

*The
Connecticut
Agricultural
Experiment
Station,
New Haven*

Inspection of
Commercial
Fertilizers 1989

BY LESTER HANKIN

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During 1989, 181 official samples of fertilizer were collected by inspectors of the Connecticut Department of Agriculture and examined for authenticity of guaranteed analysis that is stated on the label and compliance with State Regulations. Other fertilizer samples were tested for farmers and Station research, but our findings are not included in this Bulletin. Although all guaranteed analyses are examined, only the results for the major plant nutrients of nitrogen, phosphoric acid, and potash are presented here.

Table 1 shows individual samples from 34 manufacturers. The numbers preceding the brand name are the guaranteed analyses. For example, 10-10-10, indicates the guaranteed percentage for nitrogen (N), phosphoric acid (P_2O_5), and potash (K_2O), in that order. The actual content is then shown, with deficiencies indicated by a dash (-) following the amount found. Table 2 summarizes for each manufacturer the number of guarantees examined for each plant nutrient, the percentage of samples not meeting their guarantee, and the average percentage of guarantee found. Table 3 shows the tonnage of the various grades of mixed fertilizer sold in Connecticut. Only grades prepared by at least three manufacturers are shown; other grades are placed in the miscellaneous category. The tonnage of fertilizer material and mixed fertilizer sold in Connecticut is shown in Table 4.

Two types of variability affect fertilizer analysis and must be considered in judging deficiencies. The first is the variability among different batches of the same grade from a manufacturer. This variability can be noted in Table 1 by examining the analyses of the same grade from the same manufacturer. The second type of variability is between duplicate analyses of the same sample. The variability among duplicate analyses is shown in the statement: the mean difference between duplicates for nitrogen, phosphoric acid, and potash is about two-tenths percent.

Fertilizer samples are deemed deficient in any nutrient if the analysis is below the guarantee by more than the values established by the Association of American Feed Control Officials. Overall, 172 guarantees for nitrogen were tested and 1.8% were deficient; 169 guarantees for phosphoric acid were tested and 10.1% were deficient; and 169 guarantees for potash were tested and 18.6% were deficient. In 1988 the percentages of deficiencies for nitrogen were 13.7%, for phosphoric acid 12.8%, and for potash 18.3%. Thus the percentage of deficiencies for nitrogen and phosphoric acid decreased and remained the same for potash.

Analyses were performed by Craig Musante, Mamie Pyles, and Mary Alice DeFrancesco. Samples were collected by John Chapman, Richard Olson, and Raymond Weller under the direction of Alton VanDyke, Fertilizer Control Official and Kenneth Veit, Chief of the Marketing Division of the Department of Agriculture. Fertilizer laws are administered by the Commissioner of Agriculture.

