

Rao, R., C.P. Mazza, J. Ameroso, Q.M. Ketterings, and H. Krol (2008). New York City Soil Sample Survey (2002-2006). CSS Extension Bulletin E08-2. 55 pages.

# Home & Community Garden 2002-2006 Soil Sample Survey **NEW YORK CITY**

*Bronx, Queens, Kings,  
Richmond and Manhattan*

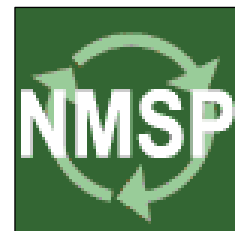


Samples analyzed by the  
Cornell Nutrient Analysis Laboratory (CNAL)

Renuka Rao, Charlie Mazza, John Ameroso  
Quirine M. Ketterings, and Hettie Krol



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



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*Bronx, Queens, Kings,  
Richmond and Manhattan*

**Samples analyzed by CNAL in 2002-2006**

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## **1. Introduction to New York City Gardens and Soils**

New York City is made up of five political boroughs that are also counties. New York City is an archipelago of islands along the Atlantic Ocean, with only a small part (the Bronx) on the mainland, north of the islands. Manhattan and Richmond (Staten Island) are separate islands, while Kings (Brooklyn) and Queens are boroughs/counties on the larger Long Island. A ridge along the northern end of Staten Island, Brooklyn, Queens (and extends eastward on Long Island) marks the terminal moraine of the last glacial period, making the land south of this ridge an outwash plain. Prior to the rapid residential and commercial development of Brooklyn, Queens and Staten Island, large parts of the outwash plains formed good, flat agricultural land.

The native soils vary from sandy along the Atlantic Ocean coast to a wider range of soil types in the constructed areas. Much of Manhattan Island, for instance, consists of fill from other sites. Some of the fill extended the shoreline of the islands; in many cases, the fill came from excavating for subways and large buildings with deep foundations and lower level construction. Bedrock in Manhattan is deep enough to carry the weight of the skyscrapers in Lower Manhattan (near the Wall Street Financial District) and mid-town (near the Rockefeller Center and Times Square Area). The area in between (Greenwich Village and Chelsea) has much shallower bedrock, which disallows for the construction of tall skyscrapers in that area.

There is one educational farm in Queens (on the Nassau County border). On Staten Island there are two farms: (1) Gericke Farm, which is part of Clay Pit Ponds State Park Preserve, and (2) the Decker Farm. The Gericke Farm is 22 acres, of which 2 acres of sandy-loam soil is farmed by a local school. The Decker Farm is 16 acres of which 8 acres of clay-loam soil. This farm is part of Historic Richmond Town and currently farmed by participants in a Cornell Cooperative Extension project with GreenMarkets called the "New Farmer Development Project". The two Staten Island farms are original farms dating back to the late 1700's or early 1800's. The Riker's Island prison project, which had up to 12 acres in the 1980's, is now a garden program due to new construction on the island.

The newest urban farm in Red Hook, Brooklyn, consists of one and a half acres of compost/soil mix on top of a City Parks Department playground. John Bowne High

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School in Queens, has two acres of mixed production on clay loam soils. Most edible and non-edible plants, however, are grown in home gardens and community gardens. Home gardens abound in all boroughs, but especially in residential neighborhoods in Kings, Queens, Bronx and Richmond Counties. Community gardens – publicly owned land used to grow plants by groups of people – exist in all five boroughs (counties) of New York City but tend to be most abundant in areas where land is less desirable for construction and land values are depressed. The areas where many of the community gardens were established were often rubble strewn (brick, mortar, asphalt pieces, etc.) from remnants of former buildings. In many cases, where community gardens are permitted for group use, new soil is brought in from outside New York City and poured into constructed raised beds. Issues concerning heavy metals from lead paint and other debris on these formerly abandoned sites have prompted caution. Community gardens often, but not always, grow edible plants, which might be contaminated if lead or other heavy metals were absorbed by the plants. Soil testing will be useful in determining both nutrient needs and potential contamination issues.

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## 2. General Survey Summary

This survey summarizes the soil test results from community garden and home garden soil samples from the Bronx, Queens, Kings, Richmond and Manhattan counties submitted for analyses to the Cornell Nutrient Analysis Laboratory (CNAL) during 2002-2006. The total number of samples analyzed in these years in New York City and vicinity amounted to 46 (Bronx), 113 (Queens), 215 (Kings), 85 (Richmond) and 151 (Manhattan) resulting in a total of 610 samples over the 5 year period (Table 1).

Table 1: Total number of home and community garden samples submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006.

	Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
2002	8	15	21	31	81	156 (26%)
2003	9	14	47	37	55	162 (27%)
2004	6	33	42	11	4	96 (16%)
2005	17	11	58	4	4	94 (15%)
2006	6	40	47	2	7	102 (17%)
Total	46 (8%)	113 (19%)	215 (35%)	85 (14%)	151 (25%)	610 (100)

Twenty-nine percent of the home and community garden samples were submitted to obtain soil fertility data and recommendations for lawns. Seventeen percent of the identified samples were for ornamentals adapted to soils that are slightly acid to calcareous (SAG, pH 6.0-7.5) while 15% were for perennials. Another 10% of the samples identified mixed vegetables as the target plants (Table 2). Six percent of the samples were sent in for ornamentals adapted to low pH levels (acidic, pH 4.5-6.0). The remaining samples requested recommendations for athletic fields, cemeteries, flowering plants, roses, and other plants including fruit trees, grapes, herbs, etc.

Samples submitted from New York City were mostly sandy loam (soil management group 4), accounting for 36% of the samples, while silt loam (soil management group 3), accounted for 35% of the samples. See Table 3 for a more detailed description of the soil management groups and Table 4 for a distribution of samples among the soil management groups. Seventeen percent of the samples represented soil management group 5 which consists of sandy soils. Another twelve percent of the soils represented silty soils belonging to soil management group 2. None of the samples classified as clay or muck soils.

Table 2: Number of samples submitted for soil fertility analyses and recommendations per crop/plant grown in home or community gardens in NYC in 2002-2006.

		Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
ALG	Ornamentals (pH 4.5-6.0)	0	7	11	2	17	37 (6)
ATF	Athletic Field	1	5	3	0	6	15 (3)
CEM	Cemetery	0	20	1	0	0	21 (3)
COS	Corn Silage	3	0	4	0	0	7 (1)
FLA	Flowering Annuals	4	1	9	0	10	24 (4)
GRA	Grapes	0	1	0	0	1	2 (<1)
HRB	Herbs	0	0	4	0	0	4 (1)
IDL	Idle land	0	1	0	0	0	1 (<1)
LAW	Lawn	13	21	39	53	48	174 (29)
MVG	Mixed vegetables	7	14	34	6	2	63 (10)
OTH	Other	4	3	18	1	5	31 (5)
PER	Perennials	5	16	46	9	14	90 (15)
PRK	Park	0	0	1	0	6	7 (1)
ROS	Roses	1	1	1	0	1	4 (1)
ROU	Rough turf	0	1	0	0	0	1 (<1)
SAG	Ornamentals (pH 6.0-7.5)	4	18	35	8	41	106 (17)
SPB	Spring flowering bulbs	0	1	5	0	0	6 (1)
TRF	Tree fruits	0	0	2	0	0	2 (<1)
?	Unknown (not specified)	4	3	2	6	0	15 (2)
Total		46	113	215	85	151	610 (100)

Table 3: Soil management groups for New York State.

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.



