

- Analysis of
- *Commercial Fertilizers*
- Sold during 1959-60

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DIGEST

This is the 58th annual report of the operation of the Texas fertilizer law and covers the period from September 1, 1959 to August 31, 1960.

Fertilizers and fertilizer materials sold during the fertilizer year beginning July 1, 1959, as reported currently by invoices forwarded by guarantors, amounted to 708,036 tons, which was about 7 percent less than the tonnage sold during the preceding year. Sales of mixed goods decreased 1 percent while sales of fertilizer materials increased 12 percent. Grades of the 1-2-1 ratio accounted for 63 percent, and the 1-1-1 ratio accounted for 9 percent of the total 283,460 tons of mixed goods sold. Mixed goods made up 40 percent of the total tonnage sold. Nitrogen materials accounted for 57 percent, superphosphates for 12 percent and ammonium phosphates for 25 percent of the total of 424,576 tons of materials sold.

Analyses are given of 2,610 official samples of fertilizers. Valuations found on analyses are compared with the analyses guaranteed by the registrants.

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Analysis of Commercial Fertilizers Sold during 1959-60

J. F. FUDGE, State Chemist

THIS IS THE 58TH ANNUAL FERTILIZER BULLETIN published in compliance with the Texas fertilizer law, which requires that the State Chemist shall issue at least one bulletin annually setting forth the analyses of fertilizers made under the provisions of the fertilizer law, the operations of the law and other information pertaining to the sale of fertilizer in Texas.

SOME REQUIREMENTS OF THE LAW

The law governing the sale of commercial fertilizers in Texas is found in Chapter Twelve of Title Sixteen of Vernon's Revised Criminal Statutes, 1925, and in Chapter Five of Title Four of Vernon's Texas Civil Statutes, 1925. A summary of some important requirements of the law follows. For further requirements, penalties, definitions and other detailed information, reference should be made to the full text of the law, which will be furnished by the State Chemist on request.

Materials Covered

All mixed fertilizers, fertilizer materials and all other substances which have, or are claimed to have, a beneficial effect on the soil or to promote the growth of crops, come under the law, with the exception of lime, limestone, marl, agricultural gypsum, unground manure, stockpen manure, barnyard manure and the excrement of any domestic animal in case that said manure or excrement has not been dried or manipulated or otherwise treated, or is not claimed to have a value of more than \$4 a ton.

Registration

Before a fertilizer is offered for sale in Texas, it must be registered with the State Chemist of Texas, College Station, Texas. All registrations expire on August 31 of each year, and new applications for registration must be submitted for each year. Application blanks for registration are furnished by the State Chemist, on request. The application blank must be filled out and sent to the State Chemist together with a copy of the printed bag or tag to be used. Each bag or tag must meet the requirements of the fertilizer law. Wording on the application for registration must agree exactly with the wording on the printed bag or tag, and no change can be made in the wording on the bag or tag after it has been registered. Such change requires a new registration.

The application for registration must be accompanied by a Product Sheet on which is listed all of the materials used in the fertilizers, including the carrier or conditioner, and these materials must be

used in all batches. A change may be made only if it meets the requirements of the law and the State Chemist is notified. The application for registration also must be accompanied by all printed material to be used in connection with advertising and marketing the product.

No brand name identical with or so similar to a brand name previously registered by another manufacturer, as to lead to confusion, can be accepted. No name which is misleading as to the ingredients of the fertilizer can be accepted. The grade of fertilizers should be part of the name of the product; for example, *Jupiter Brand Superphosphate 0-20-0* or *Mars Brand 6-12-6 Fertilizer*.

Labels

The law requires the following information to be printed on the bag or on a tag attached to the bag:

- Net weight of content of the bag.
- Name of fertilizer in full.
- Name and address of manufacturer, manipulator or guarantor.
- Guaranteed analysis (in order given below):
 - Nitrogen, percent
 - Available phosphoric acid, percent
 - Potash, percent

Nitrogen refers to the total nitrogen (N) present.

Available phosphoric acid (P_2O_5) must be guaranteed in all mixed fertilizers and in all fertilizer materials, with the following exceptions. Total phosphoric acid may be guaranteed in bone meal, tankage or other similar products, but where this is done, no guarantee of available phosphoric acid can be used. If it is desired to claim available phosphoric acid only, the guarantee must take the form set forth above.

Potash (K_2O) refers to potash soluble in distilled water. No other guarantee or term can be used.

No advertising of any kind shall be printed on the label.

Inspection Fees

To finance the inspection of fertilizers and the collection and analysis of official samples of fertilizer, experiments on the value of fertilizers and for certain other related purposes, the law imposes an inspection fee of 25 cents per ton on all fertilizers sold or offered for sale in Texas. This fertilizer inspection fee must be paid by the guarantor on the basis of and must accompany a sworn quarterly statement of sales, due in the office of the State Chemist on the first day of September, December, March and June. If the ton-

nage report is not filed and the payment of inspection fees is not made within 20 days after the date due, a collection fee amounting to 10 percent of the amount due must be charged against the guarantor.

Bulk Sales

Fertilizer in bulk for manufacturing purposes can be shipped only to the factory of a manufacturer who has registered fertilizers for sale in Texas.

Fertilizer in bulk cannot be sold to dealers for resale or distribution.