Lester Hankin
Chief, Analytical Chemistry

Table 1--Analysis of individual samples of commercial fertilizers

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
A. H. Hoffman, Inc.						
3	10	6	Hoffman Bulb Food	3.4	12.9	6.3
3	10	6	Hoffman Bulb Food	3.2	10.6	6.0
4	3	2	Hoffman Super Manure	4.4	2.8	2.6
5	9	6	Hoffman Rose Food	5.2	7.8	4.6
7	7	7	Hoffman Flower Food	7.0	7.6	6.9
Alaska Fish Fertilizer Co.						
5	2	2	Alaska Fish Fertilizer	6.0	6.4	3.0
5	2	2	Alaska Fish Fertilizer	4.9	3.3	2.6
Burpee Garden Products Co.						
17	23	6	Burpee Vegetable Fertilizer Gran	18.7	23.5	6.5
18	11	12	Burpee Flower Fertilizer Granules	18.1	11.8	12.0
18	11	12	Burpee Fruit/Nut/Citrus Fert Gran	18.1	11.0	12.1
18	11	12	Burpee Fruit/Nut/Citrus Fert Gran	18.4	15.0	14.5
18	11	12	Burpee Shrub/Tree Ground Cover	20.1	9.9	14.2
18	11	12	Burpee Shrub/Tree Ground Cover	19.1	11.2	13.7
18	24	6	Burpee Grow Fertilizer Vegetables	18.3	23.6	6.4
18	24	6	Burpee Grow Vegetable Fertilizer	18.5	23.5	6.9
Cadwell & Jones, Inc.						
7	7	7	Cadwell & Jones Surge	8.1	17.0	7.2
10	10	10	Cadwell & Jones Mini Bulk	16.0	11.6	13.6
10	10	10	Cadwell & Jones Special Fert	10.6	6.9	5.6
12	12	18	Cadwell & Jones Specialty Fert	12.1	13.0	18.6
15	15	15	Cadwell & Jones Specialty Fert	15.4	18.5	13.0
19	3	7	Cadwell & Jones Turf Products	19.7	3.4	7.2
20	10	10	Cadwell & Jones Turf Prod w/Team	25.3	10.7	9.5
20	10	10	Super Surge Lawn Food	21.0	11.3	9.8
Chase Pitkin Home Center						
1	1	1	Chase-Pitkin Cow Manure	1.1	1.0	0.9
Chevron Chem. Co./Ortho Agric. Chem. Div.						
0	20	0	Ortho Super-Phosphate		19.8	
3	10	3	Ortho Up-Start Vit B1 Plant Starter	3.0	10.4	2.9
3	10	3	Ortho Up-Start Vit B1 Plant Starter	4.3	12.4	2.7
4	12	8	Ortho Bulb Food	5.0	13.3	6.4
5	1	1	Ortho Fish Emulsion	5.2	1.5	1.3
5	1	1	Ortho Fish Fertilizer	5.9	1.1	2.4
8	10	8	Ortho Veg Food	8.5	10.8	7.9
8	12	4	Ortho Rose Food	9.5	13.9	3.9
10	7	7	Ortho Azalea/Camellia/Rhod Food	10.9	7.5	5.6
10	8	7	Ortho Evergreen & Azalea Food	10.6	8.2	8.5
10	10	10	Ortho General Purpose Plant Food	10.0	9.8	9.3
10	12	6	Ortho Tomato Food	10.6	15.0	5.4

Table 1--Analysis of individual samples of commercial fertilizers (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
11	8	7	Ortho Flower Garden Food	14.2	8.5	7.7
12	0	0	Ortho Blood Meal	12.5		
12	6	6	Ortho Liquid Plant Food	13.1	6.4	6.5
14	7	7	Ortho Evergreen/Tree/Shrub Food	16.8	8.4	4.6-
14	7	7	Ortho Evergreen/Tree/Shrub Food	14.4	11.3	5.5-
Crop Production Services						
0	0	50	CPS			49.3
0	26	26	CPS		26.5	25.7
3.5	3.5	15.6	CPS	3.3	3.9	15.8
5	6	9	CPS Mulnite Spec Custom Tobacco Mix	5.1	6.3	10.6
5.75	5.75	6.8	Mulnite Shade Mix	5.6	6.1	6.7
18	0	31	CPS	18.9		30.6
21	0	0	CPS	22.4		
Dexol Industries						
0	18	0	Dexol Compost Maker		17.0-	
Earthgro, Inc.						
1	1	1	Country Pride Sheep Manure	1.0	1.0	0.9
1	1	1	Earth Grow Composted Cow Manure	1.2	1.1	1.0
1	1	1	Garden King Cow Manure	1.0	0.9	1.0
2	1	1	Country Pride Cow Manure	2.0	3.8	2.3
Estech, Inc.						
6	0	0	Gro-Tone Cotton Seed Meal	5.1-		
7	10	5	Gro-Tone Rose Food 30% Org N	7.1	16.1	4.1-
32	3	8	Par Ex Professional Products	35.1	2.0-	14.5
H. K. Webster Co., Inc.						
10	3	6	Blue Seal Turf Green Crabgrass Prev	10.6	4.3	3.8-
Holland Bulb Products						
9	9	6	Holland Bulb Booster	9.1	7.5-	6.1
Hy-Trous Co.						
4	12	4	Hy-Trous African Violet	4.0	9.5-	6.7
4	12	4	Hy-Trous African Violet Liq Fert	5.4	11.6	4.4
5	10	5	Hy-Trous Liq Plant Fd w/Micronutrients	6.0	10.7	5.4
5	10	5	Hy-Trous Liquid Plant Food	6.2	10.8	5.2
Hyponex Corp.						
8	4	2	Hyponex Plant Food Sticks	10.0	6.3	4.8
10	5	5	Hyponex Bug Dart Plus	12.8	6.1	5.4
International Spike, Inc.						
8	24	8	Jobe's Fert Spikes/Prize Tomatoes	10.9	25.9	8.1
8	24	8	Jobes Tomato Fertilizer Spikes	11.7	26.4	8.8
10	10	4	Jobes Plant Fd Spikes/Flow Plnts	12.3	11.6	4.7