Table 4: Number of home and community garden samples per soil management group (SMG) submitted to the Cornell Nutrient Analysis Laboratory during 2002-2006. The soil management groups (Table 3) impact availability of potassium and the recommendations.

SMG	Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
1	0	0	0	0	0	0 (0)
2	6	13	21	20	16	76 (12)
3	20	43	60	56	32	211 (35)
4	12	41	89	8	70	220 (36)
5	8	16	45	1	33	103 (17)
6	0	0	0	0	0	0 (0)
Total	46	113	215	85	151	610 (100)

Levels of organic matter varied widely in the soils that were submitted for analysis. Twenty eight percent of the samples had organic matter levels between 3 and 4%. Organic matter levels in the intervals of 2-3% and greater than 7% both had 19% of the samples, together accounting for 38% percent of the total samples submitted. Thirteen percent of the samples fell in the range of 4-5% organic matter while, 8% of the samples had less than 2% organic matter. Thirteen percent of the samples had organic matter levels between 5 and 7% (Table 5).

Table 5: Distribution of samples per organic matter level for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory during 2002-2006.

Organic Matter (%)	Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
<1	0	0	3	3	0	6 (1)
1.0-1.9	3	16	13	6	4	42 (7)
2.0-2.9	10	28	29	26	26	119 (19)
3.0-3.9	7	34	68	20	40	169 (28)
4.0-4.9	6	12	39	4	20	81 (13)
5.0-5.9	3	8	21	4	12	48 (8)
6.0-6.9	3	7	9	3	9	31 (5)
>6.9	14	8	33	19	40	114 (19)
Total	46	113	215	85	151	610 (100)

Soil pH is a measure of soil acidity. Some plants are adapted to lower pH while others grow best on higher pH soils (generally pH 6 and over). Table 6 shows examples of ornamentals adapted to low versus higher pH status.

Table 6: Ornamentals adapted pH less than or greater than pH 6.0.

Adapted to pH 4.5-6.0	Azalea, Bayberry, Bigleaf Hydrangea, Chokeberry, Franklina, Holly, Inkberry, Leucothoe, Mountain Laurel, Oak, Pachistima, Pieris, Rhododendron, Sheep Laurel, Sourwood, Spicebush, Winterberry.
Adapted to pH 6.0-7.5	Abelia, Almond, Ajuga, Arborvitae, Ash, Barberry, Beautybush, Birch (White), Bittersweet, Boxwood, Chastetree, Chestnut, Clematis, Coralberry, Cotoneaster, Crabapple, Cranberry bush, Cypress, Daphne, Deutzia, Dogwood, Enkianthus, Euonymus, Firethorn, Fir, Forsythia, Fringe Tree, Germander, Ginko, Golden Chain, Hawthorn, Hemlock, Hollygrape, Honey Locust, Honeysuckle, Hornbeam, Hydrangea, Hypericum, Ivy, Jetbead, Juniper, Larch, Lilac, Linden, Magnolia, Maple, Mockorange, Oak (English, Scarlet, Turkey), Pea Shrub, Pine, Plum (Flowering), Privet, Quince, Redbud, Rose of Sharon, Sassafras, Spirea, Spruce, Sweet Gum, Sweet Shrub, Sycamore, Tulip Tree, Tupelo (Gum), Va. Creeper, Viburnum, Vinca, Walnut, Wayfaring Tree, Weigela, Willow, Wisteria, Witch Hazel, Yellow-wood, Yew.

Home and community garden samples had a wide range of pH values (Table 7). Four percent of the samples analyzed had a pH less than 5. Thirteen percent of sample results had a pH between 5 and 6, while 81% of the samples accounted for pH levels in the range of 6 to 8. Very high pH values of 8 and higher (calcareous soils) were found for 3% of the samples.

Table 7: Number of samples in each of the pH classes for home and community garden soils submitted between 2002-2006.

pH	Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
<4.5	0	0	2	2	2	6 (1)
4.5-4.9	4	2	6	3	1	16 (3)
5.0-5.4	3	5	9	3	5	25 (4)
5.5-5.9	2	11	27	2	12	54 (9)
6.0-6.4	4	25	32	14	34	109 (18)
6.5-6.9	15	43	56	17	40	171 (28)
7.0-7.4	15	17	51	28	37	148 (24)
7.5-7.9	3	9	26	13	18	69 (11)
8.0-8.4	0	1	5	3	2	11 (2)
>8.4	0	0	1	0	0	1 (<1)
Total	46	113	215	85	151	610 (100)

Extractable nutrients such as phosphorus (P), potassium (K), magnesium (Mg), iron (Fe), manganese (Mn), and zinc (Zn) were measured using the Morgan chemical extraction

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solution and method. This solution contains sodium acetate buffered at a pH of 4.8. Other extraction methods exist that give very different results.

Soil test phosphorus 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 40 lbs P/acre or more are classified as very high. Of the 610 samples submitted to the Cornell Nutrient Analysis Laboratory between 2002 and 2006, none tested very low in phosphorus. Four percent of the samples tested high in phosphorus, while 60% of the soils were classified as very high in phosphorus (Table 8). This meant that for 90% of the soils tested, for most plants, no additional phosphorus fertilizer would be needed for proper plant growth and soil health.

Table 8: Distribution of samples over different soil phosphorus availability classes for home and community garden soils submitted between 2002-2006. Soil test phosphorus 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 40 lbs P/acre or more are classified as very high.

Soil Test lbs P/acre	Classification	Bronx	Queens	Kings	Rich- mond	Man- hattan	Total (%)
<1	Very Low	0	0	0	0	0	0 (0)
1-3	Low	0	4	1	20	1	26 (4)
4-8	Medium	2	9	5	13	6	35 (6)
9-39	High	19	45	58	22	39	183 (30)
40-60	Very High	6	23	32	10	29	100 (16)
61-80	Very High	8	13	25	3	23	72 (12)
81-100	Very High	0	6	23	3	16	48 (8)
101-150	Very High	2	5	40	6	13	66 (11)
151-200	Very High	3	2	12	2	2	21 (3)
>200	Very High	6	6	19	6	22	59 (10)
Total		46	113	215	85	151	610 (100)

Classifications for potassium in soils throughout the entire state of New York depend on soil management group. The fine-textured soils of soil management group 1 contain a lot of potassium-containing clay and have as a result a greater K supplying capacity than the coarse-textured sandy soils of soil management group 5. Because of these differences in potassium supplying capacity among soils of different origins (soil management groups as outlined in Table 3), the classifications and interpretations for potassium availability

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differ among the six groups. This is shown in Table 9. So for example for soils in soil management group 3, <45 lbs K/acre in the soil test means the soil is very low in K. If the soil test is between 45 and 79 lbs K/acre the soil is classified as low in potassium. Between 80 and 119 lbs K/acre is considered medium; between 120 and 199 lbs K/acre is high, and >199 lbs K/acre is classified as very high in plant available potassium (Table 9).

Table 9: Potassium soil test interpretations for New York State soils.

Soil Management Group	Cornell Potassium Soil Test (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 samples submitted during 2002-2006 from New York City, 6% were classified as very low or low in potassium availability (Table 10). Twelve percent were classified as medium in potassium, while 30% showed high levels. Fifty two percent of the submitted samples had very high levels of potassium. Therefore, 82% of the tested samples were high or very high in potassium availability, where for many crops and non-edible plants, very little or no additional potassium fertilizer would be recommended.

Table 10: Number of samples in each of the potassium soil fertility classes for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006. The classification (low, medium, etc.) of the actual soil tests depend on the specific soil and its soil management group (see Tables 3 and 9).

