

Rao, R., D. Olsen, Q.M. Ketterings, and H. Krol (2007). Putnam Soil Sample Survey (2002-2006). CSS Extension Bulletin E07-45. 21 pages.

Soil Sample Survey

Putnam County

Samples analyzed by CNAL (2002-2006)



Putnam County (photo credit: Dianne Olsen, CCE of Putnam County).

Summary compiled by

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Cornell Nutrient Analysis Laboratory
<http://www.css.cornell.edu/soiltest/newindex.asp>

&

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



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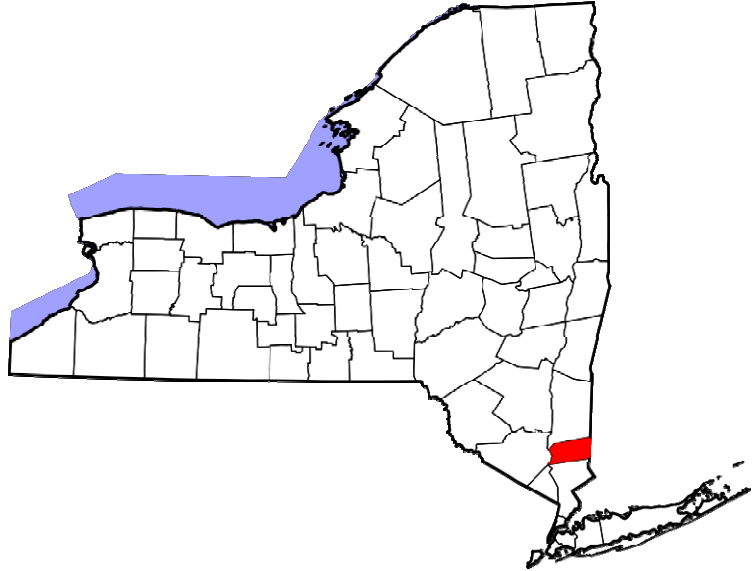


Putnam County (photo credit: Dianne Olsen, CCE of Putnam County).

1. County Introduction

Putnam County is located in the southeastern part of New York State, between the New York-Connecticut border on its east, the Hudson River on its west, north of White Plains and southeast of Newburgh.

According to the U.S. Census Bureau, the county has a total area of 246 square miles of which 231 square miles are land and 15 square miles are water.



Putnam County's Strategic Planning Document for 2010 indicates a serious commitment to controlling over-fertilization of lawns. The county is

studying how best to promote public awareness of the negative impacts of unnecessary phosphorus on surface water. CCE-Putnam began the Turf Love IPM lawn care education program for homeowners in 2007, and with a grant from the Blue-Green Summit, will expand the program in 2008 to include IPM education for nursery retailers and landscape professionals.

