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Inspection of
Commercial
Fertilizers 1987

BY LESTER HANKIN

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founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504.

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During 1987, 347 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. Although all guaranteed analyses are examined, only the results for the major plant nutrients of nitrogen, phosphoric acid, and potash are presented. Other fertilizers tested for farmers and Station research are not included in this Bulletin.

Table 1 shows individual samples from 38 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 variability among different batches of the same grade from a manufacturer. This variability can be noted in Table 1 by examining analyses of the same grade from the same manufacturer. The second is variability between duplicate analyses of the same sample. The mean difference between duplicate analyses 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, 325 guarantees for nitrogen were tested and 13.5% were deficient; 313 guarantees for phosphoric acid were tested and 20.4% were deficient; and 313 guarantees for potash were tested and 13.7% were deficient. In 1986 the deficiencies for nitrogen were 4.5%, for phosphoric acid 9.1%, and for potash 8.8%. Thus the percentage of deficiencies increased for all nutrients in 1987.

Analyses were performed by Helen Kocaba, Mamie Pyles, Mary Alice DeFrancesco, Mary Withrow, and Deborah Behnfield. Samples were collected by John Chapman, Richard Macsuga, Richard Olson, and Alton VanDyke under the direction of Kenneth Veit. 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						
4	4	2	Hoffman Super Manure	4.6	4.1	2.7
Agrico Chemical						
10	6	4	Agrico	10.6	5.7	7.5
27			Agrico	27.4		
46			Agrico Urea	46.0		
Agway						
	10	40	Blend Rite		11.8	42.0
	45		Blend Rite Triple Phosphate		45.1	
1	1	1	Agway Composted Cow Manure	0.7	0.7	1.0
1	1	1	Agway Composted Cow Manure	0.9	0.8	1.0
5	10	10	Blend Rite	5.3	11.8	9.7
5	10	10	Agway	5.0	9.4	9.4
5	10	5	Agway	6.4	8.5-	8.4
9	23	23	Agway Bulk	9.1	23.7	28.7
10	10	10	Blend Rite	10.2	9.2-	6.8-
10	10	10	Blend Rite	12.4	11.2	10.1
10	20	10	Nutri Bond Ammoniated Fert	7.9-	21.1	14.0
10	20	20	Blend Rite	10.6	24.2	21.0
10	6	4	Agway	10.1	6.1	5.3
10	9	36	Agway	10.3	11.4	36.7
13	10	32	Agway	14.2	10.4	33.3
13	15	29	Agway Bulk	10.5-	10.9-	36.0
14	11	30	Agway Bulk	18.4	13.9	30.3
15	12	26	Agway Bulk	13.8-	11.4	32.9
15	15	15	Blend Rite	15.2	16.6	14.5
15	15	15	Nutri-Bond Ammoniated	15.1	17.0	17.6
15	15	15	Agway	15.3	15.9	17.6
15	8	12	Agway Blend Rite	15.7	9.2	11.0-
18	18	18	Agway Bulk	18.3	15.2-	24.7
18	18	18	Agway Bulk	21.7	8.6-	27.0
18	18	18	Agway Bulk	18.7	15.4-	20.9
18	18	18	Agway Bulk	18.9	19.4	21.7
20	11	22	Agway	17.5-	4.2-	33.3
20	14	21	Agway Bulk	21.2	5.8-	25.7
21	13	20	Agway Bulk	19.2-	10.9-	28.5
21	5	7	Agway	22.5	5.7	7.7
21	5	7	Greenlawn Fert w/Oftanol	23.4	6.1	8.9
22	11	18	Agway Bulk	18.4-	12.0	25.5
22	12	18	Agway Bulk	22.9	6.4-	14.6-
22	6	8	Green Lawn	22.2	6.5	11.0
22	6	8	Agway	20.9-	6.4	8.3
23	14	17	Agway	23.4	16.6	20.9
23	15	15	Agway	21.0-	9.9-	24.7