Classification	Bronx	Queens	Kings	Richmond	Manhattan	Total (%)
Very Low	0	0	0	0	0	0 (0)
Low	0	1	6	2	0	9 (2)
Medium	0	2	3	0	1	6 (1)
High	3	32	31	5	16	87 (14)
Very High	43	78	175	78	134	508 (83)
Total	46	113	215	85	151	610 (100)

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. None of the soil samples submitted to the laboratory tested very low in magnesium; most of the samples tested high (14%) or very high (83%). Two percent tested low while, one percent tested medium for magnesium availability (Table 11). Thus, also magnesium deficiency is unlikely to occur in many soils in New York City.

Table 11: Number of samples in each of the magnesium soil fertility classes for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006.

Soil test lbs Mg/acre	Classification	Bronx	Queens	Kings	Rich- mond	Man- hattan	Total (%)
<20	Very low	0	0	0	0	0	0 (0)
20-65	Low	0	1	6	2	0	9 (2)
66-100	Medium	0	2	3	0	1	6 (1)
101-199	High	3	32	31	5	16	87 (14)
200+	Very high	43	78	175	78	134	508 (83)
Total		46	113	215	85	151	610 (100)

Soils with more than 50 lbs Morgan extractable iron per acre test excessive for iron. Anything lower than 50 lbs Fe/acre is considered normal. Of the 610 samples collected 582 (95%) samples classified as normal in iron availability (Table 12). The remainder had excessive levels of iron for optimal plant growth.

Table 12: Number of samples testing normal or excessive for iron for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006.

Soil test lbs Fe/acre	Classification	Bronx	Queens	Kings	Rich- mond	Man- hattan	Total (%)
<50	Normal	42	110	206	80	144	582 (95)
50+	Excessive	4	3	9	5	7	28 (5)
Total	Total	46	113	215	85	151	610 (100)

Soils with more than 100 lbs Morgan extractable manganese per acre are classified as excessive in Mn. Anything less than 100 lbs Mn per acre is classified as normal. Of the 610 samples, 584 (96%) were classified as normal in manganese availability (Table 13).

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The remaining soil samples classified as excessive levels of manganese availability for optimal plant growth.

Table 13: Number of samples testing normal or excessive for manganese for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006.

Soil test lbs Mn/acre	Classification	Bronx	Queens	Kings	Rich- mond	Man- hattan	Total (%)
<100	Normal	39	111	210	77	147	584 (96)
100+	Excessive	7	2	5	8	4	26 (4)
Total		46	113	215	85	151	610 (100)

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 community garden samples all of the samples (100%) tested high in zinc (Table 14).

Table 14: Number of samples testing low, medium or high in zinc for iron for home and community garden samples from New York City submitted to the Cornell Nutrient Analysis Laboratory in 2002-2006.

Soil test lbs Zn/acre	Classification	Bronx	Queens	Kings	Rich- mond	Man- hattan	Total (%)
<0.5	Low	0	0	0	0	0	0 (0)
0.5-1.0	Medium	0	0	0		0	0 (0)
>1.0	High	46	113	215	85	151	610 (100)
Total		46	113	215	85	151	610 (100)

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. Crops/Plants

#### 3.1 Bronx

Plants/crops for which recommendations were requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ATF	0	0	0	1	0	1	2
COS	1	0	1	1	0	3	7
FLA	0	0	0	4	0	4	9
LAW	0	2	4	4	3	13	28
MVG	3	2	1	1	0	7	15
OTH	1	1	0	0	2	4	9
PER	0	0	0	4	1	5	11
ROS	0	0	0	1	0	1	2
SAG	3	0	0	1	0	4	9
Unknown	0	4	0	0	0	4	9
Total	8	9	6	17	6	46	100

See Appendix for Cornell crop codes.

#### 3.2 Queens

Crops for which recommendations were requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ALG	1	4	0	2	0	7	6
ATF	0	0	4	0	1	5	4
CEM	0	0	20	0	0	20	18
FLA	0	0	0	0	1	1	1
GRA	0	0	0	0	1	1	1
IDL	0	0	0	0	1	1	1
LAW	3	3	2	3	10	21	19
MVG	6	1	1	2	4	14	12
OTH	1	2	0	0	0	3	3
PER	0	0	1	0	15	16	14
ROS	0	0	0	0	1	1	1
ROU	0	0	1	0	0	1	1
SAG	2	3	3	4	6	18	16
SPB	1	0	0	0	0	1	1
Unknown	1	1	1	0	0	3	3
Total	15	14	33	11	40	113	100

See Appendix for Cornell crop codes.

### 3.3 Kings

Crops for which recommendations were requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ALG	0	6	1	2	2	11	5
ATF	0	0	2	0	1	3	1
CEM	0	1	0	0	0	1	0
COS	0	4	0	0	0	4	2
FLA	0	3	2	3	1	9	4
HRB	0	1	1	2	0	4	2
LAW	1	14	8	12	4	39	18
MVG	1	7	6	11	9	34	16
OTH	2	0	13	1	2	18	8
PER	10	0	3	17	16	46	21
PRK	0	0	0	1	0	1	0
ROS	0	1	0	0	0	1	0
SAG	2	8	6	9	10	35	16
SPB	3	1	0	0	1	5	2
TRF	0	1	0	0	1	2	1
Unknown	2	0	0	0	0	2	1
Total	21	47	42	58	47	215	100

See Appendix for Cornell crop codes.

### 3.4 Richmond

Crops for which recommendations were requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ALG	0	1	1	0	0	2	2
LAW	24	25	1	1	2	53	62
MVG	1	4	0	1	0	6	7
OTH	0	1	0	0	0	1	1
PER	1	0	8	0	0	9	11
SAG	5	0	1	2	0	8	9
Unknown	0	6	0	0	0	6	7
Total	31	37	11	4	2	85	100

See Appendix for Cornell crop codes.



### **3.5 Manhattan**

Crops for which recommendations were requested by homeowners:

	2002	2003	2004	2005	2006	Total	%
ALG	15	0	1	1	0	17	11
ATF	0	6	0	0	0	6	4
FLA	2	7	0	1	0	10	7
GRA	1	0	0	0	0	1	1
LAW	19	28	1	0	0	48	32
MVG	1	1	0	0	0	2	1
OTH	0	3	1	0	1	5	3
PER	10	2	0	1	1	14	9
PRK	5	0	0	0	1	6	4
ROS	1	0	0	0	0	1	1
SAG	27	8	1	1	4	41	27
Total	81	55	4	4	7	151	100

See Appendix for Cornell crop codes.