Registered fertilizers may be sold in bulk by manufacturers to persons, individuals or firms for their own use on their own lands, but not for resale or distribution, under rules prescribed by the State Chemist. The inspection fee must be paid on all such sales. All authorizations to sell fertilizer in bulk expire August 31 of each year.

Report of Sales

The guarantor must mail a report of each sale or shipment of fertilizer within or into Texas to the State Chemist within 3 days after such sale or shipment. The report must be made by sending to the State Chemist a copy of the invoice used in billing the customer. The invoices must be numbered, and the same number cannot be used twice during the same year. Reports of sales in bulk to manufacturers must be marked "for manufacturing purposes." Reports of sales in bulk to individuals for use on their own land must be marked "bulk sale to consumer."

GRADES APPROVED FOR 1960-61

The *grade* of a mixed fertilizer is stated in numbers representing the guaranteed analyses as percentages of nitrogen, available phosphoric acid and water-soluble potash. For example, a grade of 6-12-6 means that the fertilizer is guaranteed by the guarantor to contain 6 percent nitrogen, 12 percent available phosphoric acid and 6 percent water-soluble potash. The term *grade* also may refer to the percentage of a primary component in a fertilizer material, as in superphosphate, 0-20-0. Wherever practicable, the *grade* of a fertilizer or fertilizer material should be included as part of the full name of the fertilizer required on the label.

Fertilizers also may be described by a numerical statement expressing the relation among the primary components in its simplest form, called a *ratio*. For example, a 6-12-6 fertilizer contains 1 part of nitrogen to 2 parts of available phosphoric acid and to 1 part of potash. Consequently, this fertilizer has a 1-2-1 ratio; other grades having this ratio include 10-20-10 and 12-24-12.

The grades of mixed farm fertilizers sold in Texas have been limited in number for more than 30 years. Limitation and standardization of grades reduce the cost of manufacturing and handling,

thereby permitting the fertilizer to be sold to the consumer at a lower cost. They also assist the farmer in becoming familiar with the different grades of fertilizer, enable him to decide more readily on the proper grade to be used and enable agricultural specialists to make definite and simple recommendations. The ratios and minimum grades of mixed farm fertilizers to be approved in Texas during a given year are decided by the Texas Fertilizer Committee after a public hearing at which manufacturers and others interested may present recommendations. This public hearing is held annually in cooperation with fertilizer control officials, agricultural specialists and manufacturers of Texas, Louisiana, Arkansas, Oklahoma and New Mexico. The list of approved ratios and minimum grades is published in the annual fertilizer bulletin and also may be obtained on request to the State Chemist.

Following the annual public hearings on ratios and grades held at Galveston, Texas, on July 29, 1960, the Texas Fertilizer Committee made no change in the ratio and grade list.

The approved ratios and minimum grades during the year starting September 1, 1960, are:

Ratio	Minimum grade	Ratio	Minimum grade
0-1-1	0-14-14	1-2-2	5-10-10
0-2-1	0-16-8	1-2-3	4-8-12
1-1-0	10-10-0	1-4-4	3-12-12
1-1-1	8-8-8	2-1-0	14-7-0
1-2-0	7-14-0	2-1-1	12-6-6
1-2-1	6-12-6	2-2-1	10-10-5

Grades of mixed goods of the same ratio as those above, but of higher guaranteed analyses, were approved. For example, a 12-24-12 is approved as a higher analysis of the 1-2-1 ratio.

All fertilizer materials were approved. All products containing both nitrogen and available phosphoric acid, such as 4-16-0 (ammoniated superphosphate), 16-20-0, 11-48-0 and 13-39-0 (ammoniated phosphate), also were approved as materials.

The annual hearing for 1961 will be held at the Galvez Hotel, Galveston, Texas, on July 21, 1961.

TEXAS FERTILIZER COMMITTEE

The Texas Fertilizer Committee, composed of agricultural subject-matter specialists of the Agricultural and Mechanical College of Texas and representatives of the U. S. Department of Agriculture, is appointed by the Director of the Texas Agricultural Experiment Station to advise and assist the State Chemist in the discharge of certain of his duties, particularly with respect to ratios and grades of mixed fertilizer to be approved for registration. This committee is composed of the following:

- J. F. Fudge, State Chemist, Chairman
- W. F. Bennett, Extension Soil Chemist

H. T. Blackhurst, Professor of Horticulture
 F. R. Brison, Acting Head, Department of Horticulture
 A. G. Caldwell, Associate Professor of Agronomy
 E. L. Fisher, Associate Professor of Agronomy
 B. G. Hancock, Extension Horticulturist
 O. J. Moss, Agricultural Conservation and Stabilization, U. S. Department of Agriculture
 Donald R. Paterson, Associate Horticulturist
 Clyde C. Singletary, Extension Horticulturist
 Ben R. Spears, Extension Agronomist
 J. B. Storey, Assistant Professor of Horticulture
 W. O. Trogdon, Head, Department of Agronomy

