

Soil Sample Survey

Wyoming Co.

Samples analyzed by CNAL in 1995-2001



Summary compiled by

Quirine M. Ketterings, Hettie Krol, W. Shaw Reid & Bruce Tillapaugh



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

Ketterings, Q.M., H. Krol, W.S. Reid and B.P. Tillapaugh (2003). Wyoming County Soil Sample Survey 1995-2001. CSS Extension Bulletin E03-22. 40 pages.

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Quirine M. 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

Bruce P. Tillapaugh

Field Crops Educator and Agricultural Program Leader
Cornell Cooperative Extension of Wyoming County

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Introduction

Soil resources influence everyone, from farm producer to consumer. The soils in Wyoming County, New York, range from glacial till soils to soils formed in glacial outwash, Kame deposits and old alluvial fan deposits, glacial lake sediment, and contrasting glacial deposits¹. Conesus-Lansing Association soils are glacial till soils that are deep, well-drained and moderately well drained medium lime soils which have medium-textured subsoil found on the upland portions of the county. Other examples of glacial till soils that can be found in the uplands of Wyoming County are soils belonging to the: Nunda – Danley Association (deep, moderately well drained, medium lime soils with moderately fine textured subsoil), Darien – Ilion Association (deep, somewhat poorly drained and poorly drained medium lime soils with moderately fine textured subsoil), Erie – Langford Association (typically deep, somewhat poorly drained, moderately well drained and well drained, low lime soils that have a medium textured subsoil), Bath – Mardin Association (deep, well drained, and moderately well drained very low lime soils that have medium textured subsoil), Volusia – Mardin Association (deep somewhat poorly drained and moderately well drained very fine low lime soils which have medium textured subsoil), Fremont – Marilla – Hornell Association (deep to moderately deep somewhat poorly drained and moderately well drained, very low lime soils that have a medium textured to fine textured shaly subsoil), Fremont – Marilla Association (deep, somewhat poorly drained and moderately well drained very low lime soils that have a moderately fine textured and medium textured subsoil), Manlius – Lordstown Association (moderately deep, well drained to excessively well-drained very low lime soils that have a medium textured subsoil), and the Lordstown – Tuller Association (moderately deep to shallow, well drained to poorly drained, very low lime soils that possess medium textured subsoil).

Examples of soils formed in glacial outwash, Kame deposits or old alluvial fan deposits include soils from the: Chenango – Howard – Castile Association (deep, somewhat excessively well drained to moderately well drained, very low to medium lime soils that have a medium textured and moderately coarse textured very gravelly to gravelly

¹ Soils information was extracted from the Soil Survey of Wyoming County (USDA in Cooperation with Cornell University Agricultural Experiment Station).

subsoil), Howard – Chenango Association (deep, well drained and somewhat excessively drained, medium lime and very low lime soils that have a medium textured and moderately coarse textured very gravelly subsoil), Herkimer – Wayland – Wallkill Association (deep, well drained to very poorly drained, medium lime to high lime soils that have a medium textured and moderately fine textured subsoil on glacial outwash fans and flood plains), and the Halsey – Palms – Papakating Associations (deep, very poor to poorly drained medium lime soils that have a moderately coarse textured to moderately fine textured mineral subsoil or an organic layer on outwash terraces and flood plains).

Soils from the Caneadea Association are deep, somewhat poorly drained to moderately well drained, medium to high lime soils which have a moderately fine textured to fine textured subsoil formed on glacial lake deposits. Soils formed in contrasting glacial deposits include soils from the Bath – Valois Association (deep, well drained, low lime soils that have a medium textured with moderately coarse textured subsoil on moranic upland), Howard – Madrid Association (deep, well drained and somewhat excessively well drained, medium lime soils with medium textured and moderately coarse textured subsoil that is very gravelly in some locations), and the Varysburg – Williamson – Churchville Association (deep, well drained to somewhat poorly drained, very low lime soils that have a medium to fine textured subsoil on valley-side deposits).