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
24	9	18	Agway Bulk	26.5	7.7-	33.0
24	9	18	Agway Bulk	27.7	4.5-	20.1
26	13	12	Agway Bulk	29.1	10.7-	14.8
27	12	12	Agway	23.6-	15.4	20.4
30		20	Agway	31.0		19.3
31	6	11	Agway	32.4	4.4-	12.8
32			Agway Liquid N	33.4		
32	8	8	Agway Bulk	32.2	9.3	13.8
33	3	10	Agway Bulk	33.3	2.6	16.3
33	3	11	Agway Bulk	39.9	1.2-	7.8-
36			Agway Bulk	38.7		
43	2		Agway	45.4	2.0	
46			Urea	46.2		
Anderson Organic						
2	1	2	Tilleez	2.2	2.2	2.4
Atlas Fish Fertilizer						
5	1	1	Atlas Fish Emulsion	5.5	1.7	1.9
5	2	2	Atlas Fish Emulsion	5.5	2.0	1.9
Burpee						
15	20	12	Burpee Fert/Tomatoes	15.1	21.5	12.5
17	23	6	Burpee Grow/Vegetables	17.6	22.6	6.1
18	12	12	Burpee Grow/Flowers	18.1	11.7	13.4
18	4	7	Burpee Grow Azal/Cam/Rhod	19.3	4.4	7.6
20	3	8	Burpee Grow/Shrbs/Trs/Evrg	20.3	3.3	8.1
Cadwell & Jones						
	20		C & J		20.2	
	46		C & J Triple Phosphate		46.0	
4.54	5.68	7.40	C & J Custom HHK-Hadley	4.8	5.8	6.4-
4.59	5.62	6.20	C & J Custom BVHK-Hadley	5.0	5.3	5.0-
4.59	5.62	6.20	C & J Custom BVHK Clark	4.8	5.0	5.7
4.59	6.94	5.22	C & J Custom HPK-Clark	4.6	4.4-	2.9-
4.59	6.94	5.22	C & J Custom HPK E Windsor	4.8	7.0	4.8
4.64	4.41	6.27	C & J Custom LPVHK-Hadley	5.2	4.0	5.9
4.65	5.69	5.29	C & J Custom BHK-Hadley	5.0	5.2	4.8
4.65	5.69	5.29	C & J Custom BHK Clark	5.1	5.3	5.3
4.65	5.69	5.29	C & J Custom BHK Clark	4.8	5.7	5.7
4.65	5.69	5.29	C & J Custom BHK E Windsor	4.8	6.0	5.5
4.72	7.11	4.18	C & J Custom BHP-A Clark	4.9	6.7	4.2
4.72	7.11	4.18	C & J Custom BHPA E Windsor	5.0	9.0	4.1
4.72	7.11	4.18	C & J Custom BHPA E Windsor	5.0	6.9	3.7
4.73	7.16	3.19	C & J Custom HPLK Clark	4.9	8.0	2.9
4.76	3.27	5.42	C & J Custom LLPHK-Hadley	5.1	3.3	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
4.81	5.85	4.26	C & J Custom BA Clark	5.0	5.6	4.0
4.81	5.85	4.26	C & J Custom BA Clark	6.7	7.7	4.4
4.81	5.85	4.26	C & J Custom BA E Windsor	5.0	6.0	3.8
4.81	5.85	4.29	C & J Custom BA-Hadley	4.8	4.9-	3.9
4.84	4.52	4.28	C & J Custom BLP-A-Hadley	4.3	3.9	4.5
4.87	5.93	3.29	C & J Custom BLK-A-Hadley	5.2	5.7	3.1
4.87	5.93	3.29	C & J Custom BLKA Clark	5.1	6.0	4.5
4.87	5.93	3.29	C & J Custom BLK-A	6.7	5.8	3.1
4.88	2.38	4.32	C & J Custom ULLP-Hadley	4.9	2.2	4.7
4.94	3.37	4.37	C & J Custom LLP-A-Hadley	5.1	3.1	4.1
5	10	10	C & J Specialty Fert	5.1	8.0-	6.7-
5	10	10	C & J	7.5	15.6	12.5
5	10	5	C & J Surge	6.3	11.2	4.6
5.00	3.41	3.38	C & J Custom LLPLK-A-Hadley	5.6	3.0	3.0
5.4	3.8	3.7	C & J Cust LLPLK-LCA-Hadley	4.3	3.4	3.7
7	7	7	C & J Surge High Prot Pl Fd	7.1	8.0	8.5
7	7	7	C & J Surge High Prot Pl Fd	10.4	5.4-	8.2
10	10	10	C & J Specialty Fert	10.2	10.2	13.8
10	10	10	C & J	10.1	8.9-	13.7
10	2	8	C & J	10.7	2.1	7.6
10	20	10	C & J Spec Fert w/Tupersan	10.5	19.9	11.7
10	20	20	C & J	10.2	21.0	17.6-
10	6	4	C & J	10.5	6.3	6.7
10	6	4	C & J 50% SCU	12.9	7.7	5.5
10	6	4	C & J Hi-Organic Fert	11.0	5.9	3.4-
10	6	4	C & J Surge Turf Prod	7.6-	4.6-	5.2
15	3	5	C & J Turf Prod	15.2	2.6	4.3-
15	15	15	C & J	18.4	16.7	13.9-
15	15	15	C & J	13.0-	9.9-	19.3
15	30	15	C & J w/Tupersan	13.8-	23.2-	22.6
20	10	10	C & J	21.7	11.8	9.0-
20	10	10	C & J Super Surge	21.0	10.3	9.8
20	10	10	C & J Super Surge	20.7	7.3-	12.7
20	10	10	C & J Spec Sup Surge w/Ben	20.0	5.3-	12.1
21	10	21	C & J Soluble-FF-MG	21.0	10.6	23.4
23	6	9	C & J	23.6	6.1	10.9
23	6	9	C & J Lawn, Garden Fert	7.8-	4.4-	7.4-
25	3	9	C & J	25.2	4.0	8.8
25	9	10	C & J Specialty Fert	25.7	10.2	20.7
25	9	18	C & J	25.8	9.1	20.7
28	7	14	C & J	28.6	7.7	14.5
35	9	9	C & J Specialty Fert	39.0	10.5	12.0
45			C & J Urea	46.1		
45			C & J Urea	45.0		