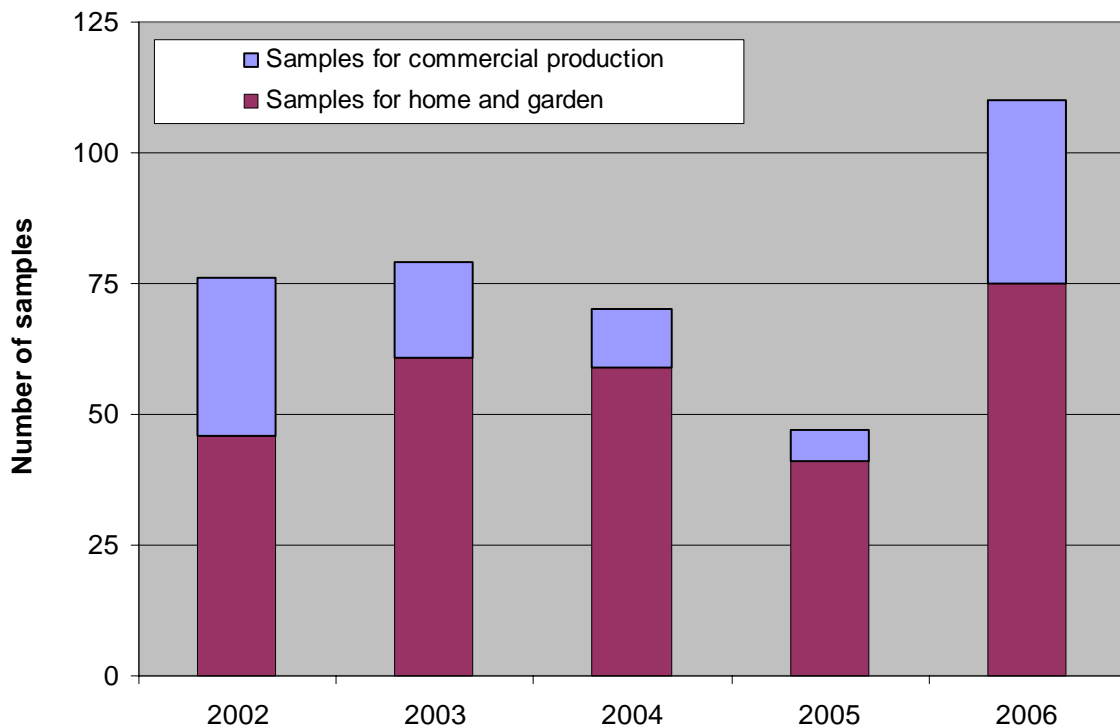
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2. General Survey Summary

This survey summarizes the soil test results from grower (identified as “commercial samples”) and homeowner samples from Putnam County submitted to the Cornell Nutrient Analysis Laboratory (CNAL) from 2002 to 2006. The total number of samples analyzed in these years amounted to 382. Of these, 100 samples (26%) were submitted by commercial growers while 282 samples (74%) were submitted by homeowners.



Homeowners		Commercial		Total
2002	46	2002	30	76
2003	61	2003	18	79
2004	59	2004	11	70
2005	41	2005	6	47
<u>2006</u>	<u>75</u>	<u>2006</u>	<u>35</u>	<u>110</u>
Total	282	Total	100	382

Homeowners submitted soil samples to the Cornell Nutrient Analysis Laboratory during 2002-2006 primarily to request fertilizer recommendations for lawns (51%) or for home garden vegetable production (16%). Commercial growers submitted samples primarily to grow pasture (73%).

Soils tested for home and garden in Putnam County were classified as belonging to soil management group 2 (24%), group 3 (22%), group 4 (41%), or group 5 (12%). A description of the different management groups is given below.

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 by commercial growers, 91% were group 4 soil, 8% group 3 soils while 1 sample was a group 5 soil. Paxton was the most common soil series (34% of all samples), followed by Charlton (16%), Georgia (13%) and Middlebury, Udorthents and Woodbridge (7% each).

Organic matter levels, as measured by loss-on-ignition, ranged from less than 1% to 25%. For homeowners most samples had between 2 and 5% organic matter (61% of all samples). Of the samples submitted by commercial growers, 84% contained between 2 and 5% organic matter.

Soil pH in water (1:1 soil:water extraction ratio) varied from 3.6 to 8.3 for home and garden samples while 62% tested between pH 6.0 and 7.4. For the commercial samples, the highest pH was 7.8 and 68% tested between pH 5.5 and 7.0.

Extractable nutrients such as phosphorus (P), potassium (K), magnesium (Mg), calcium (Ca), iron (Fe), manganese (Mn), and zinc (Zn) were measured using the Morgan method (Morgan, 1941). This solution contains sodium acetate buffered at 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 anything higher is classified as very high. For homeowners, 15% of the soils tested low for P, 25% tested medium, 37% tested high and 23% tested very high. This meant that 60% tested high or very high in P. For commercial growers, 8% tested very high. In total 32% were low in P, 39% tested medium for P while 21% of the submitted samples were classified as high in soil test P. This means that 29% tested high or very high in P.