## 4. Soil Types

### 4.1 Bronx

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

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	2	1	0	0	3	6	13
SMG 3 (silt loam)	1	3	4	10	2	20	43
SMG 4 (sandy loam)	4	3	1	4	0	12	26
SMG 5 (sandy)	1	2	1	3	1	8	17
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	8	9	6	17	6	46	100

### 4.2 Queens

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

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	4	2	2	2	3	13	12
SMG 3 (silt loam)	6	9	9	2	17	43	38
SMG 4 (sandy loam)	5	0	17	6	13	41	36
SMG 5 (sandy)	0	3	5	1	7	16	14
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	15	14	33	11	40	113	100

### 4.3 Kings

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

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	3	1	2	8	7	21	10
SMG 3 (silt loam)	8	10	15	10	17	60	28
SMG 4 (sandy loam)	7	24	13	28	17	89	41
SMG 5 (sandy)	3	12	12	12	6	45	21
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	21	47	42	58	47	215	100

#### **4.4 Richmond**

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

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	3	6	8	3	0	20	24
SMG 3 (silt loam)	26	28	0	0	2	56	66
SMG 4 (sandy loam)	1	3	3	1	0	8	9
SMG 5 (sandy)	1	0	0	0	0	1	1
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	31	37	11	4	2	85	100

#### **4.5 Manhattan**

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

	2002	2003	2004	2005	2006	Total	%
SMG 1 (clayey)	0	0	0	0	0	0	0
SMG 2 (silty)	3	10	0	1	2	16	11
SMG 3 (silt loam)	21	8	1	1	1	32	21
SMG 4 (sandy loam)	32	31	2	1	4	70	46
SMG 5 (sandy)	25	6	1	1	0	33	22
SMG 6 (mucky)	0	0	0	0	0	0	0
Total	81	55	4	4	7	151	100

## 5. Organic Matter

### 5.1 Bronx

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
2002	0	0	2	2	1	0	1	2	8
2003	0	0	4	1	1	0	0	3	9
2004	0	0	1	0	1	1	1	2	6
2005	0	1	2	2	3	2	1	6	17
2006	0	2	1	2	0	0	0	1	6
Total	0	3	10	7	6	3	3	14	46

	2002	2003	2004	2005	2006
Lowest:	2.0	2.1	2.9	1.6	1.4
Highest:	9.3	9.1	11.6	21.4	11.9
Mean:	4.5	5.0	6.8	8.5	4.1
Median:	3.9	3.8	6.3	5.2	3.0

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
2002	0	0	25	25	13	0	13	25	100
2003	0	0	44	11	11	0	0	33	100
2004	0	0	17	0	17	17	17	33	100
2005	0	6	12	12	18	12	6	35	100
2006	0	36	17	33	0	0	0	17	100
Total	0	7	22	15	13	7	7	30	100

## 5.2 Queens

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
2002	0	1	1	5	3	1	2	2	15
2003	0	0	6	2	2	1	1	2	14
2004	0	3	12	8	4	4	1	1	33
2005	0	1	1	7	1	0	0	1	11
2006	0	11	8	12	2	2	3	2	40
Total	0	16	28	34	12	8	7	8	113

	2002	2003	2004	2005	2006
Lowest:	1.3	2.1	1.7	1.7	1.1
Highest:	8.2	9.0	9.8	9.8	8.2
Mean:	4.6	4.2	3.5	4.0	3.3
Median:	4.7	3.5	3.0	3.5	3.2

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
2002	0	7	7	33	20	7	13	13	100
2003	0	0	43	14	14	7	7	14	100
2004	0	9	36	24	12	12	3	3	100
2005	0	9	9	64	9	0	0	9	100
2006	0	28	20	30	5	5	8	5	100
Total	0	14	25	30	11	7	6	7	100

### 5.3 Kings

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
2002	0	4	1	5	4	2	2	3	21
2003	1	5	5	15	7	4	3	7	47
2004	0	1	7	17	7	4	1	5	42
2005	1	2	7	15	14	6	2	11	58
2006	1	1	9	16	7	5	1	7	47
Total	3	13	29	68	39	21	9	33	215

	2002	2003	2004	2005	2006
Lowest:	1.2	0.7	1.0	0.3	0.3
Highest:	15.4	15.5	16.7	42.6	30.1
Mean:	4.8	4.6	4.6	5.8	5.5
Median:	4.2	3.8	3.7	4.2	3.7

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
2002	0	19	5	24	19	10	10	14	100
2003	2	11	11	32	15	9	6	15	100
2004	0	2	17	40	17	10	2	12	100
2005	2	3	12	26	24	10	3	19	100
2006	2	2	19	34	15	11	2	15	100
Total	1	6	13	32	18	10	4	15	100

## 5.4 Richmond

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
2002	3	1	12	6	0	1	1	7	31
2003	0	5	10	10	3	1	0	8	37
2004	0	0	2	3	0	2	2	2	11
2005	0	0	0	1	1	0	0	2	4
2006	0	0	2	0	0	0	0	0	2
Total	3	6	26	20	4	4	3	19	85

	2002	2003	2004	2005	2006
Lowest:	0.8	1.1	2.8	3.8	2.4
Highest:	37.8	28.1	10.3	7.3	2.9
Mean:	8.8	5.5	5.2	5.7	2.7
Median:	2.8	3.4	5.4	5.9	2.7

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
2002	10	3	39	19	0	3	3	23	100
2003	0	14	27	27	8	3	0	22	100
2004	0	0	18	27	0	18	18	18	100
2005	0	0	0	25	25	0	0	50	100
2006	0	0	100	0	0	0	0	0	100
Total	4	7	31	24	5	5	4	22	100

## 5.5 Manhattan

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
2002	0	1	13	16	10	8	4	29	81
2003	0	2	11	21	7	4	5	5	55
2004	0	1	1	1	0	0	0	1	4
2005	0	0	0	1	1	0	0	2	4
2006	0	0	1	1	2	0	0	3	7
Total	0	4	26	40	20	12	9	40	151

	2002	2003	2004	2005	2006
Lowest:	1.8	1.6	1.8	3.0	2.6
Highest:	36.5	13.8	8.7	25.1	11.6
Mean:	7.0	4.3	4.0	11.9	5.8
Median:	5.0	3.5	2.7	9.8	4.6

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
2002	0	1	16	20	12	10	5	36	100
2003	0	4	20	38	13	7	9	9	100
2004	0	25	25	25	0	0	0	25	100
2005	0	0	0	25	25	0	0	50	100
2006	0	0	14	14	29	0	0	43	100
Total	0	3	17	26	13	8	6	26	100



## 6. pH

### 6.1 Bronx

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
2002	0	0	1	1	1	2	3	0	0	0	8
2003	0	0	0	0	2	2	5	0	0	0	9
2004	0	0	1	1	1	2	0	1	0	0	6
2005	0	4	1	0	0	7	4	1	0	0	17
2006	0	0	0	0	0	2	3	1	0	0	6
Total	0	4	3	2	4	15	15	3	0	0	46

	2002	2003	2004	2005	2006
Lowest:	5.4	6.1	5.3	4.7	6.6
Highest:	7.3	7.4	7.7	7.6	7.6
Mean:	-	-	-	-	-
Median:	6.7	7.0	6.3	6.7	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
2002	0	0	13	13	13	25	38	0	0	0	100
2003	0	0	0	0	22	22	56	0	0	0	100
2004	0	0	17	17	17	33	0	17	0	0	100
2005	0	24	6	0	0	41	24	6	0	0	100
2006	0	0	0	0	0	33	50	17	0	0	100
Total	0	9	7	4	9	33	33	7	0	0	100

## 6.2 Queens

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
2002	0	0	0	1	3	5	4	2	0	0	15
2003	0	0	0	1	1	9	1	2	0	0	14
2004	0	1	5	7	7	11	1	1	0	0	33
2005	0	1	0	0	1	3	6	0	0	0	11
2006	0	0	0	2	13	15	5	4	1	0	40
Total	0	2	5	11	25	43	17	9	1	0	113

	2002	2003	2004	2005	2006
Lowest:	5.5	5.8	4.9	4.7	5.7
Highest:	7.8	7.9	7.5	7.4	8.3
Mean:	-	-	-	-	-
Median:	6.9	6.7	6.1	7.0	6.7