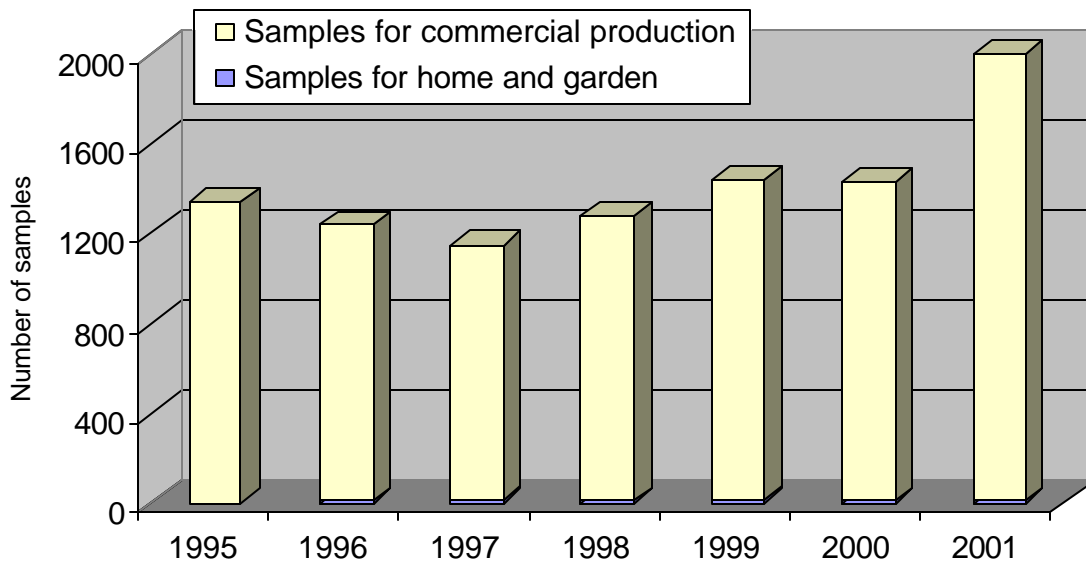
The soil resources of Wyoming County have played an important role in the success of the agricultural industry in the county. Soil testing aids in determining the current fertility status of a field as expressed in percent organic matter, pH, and extractable phosphorus, potassium, magnesium, calcium, and micronutrients. Through decades of soil fertility research conducted by Cornell University faculty and staff, in collaboration with Cornell Cooperative Extension educators and producers, soil test data can be used to determine the likeliness to a response to additional nutrients (either inorganic fertilizer or organic nutrient sources) for optimum economic and environmentally sound production of crops.

As you review this document, consider the soil types (and their characteristics) of your farm or garden. Depending on your test results, application of additional supplemental nutrients may or may not be needed.

Bruce P. Tillapaugh
Cornell Cooperative Extension of Wyoming County

1. General Survey Summary

This survey summarizes the soil test results from Wyoming 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 9958. Of these 9958 samples, 9918 samples (99.6%) were submitted to obtain fertilizer recommendations for commercial production while 40 samples (0.4%) were submitted as home and garden samples.



Homeowners		Commercial		Total
1995	2	1995	1342	1344
1996	5	1996	1236	1241
1997	8	1997	1145	1153
1998	7	1998	1275	1282
1999	8	1999	1436	1444
2000	4	2000	1426	1430
<u>2001</u>	<u>6</u>	<u>2001</u>	<u>2058</u>	<u>2064</u>
Total	40	Total	9918	9958

Of the 40 home and garden soil samples, 20 were submitted to request fertilizer recommendations for home garden vegetable production. Most of the other 20 samples were submitted for lawn and perennial recommendations. People submitting samples for commercial production requested fertilizer recommendations for corn silage or grain production (41%), alfalfa or alfalfa/grass mixtures (39%), or hay production (6%), while a few producers were planning on growing other crops including potatoes, peas, beans, grass for pasture, clover/grass mixtures, small grains and vegetables.

Home and garden samples in Wyoming County were mostly sandy loam soils belonging to soil management group 4 (19 samples) and group 3 (12 samples). Six samples belonged to soil management group 2. Group 3 was represented by 3 of the 20 samples. 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, 76% belonged to soil management group 3. Seventeen percent belonged to soil management group 2. None of the samples belonged to group 1, 5 or 6 while 4% was classified group 4. The five most common soil

series were Bath (16%), Langford (15%), Erie (10%), Howard (10%), and Chenango (8%). These soils represent 12% (Bath), 8% (Langford), 9% (Erie), 7% (Howard), and 8% (Chenango) of the total 381,500 acres in the county.