Classifications for K depend on soil management group. The fine textured soils (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 medium, 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 Table below).

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

Potassium classifications for Putnam County soils varied from very low (5% of the commercial growers' soils) to very high (35% of the homeowner soils and 26% of the commercial growers' soils). For homeowners, 14% tested low in K, 17% tested medium, and 34% tested high for potassium. For commercial growers' soils, 19% tested low, 26% tested medium and 24% tested high in K.

Soils test very low for Mg 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 Mg. 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 18 to more than 2500 lbs Mg/acre. There was only one homeowner soil sample that tested very low for Mg. Most soils tested high or very high for Mg (93% of the homeowner soils and 89% of the soils of the commercial growers).

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. Ninety-four percent of all samples were classified as normal in iron. Similarly, 99% 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 Zn 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 homeowner soils, 87% tested high for Zn while 9% tested medium and 4% tested low in Zn. Of the commercial growers' samples, 17% tested low, 17% tested medium while 66% were high in Zn.

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 3.

3. Cropping Systems

3.1 Homeowner Samples

Crops for which recommendations are requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ALG	3	2	1	0	0	6	2
APR	0	0	0	0	1	1	0
ATF	3	2	0	1	7	13	5
FLA	1	2	3	0	1	7	2
GRA	0	0	0	6	0	6	2
IDL	0	0	0	0	4	4	1
LAW	14	35	42	16	37	144	51
MVG	13	7	8	8	10	46	16
OTH	1	1	1	1	1	5	2
PER	2	7	2	7	3	21	7
ROD	0	0	0	0	1	1	0
ROS	0	0	1	1	0	2	1
RSF	1	0	0	0	0	1	0
RSP	1	0	0	0	0	1	0
SAG	6	4	1	1	9	21	7
TRF	1	1	0	0	0	2	1
Unknown	0	0	0	0	1	1	0
Total	46	61	59	41	75	282	100

3.2 Commercial Samples

Crops for which recommendations are requested in commercial samples:

Current year crop	2002-06	%
APP	5	5
BCT	1	1
GIT	1	1
GRT	6	6
IDL	12	12
MUS	1	1
PGE/PGT	42	42
PIT	9	9
PNT	22	22
SWC	1	1
Total	100	100

Note: See Appendix for Cornell crop codes.

4. Soil Types

4.1 Homeowner Samples

Soil types (soil management groups) for homeowner samples:

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	9	7	9	16	26	67	24
SMG 3 (silt loam)	6	13	17	8	19	63	22
SMG 4 (sandy loam)	22	37	24	15	19	117	41
SMG 5 (sandy)	9	4	9	2	11	35	12
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	46	61	59	41	75	282	100

4.2 Commercial Samples

Soil series for commercial samples:

Name	SMG	2002-06	%
Charlton	4	16	16
Georgia	4	13	13
Knickerbocker	5	1	1
Leicester	4	4	4
Massena	4	2	2
Middlebury	3	7	7
Paxton	4	34	34
Pompton	4	2	2
Sutton	4	6	6
Tioga	3	1	1
Udorthents	4	7	7
Woodbridge	4	7	7
Total	-	100	100

5. Organic Matter

5.1 Homeowner Samples

Organic matter (loss-on-ignition method) in homeowner samples (number):

	<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
2002	1	7	8	6	6	6	2	10	46
2003	1	1	5	25	14	6	1	8	61
2004	1	4	9	12	12	7	3	11	59
2005	2	3	4	8	7	9	5	3	41
2006	4	6	21	18	18	4	0	4	75
Total	9	21	47	69	57	32	11	36	282

	2002	2003	2004	2005	2006
Lowest:	0.7	0.8	0.8	0.4	0.2
Highest:	11.2	10.3	25.2	12.1	20.1
Mean:	4.5	4.4	4.9	4.5	3.6
Median:	4.2	3.8	4.3	4.5	3.2

Organic matter in homeowner samples (% of total number of samples):