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	7	20	33	27	13	0	0	100
1996	0	0	0	7	7	64	7	14	0	0	100
1997	0	3	15	21	21	33	3	3	0	0	100
1998	0	9	0	0	9	27	55	0	0	0	100
1999	0	0	0	5	33	38	13	10	3	0	100
Total	0	2	4	10	22	38	15	8	1	0	100

### 6.3 Kings

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
2002	0	0	0	6	5	3	4	3	0	0	21
2003	2	0	3	5	5	14	8	7	3	0	47
2004	0	1	3	6	6	9	12	5	0	0	42
2005	0	3	1	9	6	17	15	6	1	0	58
2006	0	2	2	1	10	13	12	5	1	1	47
Total	2	6	9	27	32	56	51	26	5	1	215

	2002	2003	2004	2005	2006
Lowest:	5.6	4.3	4.9	4.6	4.7
Highest:	7.9	8.3	7.6	8.1	8.6
Mean:	-	-	-	-	-
Median:	6.3	6.8	6.7	6.8	6.7

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
2002	0	0	0	29	24	14	19	14	0	0	100
2003	4	0	6	11	11	30	17	15	6	0	100
2004	0	2	7	14	14	21	29	12	0	0	100
2005	0	5	2	16	10	29	26	10	2	0	100
2006	0	4	4	2	21	28	26	11	2	2	100
Total	1	3	4	13	15	26	24	12	2	0	100

## 6.4 Richmond

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
2002	0	0	0	1	5	10	9	4	2	0	31
2003	2	2	1	0	6	3	15	7	1	0	37
2004	0	1	2	1	1	3	2	1	0	0	11
2005	0	0	0	0	2	1	1	0	0	0	4
2006	0	0	0	0	0	0	1	1	0	0	2
Total	2	3	3	2	14	17	28	13	3	0	85

	2002	2003	2004	2005	2006
Lowest:	5.5	4.1	4.7	6.4	7.3
Highest:	8.1	8.0	7.5	7.4	7.5
Mean:	-	-	-	-	-
Median:	6.8	7.1	6.5	6.6	7.4

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
2002	0	0	0	3	16	32	29	13	6	0	100
2003	5	5	3	0	16	8	41	19	3	0	100
2004	0	9	18	9	9	27	18	9	0	0	100
2005	0	0	0	0	50	25	25	0	0	0	100
2006	0	0	0	0	0	0	50	50	0	0	100
Total	2	4	4	2	16	20	33	15	4	0	100

## 6.5 Manhattan

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
2002	2	0	5	8	24	10	19	12	1	0	81
2003	0	0	0	3	9	25	15	2	1	0	55
2004	0	0	0	0	0	1	0	3	0	0	4
2005	0	1	0	0	0	2	0	1	0	0	4
2006	0	0	0	1	1	2	3	0	0	0	7
Total	2	1	5	12	34	40	37	18	2	0	151

	2002	2003	2004	2005	2006
Lowest:	2	9	4	7	2
Highest:	258	237	268	86	266
Mean:	-	-	-	-	-
Median:	81	30	21	44	30

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
2002	2	0	6	10	30	12	23	15	1	0	100
2003	0	0	0	5	16	45	27	4	2	0	100
2004	0	0	0	0	0	25	0	75	0	0	100
2005	0	25	0	0	0	50	0	25	0	0	100
2006	0	0	0	14	14	29	43	0	0	0	100
Total	1	1	3	8	23	26	25	12	1	0	100

## 7. Phosphorus

### 7.1 Bronx

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	
2002	0	0	1	1	2	2	0	0	1	1	8
2003	0	0	0	6	0	3	0	0	0	0	9
2004	0	0	1	1	2	1	0	0	0	1	6
2005	0	0	0	5	2	2	0	2	2	4	17
2006	0	0	0	6	0	0	0	0	0	0	6
Total	0	0	2	19	6	8	0	2	3	6	46

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

	2002	2003	2004	2005	2006
Lowest:	8	16	7	21	16
Highest:	204	75	266	936	36
Mean:	70	37	80	266	24
Median:	60	27	53	75	23

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	
2002	0	0	13	13	25	25	0	0	13	13	100
2003	0	0	0	67	0	33	0	0	0	0	100
2004	0	0	17	17	33	17	0	0	0	17	100
2005	0	0	0	29	12	12	0	12	12	24	100
2006	0	0	0	100	0	0	0	0	0	0	100
Total	0	0	4	41	13	17	0	4	7	13	100

## 7.2 Queens

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	
2002	0	1	1	2	2	2	3	3	0	1	15
2003	0	0	0	8	2	1	0	1	1	1	14
2004	0	0	6	14	5	5	1	1	0	1	33
2005	0	0	1	2	6	1	1	0	0	0	11
2006	0	3	1	19	8	4	1	0	1	3	40
Total	0	4	9	45	23	13	6	5	2	6	113

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

	2002	2003	2004	2005	2006
Lowest:	2	9	4	7	2
Highest:	258	237	268	86	266
Mean:	81	60	41	42	51
Median:	74	30	21	44	30

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	
2002	0	7	7	13	13	13	20	20	0	7	100
2003	0	0	0	57	14	7	0	7	7	7	100
2004	0	0	18	42	15	15	3	3	0	3	100
2005	0	0	9	18	55	9	9	0	0	0	100
2006	0	8	3	48	20	10	3	0	3	8	100
Total	0	4	8	40	20	12	5	4	2	5	100

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

### 7.3 Kings

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	
2002	0	0	1	5	7	2	0	3	1	2	21
2003	0	1	0	22	3	4	1	11	3	2	47
2004	0	0	1	11	6	4	11	5	2	2	42
2005	0	0	2	11	11	4	6	13	6	5	58
2006	0	0	1	9	5	11	5	8	0	8	47
Total	0	1	5	58	32	25	23	40	12	19	215

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

	2002	2003	2004	2005	2006
Lowest:	8	1	7	6	8
Highest:	252	220	616	642	890
Mean:	78	70	95	107	131
Median:	54	41	69	84	76

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	
2002	0	0	5	24	33	10	0	14	5	10	100
2003	0	2	0	47	6	9	2	23	6	4	100
2004	0	0	2	26	14	10	26	12	5	5	100
2005	0	0	3	19	19	7	10	22	10	9	100
2006	0	0	2	19	11	23	11	17	0	17	100
Total	0	0	2	27	15	12	11	19	6	9	100

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



## 7.4 Richmond

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	
2002	0	9	5	8	5	1	0	2	0	1	31
2003	0	10	6	8	3	2	1	3	1	3	37
2004	0	1	2	3	1	0	2	1	0	1	11
2005	0	0	0	1	1	0	0	0	1	1	4
2006	0	0	0	2	0	0	0	0	0	0	2
Total	0	20	13	22	10	3	3	6	2	6	85

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

	2002	2003	2004	2005	2006
Lowest:	1	1	2	24	29
Highest:	462	483	211	309	49
Mean:	40	59	55	138	39
Median:	11	9	19	110	39

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	
2002	0	29	16	26	16	3	0	6	0	3	100
2003	0	27	16	22	8	5	3	8	3	8	100
2004	0	9	18	27	9	0	18	9	0	9	100
2005	0	0	0	25	25	0	0	0	25	25	100
2006	0	0	0	100	0	0	0	0	0	0	100
Total	0	24	15	26	12	4	4	7	2	7	100

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

## 7.5 Manhattan

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	
2002	0	1	4	22	13	11	12	6	1	11	81
2003	0	0	2	15	13	11	1	5	0	8	55
2004	0	0	0	0	2	0	0	1	0	1	4
2005	0	0	0	1	0	0	0	1	1	1	4
2006	0	0	0	1	1	1	3	0	0	1	7
Total	0	1	6	39	29	23	16	13	2	22	151