Organic matter levels, as measured by loss on ignition, ranged from less than 1% to slightly more than 15% with median values ranging from 4.0 to 6.3% organic matter for home and garden samples and values ranging from 3.7 to 4.1% for samples submitted for commercial production. Seventeen of the 40 home and garden samples had between 2 and 5% organic matter with 2 testing between 2 and 2.9% organic matter, 7 between 3.0 and 3.9% organic matter and 8 between 4.0 and 4.9% organic matter. Twenty one samples tested >4.9% in organic matter while 2 had less than 2% organic matter. Of the samples submitted for commercial production, 33% contained between 3 and 4% organic matter, 33% tested between 4.0 and 4.9% while 14% had organic matter concentrations of 5.0-5.9%. In total, 50% of the samples had organic matter levels between 4.0 and 6.9%.

Soil pH in water (1:1 extraction ratio) varied from pH 4.4 to 8.1 with the median for home and garden samples ranging from pH 6.6 to pH 7.3 and for samples submitted for commercial production ranging from pH 6.3 to pH 6.7. Of the 40 home and garden samples, 26 tested between pH 6.0 and 7.4. For the samples submitted for commercial production, this was 84% while 14% tested between pH 5.0 and 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 lbs 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, 1 sample tested low, 8 were medium, 12 tested high and 19 tested very high in phosphorus. This meant that 75% tested high or very high in P. Phosphorus levels for samples for commercial production in Wyoming County were higher than the state average (50% tests high or very high in P). Ten percent of the samples tested very high in P. Seventeen percent was low in P, 24% tested medium while 49% of the submitted

samples were classified as high in soil test P. This means that 60% tested high or very high in P and. There were no clear trends in P levels over the 6 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 40 home and garden samples, 3 were classified as low in potassium. Two samples were medium in K, 15 were high and 20 samples were very high in potassium. For samples submitted for commercial production, 1% tested very low in K, 8% tested low, 18% were medium, 31% tested high and 39% tested very high in potassium (the K classification of the remaining 3% was unknown because soil series names were missing). As with phosphorus, there were no trends over the 6 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 less than 30 to slightly over 2000 lbs Mg/acre (Morgan extraction). There were no samples that tested very low in Mg. Most soils tested high or very high for Mg (100% of the homeowner soils and 99% of the soils of the commercial growers). Thus, magnesium deficiency is not likely to occur in Wyoming 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% in the normal range with one home and garden sample and 2% of the samples for commercial production testing excessive for Fe. Similarly, most soils (all but 2 of the home and garden samples and 38 of the 9918 commercial grower samples) 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 of 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, 35 samples tested high for zinc while 5 tested medium. Of the samples for commercial production, 3% tested low in zinc, 23% tested medium while 74% 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.

Note: In the soil fertility summary tables on the following pages, the low number of samples submitted on a yearly basis for home and gardens prevents us from presenting annual soil fertility percentage distributions. Percentage distributions are given over the 1995-2001 period. Rounding to full percentages can cause the sum of percentage distributions for all fertility categories to be slightly greater or smaller than 100%.

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	3	0	0	2	0	0	5
BLU	0	0	0	0	1	0	0	1
FLA	0	0	0	0	1	0	0	1
LAW	1	0	2	0	1	2	1	7
MVG	1	0	5	6	3	1	4	20
PER	0	1	0	0	0	0	0	1
ROS	0	0	0	1	0	0	0	1
SAG	0	1	1	0	0	1	0	3
Unknown	0	0	0	0	0	0	1	1
Total	2	5	8	7	8	4	6	40

