowers
SWC	Sweet corn
TOM	Tomatoes
TRE	Christmas trees, Established
TRF	Tree fruits
TRT	Christmas trees, Topdressing
WAT	Watermelon