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

	2002	2003	2004	2005	2006
Lowest:	1	6	48	35	14
Highest:	539	561	305	1577	201
Mean:	93	104	130	476	88
Median:	61	55	84	145	88

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	
2002	0	1	5	27	16	14	15	7	1	14	100
2003	0	0	4	27	24	20	2	9	0	15	100
2004	0	0	0	0	50	0	0	25	0	25	100
2005	0	0	0	25	0	0	0	25	25	25	100
2006	0	0	0	14	14	14	43	0	0	14	100
Total	0	1	4	26	19	15	11	9	1	15	100

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

## 8. Potassium

### 8.1 Bronx

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

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	0	0	1	1	2
2003	0	0	0	1	0	1
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	1	2	3
Total (#)	0	0	0	3	3	6
Total (%)	0	0	0	50	50	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	0	0	0	1	1
2003	0	0	0	2	1	3
2004	0	0	0	2	2	4
2005	0	0	0	1	9	10
2006	0	0	0	0	2	2
Total	0	0	0	5	15	20
Total (%)	0	0	0	25	75	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	0	0	0	4	4
2003	0	0	2	1	0	3
2004	0	0	0	1	0	1
2005	0	0	0	2	2	4
2006	0	0	0	0	0	0
Total (#)	0	0	2	4	6	12
Total (%)	0	0	17	33	50	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	0	0	0	1	1
2003	0	0	1	0	1	2
2004	0	0	0	0	1	1
2005	0	0	0	2	1	3
2006	0	0	0	0	1	1
Total (#)	0	0	1	2	5	8
Total (%)	0	0	13	25	63	100

Roa, R., C.P. Mazza, Q.M. Ketterings, and H. Krol (2008). Home and community garden soil samples survey of New York City. CSS Extension Bulletin E08-02. 55 pages.

Number of home and garden samples within each potassium classification:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	0	0	0	1	7	8
2003	0	0	3	4	2	9
2004	0	0	0	3	3	6
2005	0	0	0	5	12	17
2006	0	0	0	1	5	6
Total #	0	0	3	14	29	46

	2002	2003	2004	2005	2006
Lowest:	161	103	177	124	124
Highest:	1212	437	293	15552	561
Mean:	447	201	233	3678	333
Median:	425	166	234	275	317

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	0	0	0	13	88	100
2003	0	0	33	44	22	100
2004	0	0	0	50	50	100
2005	0	0	0	29	71	100
2006	0	0	0	17	83	100
Grand Total	0	0	7	30	63	100

## 8.2 Queens

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

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	0	0	2	2	4
2003	0	0	0	1	1	2
2004	0	0	1	1	0	2
2005	0	0	0	2	0	2
2006	0	0	0	1	2	3
Total (#)	0	0	1	7	5	13
Total (%)	0	0	8	54	38	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	0	1	2	3	6
2003	0	0	2	2	5	9
2004	0	1	0	2	6	9
2005	0	0	0	1	1	2
2006	0	2	2	7	6	17
Total	0	3	5	14	21	43
Total (%)	0	7	12	33	49	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	0	1	2	2	5
2003	0	0	0	0	0	0
2004	0	3	2	6	6	17
2005	0	0	2	2	2	6
2006	0	2	9	1	1	13
Total (#)	0	5	14	11	11	41
Total (%)	0	12	34	27	27	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	0	0	0	0	0
2003	0	0	2	0	1	3
2004	0	0	2	3	0	5
2005	0	0	1	0	0	1
2006	0	2	2	2	1	7
Total (#)	0	2	7	5	2	16
Total (%)	0	13	44	31	13	100

Number of home and garden samples within each potassium classification:

Roa, R., C.P. Mazza, Q.M. Ketterings, and H. Krol (2008). Home and community garden soil samples survey of New York City. CSS Extension Bulletin E08-02. 55 pages.

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	0	0	2	6	7	15
2003	0	0	4	3	7	14
2004	0	4	5	12	12	33
2005	0	0	3	5	3	11
2006	0	6	13	11	10	40
Total #	0	10	27	37	39	113

	2002	2003	2004	2005	2006
Lowest:	84	80	63	118	50
Highest:	430	331	401	383	1047
Mean:	211	196	210	198	203
Median:	210	199	212	166	140

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	0	0	13	40	47	100
2003	0	0	29	21	50	100
2004	0	12	15	36	36	100
2005	0	0	27	45	27	100
2006	0	15	33	28	25	100
Grand Total	0	9	24	33	35	100

### 8.3 Kings

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

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	0	0	1	2	3
2003	0	0	0	1	0	1
2004	0	0	0	0	2	2
2005	0	0	0	1	7	8
2006	0	0	1	0	6	7
Total (#)	0	0	1	3	17	21
Total (%)	0	0	5	14	81	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	0	1	3	4	8
2003	0	1	1	3	5	10
2004	0	0	0	3	12	15
2005	0	0	0	4	6	10
2006	0	0	1	4	12	17
Total (#)	0	1	3	17	39	60
Total (%)	0	2	5	28	65	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	0	1	0	6	7
2003	0	0	0	16	8	24
2004	0	0	2	6	5	13
2005	0	1	1	9	17	28
2006	0	0	4	4	9	17
Total (#)	0	1	8	35	45	89
Total (%)	0	1	9	39	51	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	1	0	0	2	3
2003	1	2	4	3	2	12
2004	1	2	2	6	1	12
2005	0	0	2	6	4	12
2006	0	1	2	0	3	6
Total (#)	2	6	10	15	12	45
Total (%)	4	13	22	33	27	100

Number of home and garden samples within each potassium classification:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	0	1	2	4	14	21
2003	1	3	5	23	15	47
2004	1	2	4	15	20	42
2005	0	1	3	20	34	58
2006	0	1	8	8	30	47
Total #	2	8	22	70	113	215

	2002	2003	2004	2005	2006
Lowest:	68	47	56	56	73
Highest:	878	944	1711	2499	1580
Mean:	316	232	302	329	340
Median:	261	195	216	269	268

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	0	5	10	19	67	100
2003	2	6	11	49	32	100
2004	2	5	10	36	48	100
2005	0	2	5	34	59	100
2006	0	2	17	17	64	100
Grand Total	1	4	10	33	53	100



## 8.4 Richmond

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

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	0	0	0	3	3
2003	0	3	0	0	3	6
2004	0	1	1	1	5	8
2005	0	0	0	0	3	3
2006	0	0	0	0	0	0
Total (#)	0	4	1	1	14	20
Total (%)	0	20	5	5	70	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	5	4	8	8	25
2003	0	4	4	9	11	28
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	1	1	0	2
Total (#)	0	9	9	18	19	55
Total (%)	0	16	16	33	35	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	0	0	0	1	1
2003	0	0	0	0	3	3
2004	0	1	0	1	1	3
2005	0	0	0	0	1	1
2006	0	0	0	0	0	0
Total (#)	0	1	0	1	6	8
Total (%)	0	13	0	13	75	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	0	0	1	0	1
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
Total (#)	0	0	0	1	0	1
Total (%)	0	0	0	100	0	100

Roa, R., C.P. Mazza, Q.M. Ketterings, and H. Krol (2008). Home and community garden soil samples survey of New York City. CSS Extension Bulletin E08-02. 55 pages.