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	6	8	6	5	3	1	0	29	0
AGE/AGT	478	514	321	468	433	572	842	3628	37
ALE/ALT	33	42	44	27	24	8	11	189	2
APP	0	0	2	0	0	2	0	4	0
BCE/BCT	5	1	3	0	2	0	1	12	0
BDR	0	1	0	1	0	0	0	2	0
BGE/BGT	9	6	0	5	3	1	0	24	0
BLB	0	0	0	2	0	0	0	2	0
BND	0	0	0	0	0	2	5	7	0
BNS	10	0	18	15	52	3	29	127	1
BSP	0	2	0	0	0	0	0	2	0
BSS	0	6	9	6	1	0	0	22	0
BWI	5	0	0	0	0	0	0	5	0
BWS	0	0	2	0	0	0	0	2	0
CBP	0	0	0	0	0	0	1	1	1
CGE/CGT	22	20	6	22	16	18	18	122	1
CLE/CLT	0	0	2	1	0	1	0	4	0
COG/COS	581	496	482	563	656	551	776	4105	41
CVE	2	0	0	0	0	0	0	2	0
GIE/GIT	2	2	9	5	7	22	36	83	1
GRE/GRT	26	58	24	27	52	125	154	466	5
IDL	6	2	0	0	4	4	21	37	0
MIX	1	1	1	1	0	2	0	6	0
OAS	59	23	19	17	1	3	0	123	1
OAT	14	1	0	4	1	1	1	22	0
OTH	0	0	0	0	0	16	0	16	0
PEA	3	1	35	3	40	19	59	160	2
PGE/PGT	5	3	1	7	14	8	11	49	0
PIE/PIT	4	1	2	11	30	6	3	57	1
PLE/PLT	1	0	0	0	0	0	0	1	0
PNE/PNT	0	0	1	2	1	1	2	7	0
POT/PTO	28	18	47	52	79	28	17	269	3
PUM	0	0	0	1	0	0	0	1	0
RSF	0	0	1	0	0	0	0	1	0
RSS	0	1	0	0	0	0	0	1	0

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Current year crop	1995	1996	1997	1998	1999	2000	2001	Total	%
RYC	5	2	0	0	2	0	0	9	0
RYS	0	3	1	0	1	0	2	9	0
SOD	0	0	0	0	0	1	0	1	0
SOF	2	0	0	0	0	0	0	2	0
SOY	20	4	0	0	0	7	3	34	0
SSH	1	0	0	0	0	0	0	1	0
STS	0	1	1	1	1	0	0	4	0
SUD	0	0	0	0	0	1	0	1	0
SWC	5	3	0	13	8	8	15	52	1
TRE/TRT	0	0	0	0	0	6	0	6	0
WHS	2	1	28	0	1	0	0	32	0
WHT	5	4	6	16	3	8	13	55	1
Unknown	0	11	74	0	1	1	37	124	1
Total	1342	1236	1145	1257	1436	1426	2058	9918	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)	0	0	4	0	0	0	3	6
SMG 3 (silt loam)	1	5	2	2	0	0	2	12
SMG 4 (sandy loam)	1	0	1	5	6	4	2	19
SMG 5 (sandy)	0	0	1	0	2	0	0	3
SMG 6 (mucky)	0	0	0	0	0	0	0	0
Total	2	5	8	7	8	4	6	40

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	3	4
Allard	3	8	8	25	3	14	11	12	81
Alluvial	3	0	0	1	0	3	3	4	11
Angola	2	1	2	1	0	2	0	4	10
Appleton	2	29	23	16	25	38	37	21	189
Arkport	4	11	33	4	14	21	9	17	109
Arnot	3	0	4	0	0	0	1	4	9
Aurora	2	0	0	4	2	2	0	6	14
Bath	3	233	174	230	210	222	201	345	1615
Burdett	2	4	3	1	2	0	4	5	19
Canadice	2	0	0	0	0	0	0	4	4
Canaseraga	3	8	19	18	19	12	17	31	124
Caneadea	2	11	15	8	11	10	12	4	71
Castile	4	18	27	16	21	12	10	24	128
Chenango	3	111	46	139	101	177	70	115	759
Chippewa	3	2	3	5	9	3	1	3	26
Churchville	2	4	13	10	8	3	3	20	61
Collamer	3	6	19	9	2	15	10	10	71
Conesus	2	64	90	36	81	86	93	94	544
Dalton	3	11	2	8	10	5	3	17	56
Danley	2	4	7	1	5	5	8	14	44
Darien	2	4	3	6	7	8	8	19	55
Ellery	3	1	0	0	0	0	0	0	1
Erie	3	121	98	108	119	105	172	262	985
Fremont	2	21	9	14	16	10	21	27	118
Halsey	4	0	1	0	1	1	1	7	11
Hamlin	2	0	8	8	1	3	5	16	41
Herkimer	3	4	6	3	13	11	0	13	50
Homer	2	11	2	4	4	2	14	13	50
Hornell	2	1	6	1	1	1	2	2	14
Howard	3	122	110	111	144	199	112	157	955
Ilion	2	1	0	1	0	0	1	0	3
Langford	3	233	171	175	183	173	240	269	1444
Lansing	2	46	30	21	25	37	19	25	203
Lordstown	3	2	4	3	3	9	7	16	44
Madrid	4	14	14	14	27	12	21	33	135