Hi-Quality	Oleander	Steamboat
Hi-Yield	Organo	Stim-U-Plant
Hoffman's	Orgro	Sul-Po-Mag
Hou-Actinite	Org U Phos	Sunset
Houston	Ortho	Sunshine
Landscape	Ortho-Gro	Super 20
Hu-Mi-Sol	Ovenc	Supergro
Humusol	Ozark	Superior
Hydro-Pak	Pan Handle Gold	SurGreen
Hy-Gro	Park Lane	Swfgro
Hyponex	Pasturgro	Swfkick
International	P-Con-Gro	Tacco
Interstate	P. D. Q.	Take-Hold
Ionate	Pelleform	T. C. C.
Kimbell	Perma-Gro	Tencor
Ko-K-O	Phillips 66	Texana
K-W	Plantabbs	Texas Farm
Latex	Plantation	Supply
Leeloam	Plant-Chem	Texas Liquid
Life	Plant-Gro	Texas Longhorn
Linck's	Port	Texgreen
Lion	Pro-Gro	Tex-Hi
Liqua-food	Pronto	Thrive
Liqua Vita	Pro Turf	Tide Green
Liquidry	Rainbow	Top Crop
Liquikik	Rais-Mor	Topper
Lone Star	Ramshorn	Trebo-Phos
Longhorn	Ranch Home	Tri-40
Lonfosco	Ra-Pid-Gro	Triple Eight
Ma-Der-Gro	Red Star	Tri-Una-Sol
M-C	Red Steer	Turf-Gro
M C C	Reliance	Turf Magic
Mathieson	Reuter's Special	Ura-Green
Maverick	Robot Gardner	Uramite
Mello-Green	Ruhm's	Valley-Gro
M. G.	RX-15	V-C
Mid-South	Sack-O-Mulch	VC Prolific
Mid-West	Scott's	Velva Gro
Milorganite	SD	Versene
Min-Hu-Nite	Sequestrene	Versenol
Minor L	Shur-Crop	Vertagreen
Mission	Shur-Green	Vigoro
Mr. N.	Smido	Vita-L
Mule	Sod-Gro	Vita-Pure
Na-Churs	Soil Booster	Vitogro
Naturizer	Soil Life	Vitrea
Nichols	Soil Nu	Wacco
Nitra-Phos	Soiltrate	Water Feed
Nitro-Form	SoilTrix	Watson's
Nitra N	Sowesco	Texas Turf
N-Rich-R	Soylaid	Weber-King
Nu-Green	Spensol	Wesco
Nurish	S S S	Wil-gro
Nutrio-Sol	Sta-Green	Wolfe
Nuturf	Staffel's	Wonder-Gro
Old Black Joe	Start-Rite	Woodgrow
Old Dutch Mill	Stauffer's	Wyatt's A-M

BRANDS AND TRADE-MARKS

The law requires the State Chemist to publish annually a list of brands or trade-marks registered to him. The following brands and trade-marks registered with the State Chemist during 1959-60:

Caprock	Ferti-Star
C F & I	Floran
Champion	Flororganic
Chemanure	Foli-Gro
Chik-a-nure	Four Leaf
Chloro-Spray	F T E
Cinagro	Garden Mark
Coastal	G B-100
Columbus	G. & O.
Co-op	Golden Harvest
Creel	Golden Nugget
Cross Country	Goldenrod
C. S. C.	Golden Vigoro
Danbury	Gold Medal
Davco	Goldthwaite's
Davey	Goodpasture
Dawn	Grace
Dennison's	Gran-U-Pels
De-Pester	Green Dot
Desert Green	Green Glo
Dickey's	Green Light
Dixie	Green Pride
Dixsol	Green Thumb
Dow	Green Up
Dri-Flo	Green Valley
DuPont	Greenz
Dutch	Gro-Brite
E F	Gro-Green
Es-Min-El	Gro-Mo
Fafco	GroMor
Farm and Ranch	Gro-Rite
Fehmel	Groso
Ferti-Foliage	Gro-Stuf
Ferti-Ground	Gro-Tex
Fertigrow	Heart
Fertilaid	Heller-Gro
Ferti-Lome	HiD
Ferti-Mulch	Hill's

INSPECTION FEES COLLECTED

Fertilizer inspection fees equivalent to 721,824 tons of fertilizer were collected for fertilizer sold during the Texas fiscal year from September 1, 1959 through August 31, 1960. This tonnage is compared in Table I with tonnages on which fees were collected in previous periods.

All fees collected are used for the administration of the Texas fertilizer law and for research on various factors which influence the agricultural value of commercial fertilizers.

TABLE 1. FERTILIZER INSPECTION FEES COLLECTED, CALCULATED ON A TONNAGE-BASIS, DURING DIFFERENT PERIODS (SEPTEMBER 1 OF ONE YEAR THROUGH AUGUST 31 OF THE NEXT YEAR)

Year	Tonnage equivalent reported sold
1905-06	13,500
1910-18 (8-year average)	48,861
1918-23 (5-year average)	44,770
1923-28 (5-year average)	112,927
1928-33 (5-year average)	90,962
1933-38 (5-year average)	66,255
1938-43 (5-year average)	125,678
1943-48 (5-year average)	314,515
1948-53 (5-year average)	563,493
1953-54	543,518
1954-55	603,828
1955-56	566,339
1956-57	626,545
1957-58	623,825
1958-59	676,210
FEES COLLECTED	
1959-60	721,824

A detailed financial statement concerning receipts and expenditures of fertilizer inspection and collection fees is given in Table 2.