Number of home and garden samples within each potassium classification:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	1	5	4	9	12	31
2003	3	4	4	9	17	37
2004	0	2	1	2	6	11
2005	0	0	0	0	4	4
2006	0	0	1	1	0	2
Total #	4	11	10	21	39	85

	2002	2003	2004	2005	2006
Lowest:	42	52	67	214	108
Highest:	2214	1238	819	390	159
Mean:	435	274	261	326	134
Median:	166	169	175	349	134

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	3	16	13	29	39	100
2003	8	11	11	24	46	100
2004	0	18	9	18	55	100
2005	0	0	0	0	100	100
2006	0	0	0	50	50	100
Grand Total	5	13	12	25	46	100

## 8.5 Manhattan

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

Soil Management Group 2						
	<40	40-69	70-99	100-164	>164	Total
	Very Low	Low	Medium	High	Very High	
2002	0	1	0	1	1	2
2003	0	0	0	1	9	10
2004	0	0	0	0	0	0
2005	0	0	0	0	1	1
2006	0	0	0	0	2	2
Total (#)	0	1	0	2	13	16
Total (%)	0	6	0	13	81	100
Soil Management Group 3						
	<45	45-79	80-119	120-199	>199	Total
2002	0	0	1	8	12	21
2003	0	0	0	5	3	8
2004	0	0	0	1	0	1
2005	0	0	0	0	1	1
2006	0	0	0	0	1	1
Total (#)	0	0	1	14	17	32
Total (%)	0	0	3	44	53	100
Soil Management Group 4						
	<55	55-99	100-149	150-239	>239	Total
2002	0	0	1	4	27	32
2003	0	0	7	6	18	31
2004	0	0	0	1	1	2
2005	0	0	0	0	1	1
2006	0	0	0	2	2	4
Total (#)	0	0	8	13	49	70
Total (%)	0	0	11	19	70	100
Soil Management Group 5						
	<60	60-114	115-164	165-269	>269	Total
2002	0	0	0	6	19	25
2003	0	0	1	3	2	6
2004	0	0	0	1	0	1
2005	0	0	1	0	0	1
2006	0	0	0	0	0	0
Total (#)	0	0	2	10	21	33
Total (%)	0	0	6	30	64	100

Roa, R., C.P. Mazza, Q.M. Ketterings, and H. Krol (2008). Home and community garden soil samples survey of New York City. CSS Extension Bulletin E08-02. 55 pages.

Number of home and garden samples within each potassium classification:

Summary (#)	Very Low	Low	Medium	High	Very High	Total
2002	0	1	2	19	59	81
2003	0	0	8	15	32	55
2004	0	0	0	3	1	4
2005	0	0	1	0	3	4
2006	0	0	0	2	5	7
Total #	0	1	11	39	100	151

	2002	2003	2004	2005	2006
Lowest:	54	113	189	163	170
Highest:	2304	13376	408	2325	743
Mean:	412	494	250	789	330
Median:	350	242	203	333	280

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

Summary (%)	Very Low	Low	Medium	High	Very High	Total
2002	0	1	2	23	73	100
2003	0	0	15	27	58	100
2004	0	0	0	75	25	100
2005	0	0	25	0	75	100
2006	0	0	0	29	71	100
Grand Total	0	1	7	26	66	100

## 9. Magnesium

### 9.1 Bronx

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	
2002	0	0	0	1	7	8
2003	0	0	0	0	9	9
2004	0	0	0	1	5	7
2005	0	0	0	0	17	17
2006	0	0	0	1	5	6
Total	0	0	0	3	43	46

	2002	2003	2004	2005	2006
Lowest:	163	222	197	274	175
Highest:	1217	836	803	7474	694
Mean:	498	449	436	2065	342
Median:	394	404	307	538	296

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	
2002	0	0	0	13	88	100
2003	0	0	0	0	100	100
2004	0	0	0	17	83	100
2005	0	0	0	0	100	100
2006	0	0	0	17	83	100
Total	0	0	0	7	93	100

## 9.2 Queens

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	
2002	0	0	0	3	12	15
2003	0	0	0	1	13	14
2004	0	0	1	12	20	33
2005	0	1	0	2	8	11
2006	0	0	1	14	25	40
Total	0	1	2	32	78	113

	2002	2003	2004	2005	2006
Lowest:	148	196	92	64	93
Highest:	616	668	924	776	1114
Mean:	378	404	293	313	302
Median:	364	400	226	251	211

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	
2002	0	0	0	20	80	100
2003	0	0	0	7	93	100
2004	0	0	3	36	61	100
2005	0	0	0	18	73	100
2006	0	9	3	35	63	100
Total	0	1	2	28	69	100

### 9.3 Kings

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	
2002	0	1	0	4	16	21
2003	0	1	2	7	37	47
2004	0	1	1	8	32	42
2005	0	2	0	11	45	58
2006	0	1	0	1	45	47
Total	0	6	3	31	175	215

	2002	2003	2004	2005	2006
Lowest:	60	47	61	57	51
Highest:	1306	1692	2011	2738	3069
Mean:	372	452	378	502	510
Median:	331	344	271	332	347

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	
2002	0	5	0	19	76	100
2003	0	2	4	15	79	100
2004	0	2	2	19	76	100
2005	0	3	0	19	78	100
2006	0	2	0	2	96	100
Total	0	3	1	14	81	100

## 9.4 Richmond

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	
2002	0	0	0	3	28	31
2003	0	2	0	2	33	37
2004	0	0	0	0	11	11
2005	0	0	0	0	4	4
2006	0	0	0	0	2	2
Total	0	2	0	5	78	85

	2002	2003	2004	2005	2006
Lowest:	149	54	204	509	232
Highest:	2012	1589	970	848	398
Mean:	596	490	522	640	315
Median:	357	438	494	601	315

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	
2002	0	0	0	10	90	100
2003	0	5	0	5	89	100
2004	0	0	0	0	100	100
2005	0	0	0	0	100	100
2006	0	0	0	0	100	100
Total	0	2	0	6	92	100



## 9.5 Manhattan

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	
2002	0	0	1	7	73	81
2003	0	0	0	6	49	55
2004	0	0	0	0	4	4
2005	0	0	0	1	3	4
2006	0	0	0	2	5	7
Total	0	0	1	16	134	151

	2002	2003	2004	2005	2006
Lowest:	92	123	258	185	178
Highest:	3382	3124	933	2110	518
Mean:	581	425	466	1021	338
Median:	395	382	338	894	356

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	
2002	0	0	1	9	90	100
2003	0	0	0	11	89	100
2004	0	0	0	0	100	100
2005	0	0	0	25	75	100
2006	0	0	0	29	71	100
Total	0	0	1	11	89	100

## 10. Iron

### 10.1 Bronx

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

Total number of samples:				Percentages:		
	0-49	>49	Total	0-49	>49	Total
	Normal	Excessive		Normal	Excessive	
2002	8	0	8	100	0	100
2003	9	0	9	100	0	100
2004	6	0	6	100	0	100
2005	13	4	17	76	24	100
2006	6	0	6	100	0	100
Total	42	4	46	91	9	100

	2002	2003	2004	2005	2006
Lowest:	2	3	8	3	4
Highest:	18	18	38	119	26
Mean:	6	10	18	29	15
Median:	7	11	13	8	15

### 10.2 Queens

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

Total number of samples:				Percentages:		
	0-49	>49	Total	0-49	>49	Total
	Normal	Excessive		Normal	Excessive	
2002	15	0	15	100	0	100
2003	12	2	14	86	14	100
2004	33	0	33	100	0	100
2005	11	0	11	100	0	100
2006	39	1	40	98	3	100
Total	110	3	113	97	3	100