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Name	SMG	1995	1996	1997	1998	1999	2000	2001	Total
Manlius	3	2	1	0	0	1	0	3	7
Mardin	3	63	110	66	62	49	154	191	695
Marilla	3	8	7	1	2	7	1	0	26
Niagara	3	1	5	3	2	3	1	3	18
Nunda	2	15	11	3	9	12	13	10	73
Palmyra	3	12	15	3	10	13	7	8	68
Papakating	2	0	0	3	1	2	2	5	13
Phelps	3	3	11	1	3	8	17	4	47
Red Hook	4	4	0	4	5	1	6	7	27
Scio	3	14	11	10	12	14	11	12	84
Sun	4	1	0	1	1	0	0	2	5
Teel	2	0	4	3	8	6	0	19	40
Tioga	3	2	0	3	5	4	2	2	18
Tuller	3	3	0	1	0	1	0	5	10
Varysburg	2	13	11	6	15	8	31	14	98
Volusia	3	37	45	22	20	55	35	69	283
Wallington	3	3	0	1	4	4	3	1	16
Wallkill	3	0	0	0	1	3	0	1	5
Wayland	2	4	9	5	5	1	2	11	37
Williamson	4	0	5	0	0	2	14	6	27
Unknown	-	51	41	8	42	41	11	69	263
Total	-	1342	1236	1145	1275	1436	1426	2058	9918

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	0	1	0	0	1	0	0	2
1996	0	0	0	1	3	0	0	1	5
1997	0	1	1	2	2	1	0	1	8
1998	0	0	0	1	0	1	0	5	7
1999	0	0	0	1	1	1	3	2	8
2000	1	0	0	0	1	1	1	0	4
2001	0	0	0	2	1	1	2	0	6
Total	1	1	2	7	8	6	6	9	40

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	2.6	3.8	1.8	3.6	3.8	0.9	3.3	
Highest:	5.3	15.5	7.2	12.7	14.3	6.3	6.9	
Mean:	4.0	6.4	4.2	7.9	6.8	4.1	5.1	
Median:	4.0	4.2	4.3	7.8	6.3	4.6	5.2	

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
1996
1997
1998
1999
2000
2001
Total	3	3	5	18	20	15	15	23	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	5	52	192	405	393	220	58	17	1342
1996	3	23	186	412	384	173	41	14	1236
1997	0	14	175	433	349	145	20	9	1145
1998	0	30	211	438	413	150	24	9	1275
1999	1	32	268	529	449	129	22	6	1436
2000	0	23	205	458	497	184	44	15	1426
2001	0	25	244	605	744	351	69	20	2058
Total	9	199	1481	3280	3229	1352	278	90	9918

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.1	0.7	1.2	1.2	0.8	1.1	1.0	
Highest:	10.5	8.1	13.2	10.1	10.2	13.7	11.2	
Mean:	4.0	4.0	3.9	3.9	3.8	4.0	4.2	
Median:	4.0	3.9	3.9	3.9	3.7	4.0	4.1	

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	14	30	29	16	4	1	100
1996	0	2	15	33	31	14	3	1	100
1997	0	1	15	38	30	13	2	1	100
1998	0	2	17	34	32	12	2	1	100
1999	0	2	19	37	31	9	2	0	100
2000	0	2	14	32	35	13	3	1	100
2001	0	1	12	29	36	17	3	1	100
Total	0	2	15	33	33	14	3	1	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	0	0	0	1	1	0	0	2
1996	0	0	1	0	0	1	2	1	0	0	5
1997	0	0	0	1	3	1	1	2	0	0	8
1998	0	0	0	1	1	3	1	1	0	0	7
1999	0	0	1	1	2	1	2	1	0	0	8
2000	0	0	0	0	2	0	1	1	0	0	4
2001	0	0	0	0	0	2	2	2	0	0	6
Total	0	0	2	3	8	8	10	9	0	0	40

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	7.0	5.2	5.7	5.9	5.1	6.1	6.5	
Highest:	7.6	7.5	7.5	7.5	7.5	7.7	7.8	
Mean:	-	-	-	-	-	-	-	
Median:	7.3	7.2	6.6	6.8	6.6	6.7	7.2	

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
1996
1997
1998
1999
2000
2001
Total	0	0	5	8	20	20	25	23	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	0	2	26	151	403	568	164	27	1	0	1342
1996	0	2	21	128	389	560	125	11	0	0	1236
1997*	0	8	123	198	387	357	67	2	0	0	1142
1998*	2	8	33	137	406	529	151	7	0	0	1273
1999	0	3	30	196	341	515	319	31	1	0	1436
2000	0	0	15	111	336	537	371	53	3	0	1426
2001	0	16	44	199	571	783	402	43	0	0	2058
Total	2	39	292	1120	2833	3849	1599	174	5	0	9913

* Three and two samples were not analyzed for pH in 1997 and in 1998, respectively.