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand			Nutrients found, %		
			N	P ₂ O ₅	K ₂ O
Chem Lawn					
		Chem Lawn	2.0	1.2	0.5
Chevron Chemical					
	20	Ortho Super Phosphate		20.7	
3	10	3 Ortho Up-Start E-1	3.2	10.9	2.9
5	1	1 Ortho Fish Emulsion	5.1	1.4	1.6
5	15	5 Ortho Up-Start Plnt Starter	5.0	15.9	5.6
6	18	6 Ortho Tomato & Vegetable	6.2	18.4	6.0
8	10	8 Ortho Vegetable Food	8.1	11.7	8.6
8	12	4 Ortho Rose Food	8.1	14.1	3.7
10	10	10 Ortho General Purp Plant Fd	11.0	10.1	10.0
10	12	6 Ortho Tomato Food	10.5	12.8	6.3
10	7	7 Ortho Azal Camell Rhod Fd	10.2	7.5	6.7
11	8	7 Ortho Flower Garden Food	11.5	8.2	7.4
12		Ortho Bone Meal	12.5		
Clinton Nursery Products					
12	6	6 New Era Plnt Fd Spks	12.4	7.4	7.0
4	10	10 New Era Flow Plnt Fd Liq	4.9	11.3	12.6
6	12	6 New Era Plnt Fd Spks	6.7	14.7	7.5
8	8	8 New Era Plnt Fd Liq	9.0	8.3	9.2
Crop Production Services					
		16 CPS Muriate of Potash			57.0
	15	30 CPS		15.4	29.7
	20	CPS		19.9	
	20	20 CPS		23.2	20.1
5	10	10 CPS	5.1	7.8-	8.8-
5	10	10 CPS	3.9-	9.4	9.5
5	10	10 CPS	5.8	8.3-	11.2
5	10	10 CPS	7.1	9.3	12.1
5.2		14.7 CPS w/Magnesium, S--Ca	5.2		15.8
10	6	4 Village Green	9.1-	5.2-	5.2
10	6	4 CPS 50% Organic	10.2	4.3-	4.5
10	6	4 CPS Village Green	10.2	5.5	5.4
10	6	4 CPS/Agrico Village Green	10.2	6.1	6.3
10	8	10 CPS	7.7-	10.1	14.5
10	10	10 CPS	8.8-	10.1	11.5
10	10	10 Agrico	10.1	7.9-	12.8
10	10	10 CPS	10.2	9.8	11.1
10	10	10 CPS	10.3	9.5	12.3
10	10	10 CPS	10.1	12.9	10.1
10	10	10 CPS	12.1	9.5	9.2-
10	10	10 CPS	11.4	8.7-	17.5
10	10	10 CPS	13.2	10.6	8.9-