	<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
2002	2	15	17	13	13	13	4	22	100
2003	2	2	8	41	23	10	2	13	100
2004	2	7	15	20	20	12	5	19	100
2005	5	7	10	20	17	22	12	7	100
2006	5	8	28	24	24	5	0	5	100
Total	3	7	17	24	20	11	4	13	100

5.2 Commercial Samples

Organic matter (loss-on-ignition method) in commercial samples (number):

	<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
Number	2	10	24	40	20	4	0	0	100
Percentage	2	10	24	40	20	4	0	0	100

	2002-06
Lowest:	0.5
Highest:	5.8
Mean:	3.2
Median:	3.3

6. pH

6.1 Homeowner Samples

pH of homeowner samples (numbers):

	<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
2002	0	1	1	6	4	13	12	8	1	0	46
2003	0	0	5	14	11	24	6	1	0	0	61
2004	0	1	10	12	15	12	9	0	0	0	59
2005	1	3	5	5	10	8	5	4	0	0	41
2006	0	2	9	15	16	14	17	2	0	0	75
Total	1	7	30	52	56	71	49	15	1	0	282

	2002	2003	2004	2005	2006
Lowest:	4.8	5.0	4.7	3.6	4.8
Highest:	8.3	7.7	7.4	7.9	7.7
Mean:	-	-	-	-	-
Median:	6.9	6.5	6.1	6.3	6.3

pH of homeowner of samples (% of total number of samples):

	<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
2002	0	2	2	13	9	28	26	17	2	0	100
2003	0	0	8	23	18	39	10	2	0	0	100
2004	0	2	17	20	25	20	15	0	0	0	100
2005	2	7	12	12	24	20	12	10	0	0	100
2006	0	3	12	20	21	19	23	3	0	0	100
Total	0	2	11	18	20	25	17	5	0	0	100

6.2 Commercial Samples

pH of commercial samples (number):

	<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
#	0	3	10	22	27	19	11	8	0	0	100
%	0	3	10	22	27	19	11	8	0	0	100

	2002-06
Lowest:	4.6
Highest:	7.8
Mean:	-
Median:	6.1

7. Phosphorus

7.1 Homeowner Samples

Phosphorus (lbs/acre Morgan P) in homeowner samples (numbers):

	<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	
2002	0	8	7	15	4	1	2	4	1	4	46
2003	0	7	16	25	4	2	1	1	1	4	61
2004	0	7	10	25	4	1	1	3	3	5	59
2005	0	7	10	15	3	0	0	2	3	1	41
2006	0	14	27	24	5	0	0	1	1	3	75
Total	0	43	70	104	20	4	4	11	9	17	282

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

	2002	2003	2004	2005	2006
Lowest:	1	1	2	1	2
Highest:	578	557	432	239	406
Mean:	71	53	56	37	28
Median:	21	11	17	13	8

Phosphorus in homeowner samples (% of total number of samples):

	<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	
2002	0	17	15	33	9	2	4	9	2	9	100
2003	0	11	26	41	7	3	2	2	2	7	100
2004	0	12	17	42	7	2	2	5	5	8	100
2005	0	17	24	37	7	0	0	5	7	2	100
2006	0	19	36	32	7	0	0	1	1	4	100
Total	0	15	25	37	7	1	1	4	3	6	100

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

7.2 Commercial Samples

Phosphorus (lbs P/acre Morgan extraction) for commercial samples (number):

	<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	
Total	0	32	39	21	1	0	1	4	0	2	100

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

	2002-06
Lowest:	1
Highest:	366
Mean:	19
Median:	5

Phosphorus in commercial samples (% of total number of samples):

	<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	
Total	0	32	39	21	1	0	1	4	0	2	100

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

8. Potassium

8.1 Homeowner Samples

Potassium (lbs K/acre Morgan extraction) in homeowner samples (number):