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	4.7	4.8	4.6	4.4	4.8	5.1	4.6	
Highest:	8.0	7.7	7.6	7.8	8.0	8.1	7.9	
Mean:	-	-	-	-	-	-	-	
Median:	6.5	6.5	6.3	6.5	6.6	6.7	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	2	11	30	42	12	2	0	0	100
1996	0	0	2	10	31	45	10	1	0	0	100
1997	0	1	11	17	34	31	6	0	0	0	100
1998	0	1	3	11	32	42	12	1	0	0	100
1999	0	0	2	14	24	36	22	2	0	0	100
2000	0	0	1	8	24	38	26	4	0	0	100
2001	0	1	2	10	28	38	20	2	0	0	100
Total	0	0	3	11	29	39	16	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	0	1	1	0	0	0	0	0	0	2
1996	0	0	0	5	0	0	0	0	0	0	5
1997	0	0	3	2	1	1	1	0	0	0	8
1998	0	1	1	1	1	0	0	0	0	3	7
1999	0	0	2	1	2	2	0	0	0	1	8
2000	0	0	1	2	0	0	0	1	0	0	4
2001	0	0	0	0	1	2	0	2	0	1	6
Total	0	1	8	12	5	5	1	3	0	5	40

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

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	5	14	4	2	5	5	44	
Highest:	36	33	97	356	675	122	225	
Mean:	20	19	37	146	119	37	113	
Median:	20	16	30	44	48	11	103	

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
1996
1997
1998
1999
2000
2001
Total	0	3	20	30	13	13	3	8	0	13	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	322	318	561	85	34	11	6	4	1	1342
1996	0	195	307	586	106	19	9	10	2	2	1236
1997	0	128	230	613	129	27	6	4	6	2	1145
1998	0	138	296	691	95	30	15	7	2	1	1275
1999	0	270	304	750	81	16	8	5	2	0	1436
2000	0	267	359	691	67	24	7	8	3	0	1426
2001	0	348	540	991	93	33	23	24	3	3	2058
Total	0	1668	2354	4883	656	183	79	64	22	9	9918

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:	288	228	315	361	200	167	337	
Mean:	17	18	22	19	16	16	17	
Median:	9	12	16	13	11	10	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	24	24	42	6	3	1	0	0	0	100
1996	0	16	25	47	9	2	1	1	0	0	100
1997	0	11	20	54	11	2	1	0	0	0	100
1998	0	11	23	54	7	2	1	1	0	0	100
1999	0	19	21	52	6	1	1	0	0	0	100
2000	0	19	25	48	5	2	0	1	0	0	100
2001	0	17	26	48	5	2	1	1	0	0	100
Total	0	17	24	49	7	2	1	1	0	0	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	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	2	2	4
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	2	2
Total (#)	0	0	0	2	4	6
Total (%)	0	0	0	33	67	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	0	1
1996	0	0	0	5	0	5
1997	0	0	0	0	2	2
1998	0	0	0	0	2	2
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	0	0	0	2	0	2
Total (#)	0	0	0	8	4	12
Total (%)	0	0	0	67	33	100

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	1	1
1996	0	0	0	0	0	0
1997	0	0	0	1	0	1
1998	0	0	1	1	3	5
1999	0	0	0	1	5	6
2000	0	2	0	1	1	4
2001	0	0	0	0	0	0
Total (#)	0	2	1	4	10	17
Total (%)	0	12	6	24	59	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	1	0	1
1998	0	0	0	0	0	0
1999	0	1	1	0	0	2
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
Total (#)	0	1	1	1	0	3
Total (%)	0	33	33	33	0	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	0	1	1	2
1996	0	0	0	5	0	5
1997	0	0	0	4	4	8
1998	0	0	1	1	5	7
1999	0	1	1	1	5	8
2000	0	2	0	1	1	4
2001	0	0	0	2	4	6
Total #	0	3	2	15	20	40