	2002	2003	2004	2005	2006
Lowest:	3	3	2	6	3
Highest:	21	123	31	55	63
Mean:	7	21	13	14	12
Median:	6	7	12	9	9

### 10.3 Kings

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

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
2002	20	1	21
2003	45	2	47
2004	41	1	42
2005	54	4	58
2006	46	1	47
Total	206	9	113

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	95	5	100
	96	4	100
	98	2	100
	93	7	100
	98	2	100
	96	4	100

	2002	2003	2004	2005	2006
Lowest:	1	2	2	4	2
Highest:	108	102	55	223	84
Mean:	15	13	14	20	13
Median:	10	8	10	10	9

### 10.4 Richmond

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

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
2002	29	2	31
2003	35	2	37
2004	10	1	11
2005	4	0	4
2006	2	0	2
Total	80	5	85

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	94	6	100
	95	5	100
	91	9	100
	100	0	100
	100	0	100
	94	6	100

	2002	2003	2004	2005	2006
Lowest:	2	4	4	4	6
Highest:	77	76	53	8	8
Mean:	16	15	18	6	7
Median:	11	10	14	7	7

### 10.5 Manhattan

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

Total number of samples:

	0-49	>49	Total
	Normal	Excessive	
2002	74	7	81
2003	55	0	55
2004	4	0	4
2005	4	0	4
2006	7	0	7
Total	144	7	151

Percentages:

	0-49	>49	Total
	Normal	Excessive	
	91	0	100
	100	0	100
	100	0	100
	100	0	100
	100	0	100
	95	5	100

	2002	2003	2004	2005	2006
Lowest:	2	3	10	6	9
Highest:	182	46	13	14	35
Mean:	17	11	12	10	15
Median:	8	8	12	9	11

## 11. Manganese

### 11.1 Bronx

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	
2002	8	0	8	100	0	100
2003	6	3	9	67	33	100
2004	6	0	6	100	0	100
2005	13	4	17	76	24	100
2006	6	0	6	100	0	100
Total	39	7	46	85	15	100

	2002	2003	2004	2005	2006
Lowest:	16	11	16	14	24
Highest:	45	363	37	237	48
Mean:	27	125	25	74	36
Median:	31	18	23	30	37

### 11.2 Queens

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	
2002	15	0	15	100	0	100
2003	14	0	14	100	0	100
2004	33	0	33	100	0	100
2005	11	0	11	100	0	100
2006	38	2	40	95	5	100
Total	111	2	113	98	2	100

	2002	2003	2004	2005	2006
Lowest:	10	9	3	11	5
Highest:	32	96	51	39	127
Mean:	22	34	21	24	26
Median:	20	20	20	23	19

### 11.3 Kings

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	
2002	21	0	21	100	0	100
2003	47	0	47	100	0	100
2004	41	1	42	98	2	100
2005	56	2	58	97	3	100
2006	45	2	47	96	4	100
Total	210	5	215	98	2	100

	2002	2003	2004	2005	2006
Lowest:	5	6	7	9	5
Highest:	63	58	100	233	182
Mean:	21	19	24	30	27
Median:	17	17	18	21	18

### 11.4 Richmond

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	
2002	28	3	31	90	10	100
2003	35	2	37	95	5	100
2004	8	3	11	73	27	100
2005	4	0	4	100	0	100
2006	2	0	2	100	0	100
Total	77	8	85	91	9	100

	2002	2003	2004	2005	2006
Lowest:	12	11	5	27	20
Highest:	132	204	672	35	24
Mean:	41	37	139	32	22
Median:	28	25	39	33	22

### 11.5 Manhattan

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

Total number of samples:

	0-99	>99	Total
	Normal	Excessive	
2002	79	2	81
2003	53	2	55
2004	4	0	4
2005	4	0	4
2006	7	0	7
Total	147	4	151

Percentages:

0-99	>99	Total
Normal	Excessive	
98	2	100
96	4	100
100	0	100
100	0	100
100	0	100
97	3	100

	2002	2003	2004	2005	2006
Lowest:	5	7	15	10	8
Highest:	2122	233	75	54	44
Mean:	53	35	38	29	20
Median:	21	29	31	27	15

## 12. Zinc

### 12.1 Bronx

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	
2002	0	0	8	8
2003	0	0	9	9
2004	0	0	6	6
2005	0	0	17	17
2006	0	0	6	6
Total	0	0	46	46

Percentages:

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

	2002	2003	2004	2005	2006
Lowest:	4.2	7.5	18.7	2.8	4.1
Highest:	55.2	42.9	32.6	47.2	167.6
Mean:	12.9	25.5	23.2	21.2	36.0
Median:	11.4	27.2	21.6	20.2	10.0

### 12.2 Queens

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	
2002	0	0	15	15
2003	0	0	14	14
2004	0	0	33	33
2005	0	0	11	11
2006	0	0	40	40
Total	0	0	113	113

Percentages:

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

	2002	2003	2004	2005	2006
Lowest:	4.0	1.7	1.7	2.6	1.4
Highest:	199.8	163.9	129.7	51.0	77.1
Mean:	40.1	46.7	24.1	17.1	25.1
Median:	29.4	27.0	11.4	11.9	21.8



### 12.3 Kings

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	
2002	0	0	21	21
2003	0	0	47	47
2004	0	0	42	42
2005	0	0	58	58
2006	0	0	47	47
Total	0	0	215	215

Percentages:

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

	2002	2003	2004	2005	2006
Lowest:	9.4	2.6	2.3	3.1	1.6
Highest:	393.4	494.8	233.0	164.8	311.1
Mean:	86.6	52.2	47.9	45.7	48.6
Median:	43.0	33.7	36.0	29.9	44.5

### 12.4 Richmond

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	
2002	0	0	31	31
2003	0	0	37	37
2004	0	0	11	11
2005	0	0	4	4
2006	0	0	2	2
Total	0	0	85	85

Percentages:

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

	2002	2003	2004	2005	2006
Lowest:	1.1	1.1	4.1	6.6	45.0
Highest:	282.6	400.2	284.7	104.1	61.7
Mean:	39.6	40.8	70.6	69.7	53.4
Median:	8.3	10.9	28.0	84.0	53.4

## 12.5 Manhattan

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	
2002	0	0	81	81
2003	0	0	55	55
2004	0	0	4	4
2005	0	0	4	4
2006	0	0	7	7
Total	0	0	151	151

Percentages:

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

	2002	2003	2004	2005	2006
Lowest:	3.4	3.1	26.6	21.5	6.3
Highest:	278.8	159.4	70.1	95.9	45.3
Mean:	47.5	20.7	43.5	66.2	32.2
Median:	24.9	15.6	38.8	73.7	35.2

## Appendix: Cornell Crop Codes

Crop codes are used in the Cornell Nutrient Analyses Laboratory.

Crop Code	Crop Description
ALG	Ornamentals adapted to pH 4.5 to 6.0
ATF	Athletic Field
BLU	Blueberries
CEM	Cemetery
COS	Corn silage
FLA	Flowering Annuals
GRA	Grapes
HRB	Herbs
IDL	Idle land
LAW	Lawn
MVG	Mixed vegetables
OTH	Other
PER	Perennials
PRK	Park
ROD	Roadside
ROS	Roses
ROU	Rough turf
RSP	Raspberries
SAG	Ornamentals adapted to pH 6.0 to 7.5
SPB	Spring flowering bulbs
STR	Strawberries
SUB	Summer flowering bulbs
TOM	Tomatoes
TRF	Tree fruits