TONNAGE SALES

The tonnages of mixed fertilizers and fertilizer materials sold in different areas of Texas, Figure 1, during the year, and in the State during the fall

and spring seasons, are shown in Table 3. The data were compiled from current reports of sales of fertilizers required by law to be sent to the State Chemist by fertilizer guarantors within 3 days of date of sale. Detailed Reports of sales by county are given in Progress Reports 2124 (fall sales) and 2150 (spring sales).

Total sales for the year were 7 percent higher than during the preceding year. Sales of mixed goods were 1 percent lower while sales of materials were 12 percent higher than last year. Mixed goods accounted for 40 percent of the total tonnage, as compared with 43 percent a year ago. Sales of the 1-2-1 ratio accounted for 63 percent, and of the 1-1-1 ratio 9 percent, of the total tonnage of mixed goods. Combined sales of these two ratios thus accounted for 72 percent of the total tonnage of mixed goods. Sales of 6-12-6 increased 9 percent. Sales of 10-20-10 increased 6 percent, but this grade accounted for 39 percent of the tonnage of the 1-2-1 ratio and 39 percent of the tonnage of all mixed goods. East Texas used 39 percent of the mixed goods sold in the State and half of the goods of the 1-2-1 ratio. East Texas, the Gulf Coast and the North Central areas accounted for 73 percent of the mixed goods. Mixed goods accounted for 76 percent of the total sold in East Texas, 47 percent of the total sold in the North Central area and only 12 percent of the total sold in the State of Texas.

TABLE 2. RECEIPTS AND EXPENDITURES OF FERTILIZER INSPECTION AND COLLECTION FEES FOR THE YEAR ENDING AUGUST 31, 1960

RECEIPTS				
	Balance September 1, 1959			\$ 52,121.70
	Inspection fees			180,456.01
	Collection fees			143.36
	Total available			\$232,721.07
	Less balance August 31, 1960			73,708.21
	Total as shown below			\$159,012.86
EXPENDITURES				
Item	Salaries and wages	Other operating expenses	Equipment	Buildings and other improvements
Administration of law				
State Chemist—main office	\$ 52,669.89	\$21,957.55	\$ 429.27	\$
Statistical services		3,234.00		
Feed Control Service		1,730.61		
Total administration of law	52,669.89	26,922.16	429.27	
Research to assist in administration of law				
Administration		1,833.28		
Agricultural Information Office	86.40	2,205.75	302.74	
Agromony	39,307.72	3,546.47	386.59	
State Chemist	2,400.00			
Horticulture				194.00
Substation No. 9, Trans-Pecos	365.25	2,659.80	1,880.90	
Substation No. 12, Chillicothe	65.63	1,133.59	178.60	
Substation No. 15, Weslaco	12,312.00	1,388.74	2,917.47	36.38
S. W. Great Plains Field Station, Bushland	1,541.49	1,208.90	61.22	
F. I. C. A. matching money		2,518.63		
Workmen's Compensation Insurance		459.99		
Total research to assist in administration of law	56,078.49	16,955.15	5,727.52	230.38
Total expenditures	\$108,748.38	\$43,877.31	\$6,156.79	\$230.38

The total tonnage of materials sold during the year was 50 percent higher than the total of mixed materials. Fall sales of materials were 78 percent higher than spring sales 38 percent higher than those of mixed materials. East Texas used 39 percent of the total ammonium nitrate used in the State, the Gulf Coast 39 percent of the ammonium sulfate. West Texas used 49 percent of the total nitrogen materials, 63 percent of anhydrous ammonia and 63 percent of the total tonnage of nitrogen solutions. Sales of all nitrogen materials increased about 14 percent, with significant increases in the tonnages of anhydrous ammonia, nitrogen solutions and urea.

The tonnages of the primary fertilizer components sold during the year, calculated from current reports of sales and from guaranteed analyses, are shown in Table 4. Sales of nitrogen, available phosphoric acid and potash were about twice as great during the spring as during the fall season. Mixed goods provided 16 percent of the total nitrogen, 53 percent of the available phosphoric acid and 96 percent of the potash used in the State. The total tonnage of nitrogen was 90 percent higher than the total tonnage of available phosphoric acid. The tonnage of nitrogen increased by 15 percent and of available phosphoric acid by 5 percent over a year.