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	130	121	146	145	100	56	139	
Highest:	252	158	641	2325	2302	857	761	
Mean:	191	141	290	773	565	293	383	
Median:	191	136	221	470	289	126	374	

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
1995
1996
1997
1998
1999
2000
2001
Grand Total	0	8	5	38	50	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	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	8	39	84	102	233
1996	0	16	34	93	103	246
1997	2	6	17	41	86	152
1998	0	6	27	78	115	226
1999	1	11	51	86	87	236
2000	2	32	48	78	115	275
2001	0	17	56	118	142	333
Total (#)	5	96	272	578	750	1701
Total (%)	0	5	16	34	44	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
1995	0	43	179	373	415	1010
1996	11	103	187	262	306	869
1997	4	45	128	340	429	946
1998	0	59	158	311	410	938
1999	7	100	203	318	482	1110
2000	12	137	207	340	383	1079
2001	4	168	306	471	611	1560
Total (#)	38	655	1368	2415	3036	7512
Total (%)	1	9	18	32	40	100

Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
	Very Low	Low	Medium	High	Very High	
1995	0	4	14	9	21	48
1996	2	23	21	16	18	80
1997	0	2	8	10	19	39
1998	0	7	20	24	18	69
1999	5	13	15	8	8	49
2000	1	11	12	20	17	61
2001	0	20	18	36	22	96
Total (#)	8	80	108	123	123	442
Total (%)	2	18	24	28	28	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	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 samples submitted for commercial production within each potassium classification.

Summary (#)	Very Low	Low	Medium	High	Very High	Un-known	Total
1995	0	55	232	466	538	51	1342
1996	13	142	242	371	427	41	1236
1997	6	53	153	391	534	8	1145
1998	0	72	205	413	543	42	1275
1999	13	124	269	412	577	41	1436
2000	15	180	267	438	515	11	1426
2001	4	205	380	625	775	69	2058
Grand Total	51	831	1748	3116	3909	263	9918

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	44	22	30	42	1	14	22	
Highest:	1337	1418	917	3817	1071	1276	1945	
Mean:	212	191	209	217	201	192	206	
Median:	173	152	186	178	166	153	162	

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

% summary	Very Low	Low	Medium	High	Very High	Un-known	Total
1995	0	4	17	35	40	4	100
1996	1	11	20	30	35	3	100
1997	1	5	13	34	47	1	100
1998	0	6	16	32	43	3	100
1999	1	9	19	29	40	3	100
2000	1	13	19	31	36	1	100
2001	0	10	18	30	38	3	100
Grand Total	1	8	18	31	39	3	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	0	2	2
1996	0	0	0	0	5	5
1997	0	0	0	0	8	8
1998	0	0	0	0	7	7
1999	0	0	0	0	8	8
2000	0	0	0	0	4	4
2001	0	0	0	0	6	6
Total	0	0	0	0	40	40

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	419	323	213	292	363	409	353	
Highest:	485	465	456	1836	1885	1425	698	
Mean:	452	392	309	818	687	712	543	
Median:	452	371	301	722	437	507	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
1996
1997
1998
1999
2000
2001
Total	0	0	0	0	100	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	3	19	160	1160	1342
1996	0	3	12	119	1102	1236
1997	0	1	13	158	973	1145
1998	0	5	12	110	1148	1275
1999	0	0	13	142	1281	1436
2000	0	3	10	149	1264	1426
2001	0	1	16	134	1907	2058
Total	0	16	95	972	8835	9918

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	49	48	55	27	73	43	58	
Highest:	1646	985	1650	1855	1046	1298	2016	
Mean:	361	378	650	372	378	389	404	
Median:	347	362	341	365	367	388	396	

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	12	86	100
1996	0	0	1	10	89	100
1997	0	0	1	14	85	100
1998	0	0	1	9	90	100
1999	0	0	1	10	89	100
2000	0	0	1	10	89	100
2001	0	0	1	7	93	100
Total	0	0	1	10	89	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	2	0	2
1996	4	1	5
1997	8	0	8
1998	7	0	7
1999	8	0	8
2000	4	0	4
2001	6	0	6
Total	39	1	40