Table 1--Analysis of individual samples of commercial fertilizers (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
10	10	4	Jobes Plant Food Spikes	11.8	11.7	4.7
10	15	15	Jobes Fert Spikes Fruit Trees	14.1	24.0	13.7-
12	16	12	Jobe's Fert Spikes Roses	14.5	16.0	11.5
13	5	7	Jobes Fert Spikes Flowering Shrubs	16.6	5.1	8.2
16	2	6	Jobes Plant Fd/Spikes/Ferns/Palms	16.8	3.3	5.7
16	8	8	Jobe's Fert Spikes/Beautiful Trees	16.7	7.9	8.3
Luster Leaf Products, Inc.						
0	0	44	Luster Leaf Rapidfeed Potash			39.9-
0	44	0	Luster Leaf Rapifeed Phosphorus		49.5	
44	0	0	Luster Leaf Rapidfeed Nitrogen	46.5		
Mahoney's Garden Center						
1	1	1	Mahoney Composted Cow Manure	1.1	1.2	0.9
Nassau Garden, Inc.						
1	1	1	Glorion Cow Manure	1.9	1.2	1.0
O. M. Scott & Sons Co.						
12	10	12	Scotts All Purpose Builder	18.1	10.0	12.9
14	22	6	Scotts Bulb Builder	16.4	25.7	7.7
15	11	11	Scott's Azalea/Camellia/Rhod	19.6	10.6	11.4
17	10	12	Scott's Citrus/Nut/Fruit Builder	17.5	11.5	14.4
17	23	6	Scott's Vegetable Builder	18.4	22.0	5.5
18	11	12	Scott's Azalea/Camellia/Rhod Blder	18.3	11.2	11.6
18	11	12	Scott's Shrub/Tree/Fruit/Citrus Blder	16.4-	14.4	15.1
18	11	12	Scott's Shrub/Tree/Fruit/Citrus Blder	18.7	11.2	11.7
18	11	12	Scotts Flower Rose Builder	18.0	12.0	15.9
18	11	12	Scotts Flower Rose Builder	18.2	10.5	12.2
Parker Fertilizer Co.						
5	10	7	Servi Star Flower Food	5.3	8.7-	7.0
6	11	8	Servi Star Rose Food	4.9-	7.8-	7.5
Peters Fertilizer Products						
5	10	5	Peters Concentrated Plant Food	5.0	10.2	5.5
5	30	15	Peters House Plant Food	5.8	32.1	16.1
5	50	17	Peters Root 'n Bloom	6.2	49.9	17.3
10	30	20	Peters Prof Blossom Booster	10.0	32.9	19.9
20	20	20	Peters Prof Soluble Plant Fd	21.4	21.4	19.0
30	10	10	Peters Orchid Fert	32.2	11.0	10.0
Plant Research Laboratories, Inc.						
1	2	1	Oxygen Plus Indoor Plant Food	1.2	2.2	0.9
1	2	1	Oxygen Plus Indoor Plant Food	1.2	2.0	1.1
1	3	2	Oxygen Plus African Violet Food	1.1	3.3	1.9
1	3	2	Oxygen Plus African Violet Food	1.2	2.9	2.0