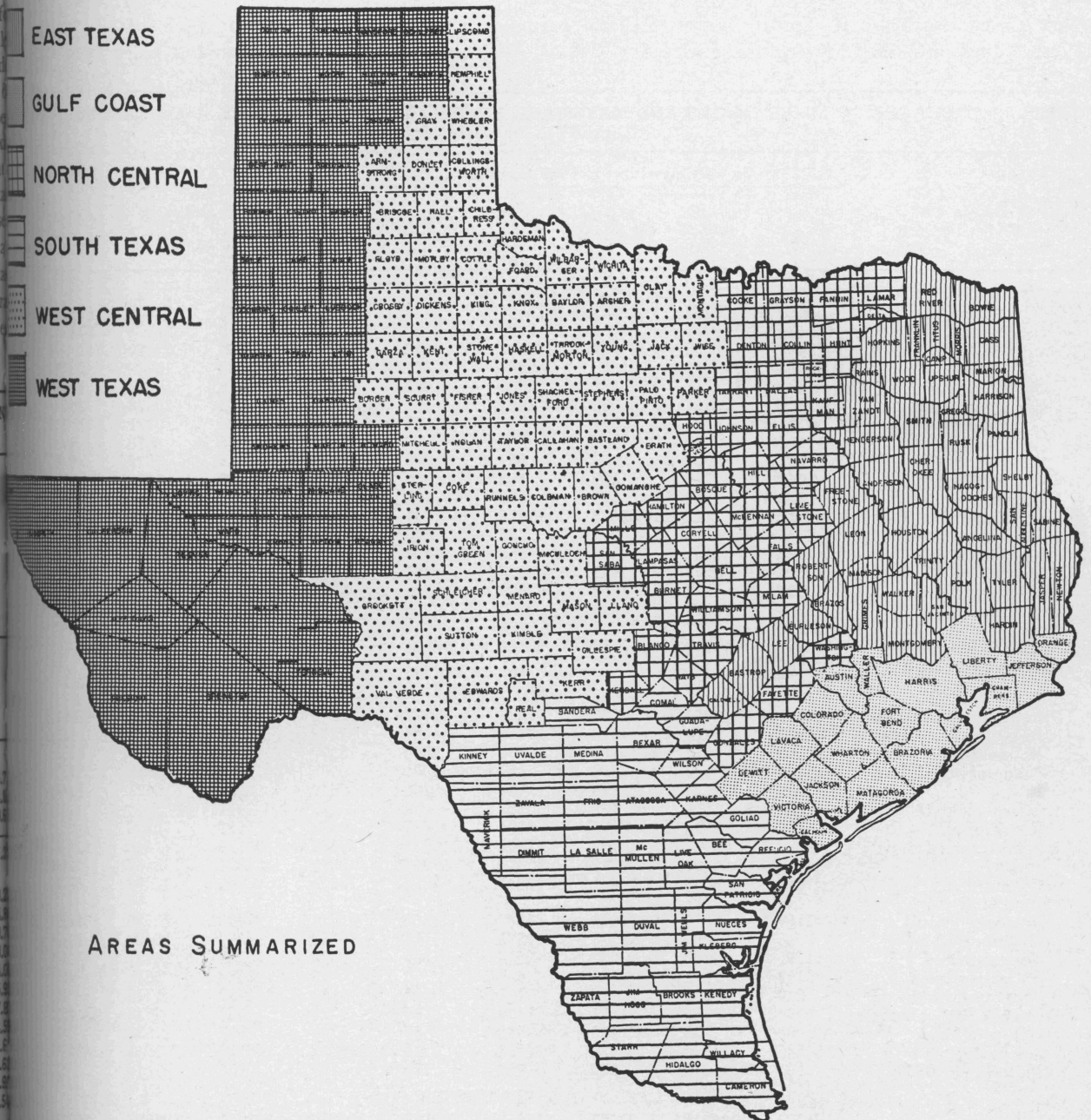


Figure 1

ago. Anhydrous ammonia accounted for 64 percent of the materials nitrogen and 54 percent of the total nitrogen used in the State.

Geographic regions of Texas differed widely in the amount of primary components used. East Texas used 38 percent of the nitrogen and 40 percent of the available phosphoric acid in mixed goods. West Texas used 50 percent of the total nitrogen, 58 percent of the materials nitrogen and 34 percent of the materials phosphoric acid used in the State. East Texas and the Gulf Coast used 24 percent of the nitrogen, 44 percent of the available phosphoric acid and 65 percent of the potash used in the State. The ratio of total nitrogen to available phosphoric acid to potash was 1.7:2.0:1 in East Texas, 4.0:3.2:1 in the Gulf Coast, 9.2:5.1:1 in South Texas, 39.2:8.4:1 in West Texas and 6.8:3.5:1 for the entire State.

VALUATION PER TON

The Texas fertilizer law requires that a valuation be made to all purchasers of fertilizer if the valuation found on analysis is 4 percent or more below the valuation guaranteed, and that if the valuation is 10 percent or more below the valuation guaranteed the fertilizer shall be considered as being adulterated. A calculation of the valuation guaranteed and the valuation found by analysis must, therefore, be made. The valuation also sums up the valuation of the primary components (nitrogen, available phosphoric acid and potash) shown in the guarantee or found in the analysis, into a single figure which is convenient for comparative purposes.

The calculation of the total valuation requires a specific valuation for each of the three primary components. The following prices per unit

TABLE 3. TONNAGES OF MIXED GOODS AND MATERIALS SOLD IN DIFFERENT REGIONS AND SEASONS, AS REPORTED CURRENTLY BY GUARANTORS