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
10	20	20	CPS	10.7	19.2	19.4
10	20	20	CPS	14.5	25.8	12.6-
10	8	10	CPS	12.2	9.8	9.4
13	13	32	CPS - Bulk	17.4	9.4-	27.4-
14.7	14.7	29.5	CPS	12.3-	9.8-	33.3
14.7	14.7	29.5	CPS - Bulk	15.7	8.3-	25.1-
15	12	30	CPS	16.7	12.1	21.8-
15	12	30	CPS	15.1	11.8	30.7
15	15	15	CPS	15.2	16.1	14.2
15	15	15	CPS	15.5	10.5-	17.4
15	8	12	CPS	16.0	8.1	12.9
16	32		CPS w/Borate	18.3	24.0-	
17	5	34	CPS - Bulk	13.7-	5.0	37.8
18	11	17	CPS Village Green Spec Fert	18.1	13.7	17.8
18	11	27	CPS	18.5	10.6	28.4
18	18	18	CPS	15.9-	18.4	18.6
23	9	23	CPS	25.8	8.4	24.2
24	12	18	CPS	25.8	11.4	14.1-
24	6	10	Village Green Lawn Mix	25.2	6.4	11.5
24	8	21	CPS	24.6	9.0	27.0
26	10	17	CPS Bulk	21.5-	5.7-	24.9
28	4	12	CPS Village Green Spec Fert	28.1	4.0	13.8
46			Urea	46.2		
46			Urea	46.3		
46			Agrico	46.4		
Dexol Industries						
	18		Dexol Compost Maker		16.9-	
Earth Gro						
1	1	1	Earth-Gro Cow Manure	0.7	0.7	0.7
1	1	1	Earth-Gro Sheep Manure	0.6	0.5	0.5
2	1	1	Earth-Gro Dehyd Cow Manure	2.0	1.6	1.4
2	1	1	Earth-Gro Sheep Manure Dehy	2.1	2.5	1.6
4	2	2	Earth-Gro Manure Supreme	2.0-	2.1	1.3-
4	4	2	Earth-Gro Manure Supreme	2.2-	1.7-	1.7
Espoma						
4	3	2	Espoma Plant Tone	4.6	4.7	2.3
4	6	4	Espoma Holly Tone	4.2	8.4	5.3
4	6	6	Espoma Garden Tone	4.8	7.4	6.4
4	7	10	Espoma Tomato Food	5.5	12.0	7.6-
4	12		Espoma Bone Meal	5.2	20.8	
6	6	4	Espoma Rose Tone	6.1	7.1	6.6
9	5	4	Espoma Tree Tone	9.5	5.1	5.5