Table 1--Analysis of individual samples of commercial fertilizers (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
1	4	2	Oxygen Plus Plant Food	1.2	3.7	2.0
4	4	4	Roger's Garden Oxygen Plus Plant Fd	3.6	4.0	5.1
Rapid-Gro Corp.						
10	8	7	Rapid Gro Conc House Plant Fd	10.2	7.9	6.9
23	19	17	Rapid Gro House Plant Food	23.7	20.3	16.0
32	10	10	Rapid Gro Conc Evergreen/Azalea Fd	33.4	10.0	9.6
Robert N. McClellan and Son, Inc.						
2	1	1	Bovung Cow Manure	2.1	1.0	1.3
Rockland Chemical Co., Inc.						
22	3	6	Rockland Weed & Feed	23.0	2.8	4.5-
22	3	6	Rockland Weed & Feed	23.1	3.9	5.0-
25	5	15	Rockland Twin-Win	28.7	5.6	9.1-
Ross Daniels, Inc.						
6	12	6	Ross Plant Food Spikes	7.9	14.8	6.0
6	12	6	Ross Plant Food Spikes Flower Plants	7.6	13.8	6.4
8	16	16	Ross Gro-Stakes Fruit/Ornam/Trees/Shrubs	8.8	25.6	17.2
10	10	10	Ross Gro-Stakes Beaut Evergreens	12.8	10.7	10.3
14	5	5	Ross Plant Food Spikes	16.7	6.0	4.6
16	10	9	Ross Gro-Stakes Beaut/Trees/Shrubs	16.6	9.9	7.1-
Schultz Co.						
10	15	10	Schultz Instant Liquid Plant Food	12.3	15.8	10.0
10	15	10	Schultz-Instant Liquid Plant Food	10.4	16.6	11.2
Sierra Chemical Co.						
14	14	14	Osmocote Vegetable/Bedding Plant Fd	14.1	15.4	13.4
17	6	10	Osmocote Plant Food	17.7	7.1	10.6
Stern's Miracle-Gro Products, Inc.						
15	30	15	Sterns Miracle-Gro	18.2	33.3	14.5
30	10	10	Sterns Miracle Soil Acidifier	30.5	11.6	12.1
30	10	10	Sterns Miracle Soil Acidifier/Plant Fd	30.1	10.8	10.9
The Espoma Co.						
0	46	0	Espoma Triple Super Phosphate		45.0	
4	3	2	Espoma Plant-Tone Lawns/Flowers/Garden	5.1	6.3	3.8
4	6	6	Espoma Garden/Tomato/Veg/Shrubs	4.1	9.3	6.4
4	10	6	Espoma Bulb-Tone	4.6	13.8	5.8
6	6	4	Espoma Rose-Tone	6.5	8.5	5.6
45	0	0	Espoma Urea	45.5		
The Terre Co. of NJ, Inc.						
20	3	10	Terre Weed 'N Feed	21.6	2.8	11.7

Table 1--Analysis of individual samples of commercial fertilizers (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
Universal Chemical Co., Inc.						
5	10	5	Electra Plant Food	5.0	13.8	4.0-
Vigoro Industries, Inc.						
0	20	0	Gro Tone Superphosphate		28.5	
0	20	0	Pro Terre Superphosphate		19.7	
5	10	10	All American Lawn & Garden Fert	5.1	9.0-	6.6-
5	10	5	Deerfield Plant Food	5.9	10.7	5.6
5	10	5	Gro Tone Plant Food	5.0	4.3-	10.1
5	10	5	Suburban Fertilizer	4.9	9.4	6.0
5	10	10	Suburban Fertilizer	9.3	17.2	12.9
5	10	5	Suburban Fertilizer	5.1	5.4-	7.3
5	10	10	Suburban Fertilizer	5.0	10.1	4.8-
6	8	6	Gro Tone Evergreen Food	6.0	11.2	6.6
6	8	6	Gro Tone Evergreen Food	6.1	3.6-	10.4
6	8	10	Gro Tone Flower & Garden Food	5.8	1.8-	12.1
6	8	6	Gro-Tone Evergreen Food 30% Org N	11.6	15.3	6.6
10	6	4	All American Lawn & Garden Fert	11.9	8.3	6.7
10	6	4	All American Lawn & Garden Fert	12.5	10.0	2.6-
10	6	4	Deerfield Lawn Food	10.1	5.5	4.8
10	6	4	Gro Tone Lawn Craft Turf Food	16.0	4.8-	9.0
10	6	4	Gro Tone Lawncraft Turf Food	11.7	5.5	6.8
10	6	4	K Mart Lawn & Garden Food	13.1	8.5	3.4-
10	6	4	K Mart Weed & Feed	13.7	5.7	3.6
10	6	4	Suburban Lawn Fertilizer	10.2	6.0	6.1
10	10	10	All American Lawn & Garden	10.1	12.8	10.5
10	10	10	All American Lawn & Garden Fert	10.1	6.6-	13.9
10	10	10	Suburban Fertilizer	10.9	11.1	6.2-
10	12	24	Par Ex Prof Products w/Escote	10.6	13.3	13.6-
12	3	34	Par Ex Prof Products	13.4	4.5	29.6-
12	4	8	Gro Tone Turf'n Tree Food 50% Org N	12.4	5.9	7.9
16	0	29	Par Ex Slow Release Fert	16.6		20.1-
16	16	16	Par Ex Professional Products	17.3	13.6-	16.0
18	3	6	Vigoro Deep Green Weed & Feed	18.4	6.3	7.9
18	3	6	Vigoro Deep Green Weed & Feed	19.5	2.9	7.9
18	3	6	Vigoro Deep Green Weed & Feed	24.1	3.6	7.3
18	3	6	Vigoro Deep Green Weed & Feed	18.2	4.8	6.6
21	0	22	Par Ex Prof Prod Slow Rel Fert	20.9		19.8-
21	2	6	Par Ex Slow Release Fertilizer	21.8	6.5	1.3-
21	3	16	Par Ex Slow Release Fert w/IBDU	22.0	1.6-	20.4-
21	26	6	Par Ex	25.4	24.9-	1.3-
21	26	6	Par Ex Prof Products	22.7	26.7	9.1
24	0	20	Par Ex Slow Release Fert w/IBDU	24.2		25.6
27	3	3	All American Lawn Food	28.2	4.3	4.1