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	0	1	1	7	9
2003	0	0	1	3	3	7
2004	0	2	0	2	5	9
2005	0	0	5	4	7	16
2006	0	0	2	17	7	26
Total (#)	0	2	9	27	29	67
Total (%)	0	3	13	40	43	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	1	1	3	1	6
2003	0	2	1	6	4	13
2004	0	2	3	3	9	17
2005	0	0	2	3	3	8
2006	0	2	4	9	4	19
Total (#)	0	7	11	24	21	63
Total (%)	0	11	17	38	33	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	4	2	5	11	22
2003	0	8	11	9	9	37
2004	0	7	5	2	10	24
2005	0	1	0	6	8	15
2006	0	2	1	8	8	19
Total (#)	0	22	19	30	46	117
Total (%)	0	19	16	26	39	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	2	2	4	1	9
2003	0	2	1	1	0	4
2004	0	1	3	4	1	9
2005	0	0	1	1	0	2
2006	0	3	3	3	1	10
Total (#)	0	8	10	13	3	34
Total (%)	0	24	29	38	9	100

Potassium classification summary for homeowners:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	0	7	6	13	20	46
2003	0	12	14	19	16	61
2004	0	12	11	11	25	59
2005	0	1	8	14	18	41
2006	0	7	10	38	20	75
Grand Total	0	39	49	95	99	282

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	0	15	13	28	43	100
2003	0	20	23	31	26	100
2004	0	20	19	19	42	100
2005	0	2	20	34	44	100
2006	0	9	13	51	27	100
Grand Total	0	14	17	34	35	100

	2002	2003	2004	2005	2006
Lowest:	54	56	57	58	52
Highest:	4081	990	1014	657	2677
Mean:	334	213	238	231	214
Median:	193	140	175	208	156

8.2 Commercial Samples

Potassium (lbs K/acre Morgan extraction) in commercial samples (number):

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
Total (#)	0	0	0	0	0	0
Total (%)	-	-	-	-	-	-
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
	Very Low	Low	Medium	High	Very High	
Total (#)	1	3	1	2	1	8
Total (%)	13	38	13	25	13	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
	Very Low	Low	Medium	High	Very High	
Total (#)	4	16	24	22	25	91
Total (%)	4	18	26	24	27	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
	Very Low	Low	Medium	High	Very High	
Total (#)	0	0	1	0	0	1
Total (%)	0	0	100	0	0	100

Potassium classification summary for commercial samples.

	Very Low	Low	Medium	High	Very High	Total
Number	5	19	26	24	26	100
Percentage	5	19	26	24	26	100

	2002-06
Lowest:	34
Highest:	803
Mean:	195
Median:	155

9. Magnesium

9.1 Homeowner Samples

Magnesium (lbs Mg/acre Morgan extraction) in homeowner samples (numbers):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
2002	0	1	2	5	38	46
2003	0	1	4	5	51	61
2004	0	0	3	12	44	59
2005	0	2	0	7	32	41
2006	1	4	3	13	54	75
Total	1	8	12	42	219	282

	2002	2003	2004	2005	2006
Lowest:	55	42	84	45	18
Highest:	1605	1400	2528	1647	1851
Mean:	476	447	459	421	376
Median:	386	366	368	392	300

Magnesium in homeowner samples (% of total number of samples):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
2002	0	2	4	11	83	100
2003	0	2	7	8	84	100
2004	0	0	5	20	75	100
2005	0	5	0	17	78	100
2006	1	5	4	17	72	100
Total	0	3	4	15	78	100

9.2 Commercial Samples

Magnesium (lbs Mg/acre Morgan extraction) in commercial samples (number):

	<20	20-65	66-100	101-199	>199	Total
	Very Low	Low	Medium	High	Very High	
Total	0	8	3	19	70	100
Total	0	8	3	19	70	100

	2002-06
Lowest:	24
Highest:	1277
Mean:	366
Median:	335

10. Iron

10.1 Homeowner Samples

Iron (lbs Fe/acre Morgan extraction) in homeowner samples:

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
2002	45	1	46
2003	57	4	61
2004	58	1	59
2005	37	4	41
2006	68	7	75
Total	265	17	282