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
Estech						
	20		Gro-Tone		23.6	
	20	20	Harvest King		14.6-	29.5
4	10	10	Vigoro Azal/Cam/Rhod	5.7	9.6	13.0
5	10	10	Suburban	5.2	9.6	9.8
5	10	10	Suburban	6.8	11.9	13.4
5	10	5	Gro-Tone	6.7	6.2-	8.9
5	10	5	Perk Up Plant Food	3.8-	6.8-	4.8
5	10	5	Gro-Tone 50% Organic Nit	5.3	6.5-	17.1
7	10	5	Gro-Tone Rose Food	6.6	9.8	7.1
10	10	10	Suburban	8.1-	10.3	11.1
10	10	10	Vigoro All Amer Lawn/Garden	10.5	10.7	11.0
10	20	10	Harvest King	10.1	18.0-	10.1
10	6	4	Deerfield	9.1-	5.8	4.1
10	6	4	Perk Up Lawn Food	10.5	8.6	4.0
10	6	4	Vigoro All Amer Lawn/Garden	10.1	7.0	5.2
10	6	4	Perk Up	10.2	7.7	5.5
12	3	34	Par-Ex with IBDU	6.0-	2.8	35.0
12	4	8	Gro-Tone	14.9	7.7	8.0
16		24	Par-Ex	8.5-		25.5
17	20	6	Par-Ex	18.3	19.9	4.9-
18	5	10	Wood Ace	19.1	7.3	7.9-
20		16	Par-Ex with IBDU	10.4-		25.9
20	3	10	Terre Lawn Spur	24.5	6.5	8.5-
21	3	16	Par-Ex With IBDU	15.5	4.9	17.6
21	4	10	Wood Ace	25.7	6.0	8.5-
23	3	6	Deep Green	20.6-	4.3	7.1
23	5	5	Gro-Tone Lawn Food	23.3	4.8	5.8
24		18	Par-Ex	24.3		12.8-
24		20	Par-Ex	15.6-		27.1
25	3	5	Terre Turf Spur II	25.4	4.5	6.3
29		10	Estech	30.5		11.6
29	3	10	Par-Ex With IBDU	30.7	3.4	9.2-
29	3	10	Par-Ex with IBDU	29.6	5.5	12.6
30	4	6	Gro-Tone	25.1-	5.5	7.6
30	4	6	Gro-Tone	39.8	2.1-	5.8
32	3	7	Par-Ex	32.8	3.6	7.5
32	3	8	Par-Ex	33.8	4.4	7.1-
Greensweep Products						
	15		Greensweep Weed & Feed	15.3		
	20	3	Greensweep Lawn Food	11.0	3.2	3.7
Hy-Trous						
	5	10	Hy-Trous Liquid Plant Food	5.0	10.1	5.0

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
Hyponex						
1	1	1	Fertilife Comp Cow Manure	0.7	0.7	0.6
1	1	1	Vita Hume Comp Sheep Manure	0.6	0.9	0.6
10	5	5	Hyponex Bug Dart & Pant Fd	12.8	6.7	6.0
IB Chemical						
31			IBDU Fine	31.1		
International Spike						
8	24	8	Jobe's Tomato & Garden Veg	12.5	25.4	8.4
10	10	4	Jobe's Plant Food Spikes	10.1	10.6	5.5
10	5	5	Jobe's for Young Trees	13.2	5.3	4.5
12	16	12	Jobe's for Prize Roses	14.6	20.6	12.2
12	8	6	Jobe's Spikes for Roses	15.1	20.0	6.8
13	4	5	Jobe's Plant Food Spikes	13.6	7.1	6.6
13	5	7	Jobe's Flowering Shrubs	14.9	6.5	9.8
14	4	4	Jobe's Evergreen Shrubs	16.2	4.5	5.9
14	8	4	Jobe's Flowering Shrubs	16.2	8.8	5.6
15	3	3	Jobe's Evergreen Trees	16.5	4.3	4.4
15	5	5	Jobe's Fert Spks/Young Tree	15.6	5.6	5.7
16	2	6	Jobe's Lush Ferns/Palms	16.1	6.4	6.6
Jiffy Products of America						
7	40	6	Mag Amp Plant Food	7.0	45.1	5.8
Lebanon Chemical						
5	10	10	Lebanon	5.1	11.6	10.1
9	17	9	Green Start	10.3	17.6	12.4
10	10	10	Lebanon	10.2	10.4	11.6
10	6	4	Greens Keeper	10.3	6.4	4.3
12	24	12	Turf Master Lawn Food	13.1	25.6	11.3
19	4	4	Crabicide Green	20.6	3.9	4.9
19	4	6	Country Club w/Crbgrss Prv	20.0	5.1	5.9
20	8	8	Greens Keeper	21.8	8.5	8.2
30	4	4	Green Power	31.6	3.1-	3.0-
McClellan and Son						
2	1	2	Bovung Dehyd Cow Manure	1.8	1.7	1.4-
Nassau Garden						
1	1	1	Glorion Cow Manure	0.5	0.5	0.4
Nitrochem						
34			Bull's Eye	34.6		