Table 1--Analysis of individual samples of commercial fertilizers (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
30	3	10	Win Premium Fert with IBDU	30.3	3.6	10.9
30	4	6	Gro Tone Crabgrass Prev/Lawn Fert	30.6	8.2	5.4
30	4	6	Gro Tone Lawn Fertilizer	30.7	6.5	6.4
30	4	6	Gro Tone Weed Contro/Lawn Fert	30.4	8.8	2.3
30	4	6	Gro Tone Weed Contro/Lawn Fert	31.0	5.0	10.4
31	0	0	Par Ex Prof Products	31.2		
31	3	11	Par Ex	30.5	6.2	9.2
31	3	11	Par Ex Slow Release Fert	31.2	4.0	10.5
W. R. Grace & Co.						
12	36	14	Peters African Violet	13.9	36.8	14.8
15	30	15	Peters Plant Food Houseplant	16.2	32.8	16.5
20	20	20	Peters General Purpose Plant Food	21.9	20.6	18.7

Table 2--Summary for each manufacturer of number of claims for individual plant nutrients, percentage of claims not meeting guarantee, and average percentage of guarantee for each nutrient.

Company	Number samples	Number of claims			% Not meeting claim			Average % of claim		
		N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
A. H. Hoffman	5	5	5	5	0	20	20	107	105	102
Alaska Fish Fert.	2	2	2	2	0	0	0	109	243	140
Burpee Garden Prod.	8	8	8	8	0	13	0	104	104	111
Cadwell & Jones	8	8	8	8	0	13	25	115	100	90
Chase Pitkin	1	1	1	1	0	0	0	110	100	90
Chevron Chemical	17	16	16	15	0	0	33	106	116	105
Crop Production Serv.	7	5	4	6	0	0	0	80	101	102
Dexol	1	0	1	0	-	100	-	-	94	-
Earthgro	4	4	4	4	0	0	0	105	170	130
Estech	3	3	2	2	33	50	50	99	114	132
H.K.Webster	1	1	1	1	0	0	100	106	143	63
Holland Bulb Proucts	1	1	1	1	0	100	0	101	83	102
Hy-Trous	4	4	4	4	0	25	0	120	98	122
Hyponex	2	2	2	2	0	0	0	127	140	174
International Spike	9	9	9	9	0	0	11	125	120	106
Luster Leaf	3	1	1	1	0	0	100	106	113	91
Mahoney's	1	1	1	1	0	0	0	110	120	90
Nassau Garden	1	1	1	1	0	0	0	190	120	100
O. M. Scott & Sons	10	10	10	10	10	0	0	111	106	111
Parker Fertilizer	2	2	2	2	50	100	0	94	79	97
Peters Fert. Products	6	6	6	6	0	0	0	109	106	102
Plant Research	6	6	6	6	0	0	0	113	102	104
Rapid-Gro	3	3	3	3	0	0	0	103	102	96
Rob't. N. McClellan	1	1	1	1	0	0	0	105	100	130
Rockland Chemical	3	3	3	3	0	0	100	108	112	73
Ross Daniels	6	6	6	6	0	0	17	120	121	98
Schultz	2	2	2	2	0	0	0	114	108	106
Sierra Chemical	2	2	2	2	0	0	0	102	114	101
Stern's Miracle-Gro	3	3	3	3	0	0	0	108	112	109
The Espoma Co.	6	5	5	4	0	0	0	111	149	133
The Terre Co.	1	1	1	1	0	0	0	108	93	117
Universal Chemical	1	1	1	1	0	0	100	100	138	80
Vigoro Industries	48	46	44	45	0	23	33	114	123	111
W. R. Grace	3	3	3	3	0	0	33	111	105	103
Totals	181	172	169	169						