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	.	.	.
	.	.	.
	.	.	.
	.	.	.
	.	.	.
	.	.	.
	.	.	.
	.	.	.
	98	3	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	4	3	4	5	3	2	1	
Highest:	17	302	36	48	23	7	15	
Mean:	11	63	9	21	9	4	5	
Median:	11	4	6	12	7	3	4	

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	1307	35	1342
1996	1219	17	1236
1997	1129	16	1145
1998	1243	32	1275
1999	1416	20	1436
2000	1401	25	1426
2001	2033	25	2058
Total	9748	170	9918

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	97	3	100
	99	1	100
	99	1	100
	97	3	100
	99	1	100
	98	2	100
	99	1	100
	98	2	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	1	1	1	1	1	1	1	
Highest:	194	119	330	115	93	213	142	
Mean:	11	11	12	11	10	10	9	
Median:	7	7	8	7	7	6	6	

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	2	0	2	.	.	.
1996	4	1	5	.	.	.
1997	8	0	8	.	.	.
1998	6	1	7	.	.	.
1999	8	0	8	.	.	.
2000	4	0	4	.	.	.
2001	6	0	6	.	.	.
Total	38	2	40	95	5	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	42	26	19	29	34	19	29	
Highest:	45	123	98	114	92	60	66	
Mean:	43	51	52	57	50	43	43	
Median:	43	30	46	38	45	46	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	1333	9	1342
1996	1228	8	1236
1997	1139	6	1145
1998	1272	3	1275
1999	1435	1	1436
2000	1421	5	1426
2001	2052	6	2058
Total	9880	38	9918

Percentages:

	0-99	>99	Total
	Normal	Excessive	
	99	1	100
	99	1	100
	99	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:	6	6	6	7	7	4	6	
Highest:	185	202	162	153	118	211	315	
Mean:	30	31	30	29	28	27	33	
Median:	27	28	27	27	26	23	31	

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	2	0	2
1996	0	2	3	5
1997	0	0	8	8
1998	0	0	7	7
1999	0	0	8	8
2000	0	1	3	4
2001	0	0	6	6
Total	0	5	35	40

Percentages:

<0.5	0.5-1.0	>1	Total
Low	Medium	High	
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0	13	88	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.9	0.8	1.1	2.9	2.3	1.0	3.3	
Highest:	1.1	22.9	21.7	96.8	178.1	14.9	51.2	
Mean:	1.0	5.9	6.8	24.7	30.1	5.4	19.9	
Median:	1.0	1.6	2.9	10.1	7.6	2.8	11.4	

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	37	396	909	1342
1996	38	340	858	1236
1997	20	224	901	1145
1998	24	357	894	1275
1999	67	342	1027	1436
2000	59	405	962	1426
2001	29	260	1769	2058
Total	274	2324	7320	9918

Percentages:

<0.5	0.5-1.0	>1	Total
Low	Medium	High	
3	30	68	100
3	28	69	100
2	20	79	100
2	28	70	100
5	24	72	100
4	28	67	100
1	13	86	100
3	23	74	100

	1995	1996	1997	1998	1999	2000	2001	
Lowest:	0.2	0.1	0.1	0.1	0.1	0.1	0.1	
Highest:	384.4	55.4	34.2	24.9	31.7	38.0	20.0	
Mean:	2.4	1.7	2.1	1.7	1.9	1.7	2.4	
Median:	1.4	1.4	1.8	1.4	1.5	1.4	1.9	

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
BLU/BLB	Blueberries
CEM	Cemetery
END	Endives
FAR	Fairway
FLA	Flowering Annuals
GRA	Grapes
GEN	Green
HRB	Herbs
IDL	Idle land
LAW	Lawn
LET	Lettuce
MIX/MVG	Mixed vegetables
MML	Muskmelon
ONS	Onion-seeded
OTH	Other
PAR	Pears
PER	Perennials
POP	Popcorn
PRK	Park
POT/PTO	Potatoes
PUM	Pumpkins
ROD	Roadside
ROS	Roses
ROU	Rough
RSF	Raspberries, Fall
RSP	Raspberries (homeowners)
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

Ketterings, Q.M., H. Krol, W.S. Reid and B.P. Tillapaugh (2003). Wyoming County Soil Sample Survey 1995-2001. CSS Extension Bulletin E03-22. 40 pages.

Crop Code	Crop Description
TRF	Tree Fruits
TRT	Christmas trees, Topdressing