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
O. M. Scott & Sons						
17	23	6	Starter Fert	17.4	25.9	6.7
27	3	3	Turf Builder Plus 2	27.5	2.8	3.3
28	3	3	Turf Builder	28.1	3.4	3.7
Old Fox Chemical						
7.23	7.17	7.16	Old Fox Side Dressing	4.8-	4.9-	3.1-
7.23	7.17	7.16	Old Fox Side Dressing	5.0-	5.6-	6.6
7.23	7.17	7.16	Old Fox Side Dressing	6.5-	5.9-	7.6
7.23	7.17	7.16	Old Fox Side Dressing	5.4-	3.7-	5.1-
7.23	7.17	7.16	Old Fox Side Dressing	5.4-	5.3-	4.1-
	15	30	Old Fox Fert		14.7	30.4
4	16	20	Old Fox Fert	4.9	13.8-	17.7-
5	10	10	Old Fox	5.2	7.0-	10.7
5	10	5	Garden Food	4.2-	7.1-	6.9
6	3	6	Old Fox Prof Tobacco	6.9	4.9	7.0
10	10	10	Old Fox	12.1	11.8	9.7
10	6	4	Old Fox Turf Food	12.4	4.7-	4.3
10	8	10	Old Fox Fert	10.9	7.0-	12.7
15	15	15	Old Fox Fert with Borax	17.5	14.4	14.1
15	8	12	Old Fox Fert	15.5	8.2	11.5
16		30	Old Fox Prof Turf/Tee/Frwy	18.4		33.5
18	3	6	Liquid Green & Tee	15.2-	4.0	5.4-
18	3	6	Liquid Green & Tee	15.5-	4.1	5.4-
18	46		Old Fox Fert	19.1	46.5	
19	19	19	Old Fox Fert	19.5	19.2	21.7
22		22	Old Fox Prof Turf Food	27.8		27.9
22	4	14	Old Fox Fert Turf Food	22.0	3.8	22.7
24	12	18	Old Fox	24.5	10.6-	18.8
30	3	10	Old Fox Prof Turf Food	30.2	3.4	23.3
30	3	10	Old Fox Power Gran	30.0	3.8	12.6
45			Old Fox	46.7		
Plant Research Laboratories						
1	2	1	Oxygen Plus Plant Food	1.1	2.1	1.1
1	3	2	Oxygen Plus Afr Violet Food	1.1	3.1	2.2
1	4	2	Oxygen Plus House Plnt Food	1.1	3.8	2.0
4	4	4	Oxygen Plus Plant Food	5.2	3.8	5.6
Rapid-Gro						
18	21	21	Rapid Gro Tomato/Veg Food	18.3	21.0	22.7
23	19	17	Rapid Gro Plant Food	15.4-	19.5	18.2
32	10	10	Rapid Gro Evrgrn Azal Fd	31.7	11.8	10.7