Table 3--Distribution of mixed fertilizers sold in Connecticut July 1, 1988-June 30, 1989

Grade	Tons	Grade	Tons
00-15-30	28.0	18-05-03	115.6
00-25-25	9.5	18-05-09	23.3
03-12-06	3.0	19-04-04	265.4
04-10-10	6.0	19-04-06	166.8
05-01-01	1.1	19-19-19	185.5
05-10-05	1096.3	10-03-03	118.1
05-10-10	662.3	20-05-25	67.0
05-15-05	5.2	20-08-08	55.4
07-12-12	20.1	20-10-10	27.0
08-10-08	16.7	20-10-20	21.0
08-12-04	61.9	20-20-20	84.7
08-18-10	10.8	22-03-03	61.5
09-05-03	16.0	22-03-05	11.2
09-09-09	196.5	23-04-04	105.2
09-17-09	101.1	23-19-17	2.5
10-06-04	1124.7	24-12-18	445.0
10-07-07	12.0	25-03-03	345.7
10-08-10	364.0	25-03-05	107.1
10-10-10	2417.9	25-03-09	18.5
10-12-06	6.3	25-04-08	17.2
10-16-20	21.7	25-05-10	146.9
10-18-10	91.5	25-05-15	28.5
10-20-10	274.3	26-03-03	54.8
10-20-20	366.7	26-04-06	136.4
10-20-30	18.0	27-03-03	922.8
11-10-10	3.2	28-02-03	369.9
11-23-10	22.0	30-00-20	162.0
12-04-08	76.0	30-03-03	61.9
12-08-20	8.0	30-03-10	207.7
12-09-09	2.7	30-04-04	441.5
12-10-10	9.9	30-10-10	26.9
12-15-15	72.0	32-03-03	46.0
12-30-12	13.0	32-04-04	78.1
13-25-12	84.2		
14-07-07	13.9	TOTAL	13769.7
15-08-12	499.9	MISCELLANEOUS	14902.1
15-10-10	120.0	GRAND TOTAL	28671.8
15-15-15	664.5		
15-30-15	97.3		
16-08-08	152.8		
18-03-03	2.3		
18-03-12	27.5		
18-04-10	41.8		

Table 4--Tonnage of fertilizer material and mixed fertilizers sold in Connecticut July 1, 1988-
June 30, 1989

Commodity	Tons	Commodity	Tons
CHEMICAL NITROGEN		SECONDARY AND MICRONUTRIENTS	
Ammonium nitrate	101.9	Aluminum sulfate	0.5
Ammonium polysulfide	1.5	Borax (boron as borax)	26.2
Ammonium sulfate	18.0	Ferrous sulfate	0.1
Calcium nitrate	249.1	Iron chelate	0.2
Nitric acid	12.0	Magnesia (mag oxide)	1.0
Nitrogen solution-28%	0.7	Magnesium sulfate	90.0
Nitrogen solution-32%	120.0	Manganese sulfate	0.5
Sodium nitrate	17.2	Sulfur	1.8
Urea	1104.6	Zinc sulfate	0.4
Nitrogen-not identified	2.3	Sec/micronutrients	5.8
TOTAL	1627.3	TOTAL	126.5
PHOSPHATES		LIME PRODUCTS	
Diammonium phosphate	179.0	Liming materials	8.1
Monoammonium phosphate	116.0	TOTAL	8.1
Bone meal, steamed	37.3	UNIDENTIFIED PRODUCTS	
Bone, precipitated	14.4	Single nutrients	423.3
Calcium metaphosphate	64.0	TOTAL	423.3
Phosphoric acid	5.2	TOTAL COMMODITIES 9749.4	
Superphosphate, normal	41.8	TOTAL FERTILIZERS 28671.8	
Superphosphate, triple	51.6	GRAND TOTAL 38419.2	
Phosphates, not ident	10.0		
TOTAL	519.3		
POTASH			
Muriate of potash-60%	208.4		
Sulfate of potash-magnesium	92.0		
Potassium nitrate	16.0		
Potassium-sodium nitrate	10.0		
Potassium sulfate	1.0		
Potash, not identified	0.3		
TOTAL	327.7		
NATURAL ORGANICS			
Blood, dried	185.1		
Compost	2066.1		
Cottonseed meal	122.0		
Manure	4096.7		
Sewage sludge, activated	244.2		
Sewage sludge, other	0.1		
Natural organics/not ident	1.0		
TOTAL	6715.2		



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