Grade	By regions July 1, 1959 to June 30, 1960						Entire State		
	East Texas	Gulf Coast	North Central	South Texas	West Central	West Texas	July 1 to Dec. 31	Jan. 1 to June 30	Full year Actual 1959
MIXED GOODS									
1-2-1 ratio (total)	88096	29353	28243	17534	9773	4785	59935	118065	178000
6-12-6	15424	4631	3376	6838	2136	115	5019	27501	32520
10-20-10	70336	9885	17247	5533	4817	2771	46359	64230	110589
12-24-12	882	13846	1058	2468	881	1665	5439	15357	20796
Others	1454	1211	6562	2695	1939	234	3118	10977	14095
1-1-1 ratio (total)	11856	10041	1088	1067	404	425	4008	20875	24881
8-8-8	9192	1471	331	141	61	83	1158	10121	11279
12-12-12	1402	2561	187	269	37	24	805	3675	4480
Others	1262	6009	570	657	306	318	2045	7077	9122
O-P-K grades	648	263	138	162	181	1729	709	2413	3122
1-1-0 ratio	376	429	690	4287	179	1322	1742	5542	7284
1-2-0 ratio	1567	1147	3474	1979	541	150	4335	4523	8858
1-2-2 ratio	4135	1817	316	99	323	56	1088	5613	6701
1-4-4 ratio	1324	2101	100	555	402	34	1034	3482	4516
2-2-1 ratio	522	2756	1971	4022	820	370	3289	7172	10461
10-20-5 grade	509	627	1003	2426	793	3765	2546	6577	9123
Turf and garden	1359	2514	4628	2590	750	3203	3633	11237	14870
Other grades	606	2591	945	3278	514	7711	1558	14086	15644
Total mixed goods	110781	53862	42588	37999	14681	23549	83877	199583	283460
Relative to 1959	89	102	92	111	117	142	99	99	99
MATERIALS									
Nitrogen materials (total)	17661	40304	18846	37326	10077	117512	80422	161306	241728
Anhydrous ammonia	2738	4531	2510	10159	4484	87272	39937	71757	111694
Ammonium sulfate	2280	25127	7902	13730	2889	13322	19531	45719	65250
Ammonium nitrate	11470	970	7656	3140	1903	3985	9512	19612	29124
Urea	102	8196	579	2095	165	2618	3184	10571	13755
Other solid N	621	918	172	3903	9	323	2811	3135	5946
N solutions	450	562	27	4301	627	9992	5447	10512	15959
N-P materials (total)	5028	30353	17733	17658	10232	26603	36174	71444	107618
16-20-0	4373	25608	16272	13609	7949	12678	30324	50166	80490
Others	655	4745	1461	4049	2283	13925	5850	21278	27128
Phosphorus materials (total)	5107	5610	9430	6983	2463	21414	21468	29539	51007
Ordinary (0-20-0)	3916	1430	5173	3533	1126	10892	10667	15402	26069
Concentrated	1191	4180	4257	3450	1337	10522	10801	14137	24938
Rock phosphates	6257	7324	242	409	0	5	8363	5875	14238
Potash materials	210	539	113	181	232	1186	732	1729	2461
Manures and composts	184	684	1891	1136	180	726	1487	3315	4802
Other products	66	139	185	558	35	1740	887	1835	2722
Total materials	34522	84954	48439	64254	23219	169187	149533	275043	424576
Relative to 1959	105	118	109	129	123	107	108	115	112
ALL FERTILIZERS									
All fertilizers	145303	138815	91027	102253	37900	192736	233410	474626	708036
Relative to 1959	92	108	100	124	121	111	104	108	107

4. TONNAGE OF PRIMARY FERTILIZER COMPONENTS SOLD JULY 1, 1959, TO JUNE 30, 1960, AS REPORTED CURRENTLY BY GUARANTORS AND CALCULATED FROM GUARANTEED ANALYSIS

	Nitrogen			Available phosphoric acid			Potash		
	Mixed	Materials	All	Mixed	Materials	All	Mixed	Materials	All
FALL SEASON, July 1, to December 31, 1959									
Texas	3570	2017	5587	7040	1309	8349	3570	69	3639
Coast	1338	3649	4987	2294	3048	5342	1266	139	1405
Central	1471	3694	5165	2739	4321	7060	1162	37	1199
Texas	1437	5064	6501	2272	3309	5581	893	48	941
Central	214	2218	2432	374	1483	1857	164	15	179
Texas	202	32650	32852	351	1989	2340	178	47	225
State	8232	49292	57524	15070	15459	30529	7233	355	7588
relative to 1958	116	100	101	102	113	107	100	152	101
SPRING SEASON, January 1 to June 30, 1960									
Texas	6474	5628	12102	11946	655	12601	6671	58	6729
Coast	4240	14537	18777	7118	6179	13297	4311	188	4499
Central	2311	5696	8807	3982	2492	6474	1848	43	1891
Texas	2438	12981	15419	3521	3086	6607	1391	49	1440
Central	1048	4506	5554	1997	1777	3774	1008	43	1051
Texas	1806	50929	52735	3357	12699	16056	1587	373	1960
State	18317	94277	112594	31921	26888	58809	16816	754	17570
relative to 1959	100	131	122	98	108	103	100	71	98
FULL FERTILIZER YEAR, July 1, 1959 to June 30, 1960									
Texas	10044	7645	17689	18986	1964	20950	10241	127	10368
Coast	5578	18186	23764	9412	9227	18639	5577	327	5904
Central	3782	9390	13172	6721	6813	13534	3010	80	3090
Texas	3875	18045	21920	5793	6395	12188	2284	97	2381
Central	1262	6724	7986	2371	3260	5631	1172	58	1230
Texas	2008	83579	85587	3708	14688	18396	1765	420	2185
State	26549	143569	170118	46991	42347	89338	24049	1109	25158
relative to 1958-59	102	117	115	100	110	105	100	85	99

of a ton, or 20 pounds) were used for this valuation in 1959-60 and also will be used in 1961:

Prices per unit

Nitrogen	\$3.00
Available phosphoric acid.....	2.00
Total phosphoric acid in tankage and bone meal.....	.70
Total phosphoric acid in rock phosphate.....	.50
Soluble potash.....	1.00

The valuation is calculated by multiplying the percentage of each primary component by the valuation per unit, and adding the products. Following is an example of the calculation of the valuation of a ton of a 6-12-6 fertilizer:

Nitrogen	6	×	\$3.00	=	\$18.00
Available phosphoric acid.....	12	×	\$2.00	=	\$24.00
Soluble potash.....	6	×	\$1.00	=	\$ 6.00
Guaranteed valuation.....				=	\$48.00

TABLE 5. AVERAGE ANALYSES OF PRINCIPAL GRADES, WITH SUPPLEMENTARY STATISTICAL DATA

	Number of samples	Nitrogen			Available phosphoric acid			Potash			VF/VG(3) %	Selling price, (S. P.) \$	SP/VG
		Mean, %	S.D.(1) %	C.V.(2)	Mean, %	S.D., %	C.V.	Mean, %	S.D., %	C.V.			
	141	8.11	.72	8.9	9.13	1.31	14.3	8.50	.76	8.9	106.4	55.81	1.163
	10	9.74	.37	3.8	11.61	1.68	14.5	9.95	.59	5.9	104.0	72.22	1.204
	42	12.01	.78	6.5	13.16	1.54	11.7	12.42	1.15	9.3	103.8	74.25	1.031
	54	13.03	.39	3.0	13.59	.83	6.1	13.81	.69	5.0	102.7	84.39	1.082
	89	10.06	.67	6.6	20.48	.98	4.8				101.6	74.11	1.059
	7	5.37	.21	3.9	11.74	1.78	15.1	5.56	.63	11.3	112.9	59.77	1.494
	314	6.46	.61	9.4	12.53	1.05	8.4	6.55	.86	13.1	106.2	52.04	1.084
	777	9.94	.55	5.5	20.60	1.14	5.5	10.44	.82	7.9	101.8	75.25	1.063
	119	12.00	.47	3.9	24.46	1.12	4.6	12.56	.92	7.3	101.5	93.63	.975
	30	5.66	.77	13.7	11.65	1.46	12.5	10.25	1.28	12.5	112.3	48.46	1.077
	26	9.95	.53	5.3	20.73	.76	3.7	5.43	.37	6.8	102.3	78.56	1.047
Ammonium nitrate	49	33.62	.42	1.2							100.4	82.92	.825
Ammonium sulfate	35	21.11	.14	0.6							100.5	52.43	.832
	412	15.75	.83	5.3	20.85	1.44	6.9				101.1	87.55	.995
	39	13.01	.60	4.6	39.38	1.49	3.8				100.7	106.90	.914
Superphosphate	50				20.55	.66	3.2				102.7	37.94	.949
Superphosphate	40				46.29	.81	1.7				100.6	75.65	.822

S.D.: standard deviation (2) C.V.: coefficient of variation or standard deviation as percent of mean. VF and VG: valuation found or guaranteed.

ANALYSES GUARANTEED AND FOUND

The analyses of 2,579 individual official samples collected by inspectors and analyzed in the laboratory of the State Chemist are shown in Table 8 at the end of this bulletin. Where more than five samples of a single product were analyzed, the average of the analyses found were calculated and are shown as a "mean" at the end of each such group. To show the variation among the individual samples within each group, standard deviations were calculated and are expressed as percentages of the means; these are shown as coefficients of variation after the means. A small coefficient of variation indicates a uniform product, while a large coefficient shows a wide range among individual analyses. The total valuation found in each sample, expressed as a percentage of the valuation guaranteed, is shown in the last column of Table 8.

Summaries of the individual analyses of the principal grades are shown in Table 5. In every grade, the average valuation found exceeded the valuation guaranteed. There were a few cases in which the average nitrogen found averaged slightly smaller than the nitrogen guaranteed. Variations among samples were greatest with respect to available phosphoric acid and smallest with respect to nitrogen. The average retail selling prices also are shown, both as averages and as ratios in relation to the valuations guaranteed.

Data for individual manufacturers of mixed goods are summarized in Table 6. The actual averages of

analyses found and analyses guaranteed by a manufacturer are shown. To show more clearly the overall relation of analysis found to analysis guaranteed by each company, each individual analysis was expressed as a percentage of the analysis guaranteed. These percentages for each manufacturer were then treated as single populations, and means and standard deviations were calculated. In almost every case, the means exceeded 100, or the general average of analyses found were greater than the analyses guaranteed. However, very wide differences in conformity of manufacture among the different manufacturers are evident. While the variation for many companies, the standard deviations for many companies show clearly that a great deal more is necessary for them to produce a uniform product. The wide ranges in analyses shown by these companies and standard deviations are evidence that these companies are putting out many lots of fertilizers which are short of the analyses guaranteed. Most means for nitrogen were close to 100, but considerable variations in available phosphoric acid and potash were shown. A wider range in the relation of analysis found to analysis guaranteed are apparent for most companies.

Several organic fertilizers were collected and analyzed during the year. The analyses of these products are so low that they were omitted from Table 8, but are given instead in Table 7. In general, the analyses found were greater than the analyses guaranteed. However, these products are used for purposes other than supplying primary fertilizer components.