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
Rockland Chemical						
22	3	6	Rockland Weed/Feed	22.7	3.2	4.0-
32	5	7	Rockland	32.7	5	7
Ross Daniels						
5	25	15	Ross Tree/Shrub Winterizer	6.5	26.2	16.1
6	12	6	Ross Plant Food Spikes	6.8	11.6	9.2
8	16	16	Ross Gro-Stks Fruit/Orn Trs	9.3	18.8	17.2
9	46	15	Ross Cart Fruit/Nuts/Tom	9.4	49.2	17.4
14	5	5	Ross Plant Fd Spks Fol Plnt	16.0	8.2	5.5
15	25	10	Ross Cart Roses/Flwrng Shrb	15.1	28.0	10.5
16	10	9	Ross Gro-Stakes for Trees	16.6	10.6	9.1
Schultz						
10	15	10	Schultz-Inst Liq Plnt Fd	10.0	14.4	9.9
Sierra Chemical						
14	14	14	Osmocote Tomato/Veg/Bedding	14.3	13.5	13.7
17	6	10	Osmocote Plant Food	17.2	6.7	12.0
18	6	12	Osmocote Outdr/Indr Plnt Fd	18.2	8.0	12.7
20	10	5	Osmocote Tree/Shrub Plntng	20.8	10.5	5.8
Stern's Nurseries						
15	30	15	Stern's Miracle Gro Plnt Fd	15.4	31.7	15.9
20	20	20	Stern's Miracle Gro Patio	24.0	20.2	21.3
30	10	10	Sterns Miracid	30.6	11.2	11.9
Sudbury Lawn & Garden Products						
		44	Sudbury Potash			54.3
	44		Sudbury Phosphorus			46.4
Valagra						
		60	Valagra Potash			59.7
9	8	8	Custom Blend	7.8-	7.6	7.9
9	8	8	Custom Blend	8.2-	8.3	8.6
9	8	8	Custom Blend	8.3-	4.2-	6.9-
9	8	8	Custom Blend	11.6	5.7-	10.3
9	8	8	Custom Blend	8.4	5.7-	6.9-
9	8	8	Custom Blend	7.3-	5.1-	8.2
10	10	10	Valagra	11.9	9.0-	9.4
10	6	4	Valagra	11.4	7.4	3.6
11	52		Valagra MAP	11.6	52.4	
15	15	15	Valagra	17.4	18.6	14.3
15	8	12	Valagra	15.2	7.7	14.6
19	19	19	Valagra	19.0	19.3	19.3
45			Valagra Urea	45.6		

TABLE 1--ANALYSIS OF INDIVIDUAL SAMPLES OF COMMERCIAL FERTILIZERS (Continued)

Manufacturer, guarantee, brand				Nutrients found, %		
				N	P ₂ O ₅	K ₂ O
Vigoro Industries						
10	6	4	Turf Food	9.6	4.9-	4.5
14	12	14	Woodace Nursery Fert	14.7	11.7	16.9
W. R. Grace & Co.						
5	10	5	Peters Plnt Fd	5.9	10.7	5.7
10	30	20	Peters Prof Sol Plnt Fd	11.0	30.4	21.5
12	36	14	Peters Plnt Fd Afr Violet	12.6	37.2	15.2
15	30	15	Peters Prof Houseplant	17.9	30.9	18.9
20	20	20	Peters Prof	23.0	20.0	20.8
30	10	10	Peters Plnt Fd Orchid	40.0	10.9	13.0

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	1	1	1	1	0	0	0	115	103	135
Agrico Chemical	3	3	1	1	0	0	0	103	95	188
Agway	50	48	46	45	19	35	9	101	94	121
Anderson Organic	1	1	1	1	0	0	0	110	220	120
Atlas Fish Fert.	2	2	2	2	0	0	0	110	135	143
Burpee	5	5	5	5	0	0	0	103	105	106
Cadwell & Jones	61	59	59	57	7	19	19	105	99	106
Chem Lawn	1	0	0	0	-	-	-	-	-	-
Chevron Chemical	12	11	11	10	0	0	0	104	110	108
Clinton Nursery	4	4	4	4	0	0	0	113	116	121
Crop Prod. Serv.	47	43	42	42	8	11	8	105	96	115
Dexol Industries	1	0	1	0	-	100	-	-	94	-
Earth Gro	6	6	6	6	33	17	17	73	113	95
Espoma	7	7	7	6	0	0	17	116	141	122
Estech	37	35	32	36	26	19	19	100	118	119
Greensweep Prod.	2	2	1	1	0	0	0	113	107	123
Hy-Trous	1	1	1	1	0	0	0	100	101	100
Hyponex	3	3	3	3	0	0	0	86	98	80
IB Chemical	1	1	0	0	0	-	-	100	-	-
International Sp.	12	12	12	12	0	0	0	117	150	123
Jiffy Products	1	1	1	1	0	0	0	100	113	97
Lebanon Chemical	9	9	9	9	0	11	11	107	105	106
McClellan & Son	1	1	1	1	0	0	100	90	170	70
Nassau Garden	1	1	1	1	0	0	0	50	40	40
Nitrochem	1	1	0	0	0	-	-	102	-	-
C.M. Scott & Sons	3	3	3	3	0	0	0	102	106	115
Old Fox Chemical	26	25	23	24	32	48	25	100	97	108
Plant Research	4	4	4	4	0	0	0	115	100	115
Rapid-Cro	3	3	3	3	0	0	0	107	107	107
Rockland Chemical	2	2	2	2	0	0	50	103	103	83
Ross Daniels	7	7	7	7	0	0	0	112	115	114
Schultz	1	1	1	1	0	0	0	100	96	99
Sierra Chemical	4	4	4	4	0	0	0	102	112	110
Stern's Nurseries	3	3	3	3	0	0	0	100	106	111
Sudbury Products	2	0	1	1	-	0	0	-	106	123
Valagra	14	13	12	12	31	42	17	102	91	101
Vigoro Industries	2	2	2	2	0	50	0	101	90	117
W.F. Grace	6	6	6	6	0	0	0	117	104	115
Totals	347	325	313	313						