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	98	2	100
	93	7	100
	98	2	100
	90	10	100
	91	9	100
	94	6	100

	2002	2003	2004	2005	2006
Lowest:	1	1	2	2	2
Highest:	59	96	55	1810	339
Mean:	9	13	12	61	20
Median:	6	6	9	9	11

10.2 Commercial Samples

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

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
Total	94	6	100

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	94	6	100

	2002-06
Lowest:	1
Highest:	224
Mean:	17
Median:	10

11. Manganese

11.1 Homeowner Samples

Manganese (lbs Mn/acre Morgan extraction) in homeowner samples:

Total number of samples:				Percentages:		
	0-99	>99	Total	0-99	>99	Total
	Normal	Excessive		Normal	Excessive	
2002	45	1	46	98	2	100
2003	60	1	61	98	2	100
2004	59	0	59	100	0	100
2005	40	1	41	98	2	100
2006	75	0	75	100	0	100
Total	279	3	282	99	1	100

	2002	2003	2004	2005	2006
Lowest:	12	13	13	7	3
Highest:	243	158	88	604	68
Mean:	35	38	41	57	28
Median:	29	34	38	35	26

11.2 Commercial Samples

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

Total number of samples:				Percentages:		
	0-99	>99	Total	0-99	>99	Total
	Normal	Excessive		Normal	Excessive	
Total	99	1	100	99	1	100

	2002-06
Lowest:	7
Highest:	177
Mean:	26
Median:	22

12. Zinc

12.1 Homeowner Samples

Zinc (lbs Zn/acre Morgan extraction) in homeowner samples:

Total number of samples:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
2002	0	5	41	46
2003	0	4	57	61
2004	0	3	56	59
2005	1	3	37	41
2006	11	11	53	75
Total	12	26	244	282

Percentages:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
	0	11	89	100
	0	7	93	100
	0	5	95	100
	2	7	90	100
	15	15	71	100
	4	9	87	100

	2002	2003	2004	2005	2006
Lowest:	0.7	0.7	0.7	0.1	0.1
Highest:	3740.7	150.9	88.0	131.4	66.3
Mean:	95.5	12.2	12.6	11.4	5.2
Median:	6.9	5.1	7.1	4.5	1.9

12.2 Commercial Samples

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

Total number of samples:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
Total	17	17	66	100

Percentages:

	<0.5	0.5-1.0	>1	Total
	Low	Medium	High	
	17	17	66	100

	2002-06
Lowest:	0.1
Highest:	27.9
Mean:	2.5
Median:	1.5

Appendix: Cornell Crop Codes

Crop codes used in the Cornell Nutrient Analysis 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
Corn	
COG	Corn grain
COS	Corn silage

Crop Code	Crop Description
	Grasses, pastures, covercrops
CVE	Crownvetch, Establishment
CVT	Crownvetch, Established
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
RYC	Rye cover crop
RYS	Rye seed production
TRP	Triticale peas
	Small grains
MIL	Millet
OAS	Oats seeded 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
BDR/DND	Beans-dry
BLU	Blueberries
CEM	Cemetery
FAR	Fairway
FLA	Flowering annuals
GRA	Grapes
GEN	Green

Crop Code	Crop Description
HRB	Herbs
IDL	Idle land
LAW	Lawn
MIX/MVG	Mixed vegetables
PER	Perennials
PRK	Park
POT/PTO	Potatoes
PUM	Pumpkins
ROD	Roadside
ROS	Roses
RSF	Raspberries, Fall
RSP	Raspberries (homeowners)
RSS	Raspberries, Summer
SAG	Ornamentals adapted to pH 6.0 to 7.5
SQW	Squash, Winter
STE	Strawberries, Ever
STR	Strawberries (homeowners)
STS	Strawberries, Spring
SUN	Sunflowers
SWC	Sweet corn
TOM	Tomatoes
TRE	Christmas trees, Establishment
TRF	Turf
TRT	Christmas trees, Topdressing