TABLE 3--DISTRUBUTION OF MIXED FERTILIZERS SOLD IN CONNECTICUT
 JULY 1, 1986-June 30, 1987

Grade	Tons	Grade	Tons	Grade	Tons
00-00-00	298	12-10-10	983	25-03-03	210
00-15-30	42	15-00-00	27	25-03-05	106
00-20-20	13	15-08-12	459	25-03-09	15
04-06-04	663	15-10-10	1282	27-03-03	905
05-01-01	1	15-15-15	782	32-04-04	41
05-10-05	834	16-04-08	101	32-05-07	21
05-10-10	816	16-08-08	63	TOTAL	16561
06-12-06	4	18-04-10	39	MISCELLANEOUS	25402
07-07-07	27	18-05-09	13		
10-05-05	28	19-19-19	191	GRAND TOTAL	41963
10-06-04	1749	20-00-10	25		
10-10-10	4587	20-03-03	86		
10-15-15	152	20-05-10	327		
10-20-10	409	20-10-10	558		
10-20-15	90	20-10-20	14		
10-20-20	366	20-20-20	68		
12-04-08	106	22-00-22	52		
12-06-06	1	24-04-12	87		

TABLE 4--TONNAGE OF FERTILIZER MATERIAL AND MIXED FERTILIZERS SOLD IN CONNECTICUT JULY 1, 1986-JUNE 30, 1987

Commodity	Tons	Commodity	Tons
CHEMICAL NITROGEN		NATURAL ORGANICS	
Ammonia	5026.3	Blood, dried	3.6
Ammonium nitrate	198.5	Cottonseed meal	69.3
Ammonium sulfate	6	Manure, cow, composted	18
Calcium nitrate	82.4	Manure, cattle, dried	2659
Nitrogen solutions	228	Manure, poultry, dried	8.8
Other nitrogen mater.	100.2	Sewage sludge, activated	10
Potassium nitrate	1	TOTAL	2768.7
Sodium nitrate	5.3		
Urea	3492.2	MULTINUTRIENT	
Ureaform	1	Ammonium phosphate/nitrate	823.7
Urea-sulfur coated	9	Ammonium sulfate/nitrate	1
TOTAL	9149.9	Multinutrients	60.3
		TOTAL	885
PHOSPHATES		SECONDARY & MICRONUTRIENTS	
Bone meal, steamed	49.2	Aluminum sulfate	2
Superphosphate	116.2	Borax	27.6
Superphosphate, 18%	21	Ferrous sulfate	3.1
Superphosphate, 20%	37	Iron, chelated	1.1
Superphosphate, 45%	334	Land plaster	59.5
Superphosphate, 46%	16	Magnesium oxide	1.5
Other phosphates	347	Magnesium sulfate	1.1
TOTAL	820.4	Sulfur	3
		Zinc sulfate	0.4
POTASH		Miscellaneous	17
Muriate of potash	2329.3	TOTAL	116.3
Potassium nitrate	49		
Potassium sulfate	47.3		
Sulfate-potassium/mag.	0.5		
		TOTAL COMMODITIES	16166.4
		TOTAL COMMERCIAL FERTILIZERS	41963
		GRAND TOTAL	58129.4