TABLE 6. ANALYSES FOUND COMPARED WITH ANALYSES GUARANTEED BY DIFFERENT MANUFACTURERS

Company	Nitrogen					Available phosphoric acid					Potash			
	Number	AG, %	AF, %	100 AF/AG		Number	AG, %	AF, %	100 AF/AG		Number	AG, %	AF, %	100 AF/AG
				Mean	S.D.				Mean	S.D.				
Armour, Dallas	139	9.66	9.64	101.3	2.1	148	17.28	17.94	104.4	2.2	108	8.52	8.73	102.7
Armour, Houston	271	11.19	11.23	100.8	2.0	266	17.60	18.34	104.7	2.2	189	8.26	8.39	101.9
Best	71	13.93	14.23	103.3	2.1	73	23.25	24.20	104.8	2.2	36	11.00	11.36	104.3
Campbell	18	8.83	8.97	104.4	2.2	18	12.33	12.60	102.1	2.3	17	8.12	8.96	109.7
Caprock	8	12.00	11.98	100.2	2.0	12	20.67	21.02	102.5	2.3	6	10.67	10.70	100.3
Central Texas	46	10.02	9.73	103.0	2.1	52	19.79	20.70	107.3	2.3	31	7.94	7.84	101.8
Coastal Chemical	24	13.96	13.96	100.1	2.0	24	22.54	24.18	108.4	2.4	13	11.54	12.82	112.8
Consumers	9	9.78	9.28	95.0	1.7	9	13.67	14.91	116.7	3.1	9	8.11	8.71	109.6
East Texas Products	66	9.11	9.16	101.1	2.0	66	17.67	18.58	105.8	2.3	65	9.78	9.99	102.3
Farmers	42	8.90	9.35	105.7	2.2	47	16.85	17.20	102.8	2.2	41	9.02	9.70	107.8
Gilmer	14	8.57	8.71	103.4	2.1	14	14.57	15.49	107.9	2.5	14	8.57	9.36	109.8
Goodpasture	26	8.65	8.95	106.4	2.3	24	16.96	16.78	99.6	2.1	12	9.17	9.75	106.6
Hi-Yield	88	9.73	9.66	100.9	2.0	94	18.43	19.59	107.5	2.3	71	8.27	8.70	105.8
IMC, Texarkana	87	8.42	8.46	101.3	2.1	89	14.90	15.46	104.7	2.2	85	8.69	9.26	107.7
IMC, Fort Worth	203	9.69	9.61	100.1	2.0	220	17.97	18.61	104.6	2.2	169	8.24	8.59	104.8
Jacksonville	19	8.74	8.86	101.8	2.1	19	16.63	17.50	105.7	2.4	19	8.74	8.78	101.8
Olin Mathieson	447	13.59	13.67	100.5	2.0	439	22.61	23.09	102.3	2.1	226	11.85	12.59	106.4
Pittsburg	50	8.78	8.50	100.1	2.0	50	14.60	15.58	110.6	2.5	46	9.04	9.69	108.9
Red Star	107	10.86	10.93	101.6	2.1	117	18.63	19.05	103.2	2.2	69	8.83	9.25	105.8
Smith Douglass	108	12.26	12.65	103.6	2.2	113	22.41	23.70	106.5	2.3	70	12.29	13.03	107.2
Swift, Houston	114	9.80	9.60	100.0	2.0	114	16.93	17.63	105.0	2.2	90	9.27	9.69	106.3
Swift, Shreveport	45	8.47	8.71	104.5	2.2	45	15.31	15.69	103.6	2.2	45	9.89	10.40	105.7
Texas Farm Products	106	9.41	9.31	99.4	2.0	109	15.96	16.68	105.4	2.2	94	9.23	9.68	104.8
Tide	24	14.92	14.86	99.6	2.0	21	13.29	14.02	106.0	2.4	5	6.80	7.16	105.8
Tyler	29	10.48	10.62	104.5	2.1	29	16.97	17.92	107.1	2.4	22	8.73	10.14	118.2
Virginia Carolina	176	9.91	9.86	100.4	2.0	179	16.65	17.17	103.4	2.1	145	9.22	9.80	107.2

AF and AG: Analyses found and analyses guaranteed.

Mean and S.D.: Mean and standard deviation of analyses found expressed as percentages of analyses guaranteed.

TABLE 7. ANALYSIS OF SOME ORGANIC FERTILIZERS

Fertilizer	Nitrogen		Available phosphoric acid		Potash	
	G	F	G	F	G	F
Agricultural Chemical Company, Houston, Texas						
Sheep manure	1.2	2.4	1.0	1.1	2.0	2.3
Fertilizer Company, San Antonio, Texas						
Steer manure	1.0	1.5	1.0	0.3	1.0	0.0
Feed and Cattle Company, Daingerfield, Texas						
Steer manure	1.0	1.5	1.0	1.0	1.0	1.3
and Sherman, San Antonio, Texas						
Sheep manure	1.2	1.5	1.0	1.0	1.5	1.8
Sheep manure	2.5	1.8	1.0	1.0	1.5	2.5
Sheep manure	2.2	1.4	1.0	0.8	1.5	2.1
Rendering By-Products, Galveston, Texas						
Merender Organic Fertilizer	3.5	5.7	1.5	5.2	1.5	1.7
Henderson & Sons, Houston, Texas						
Guano Bat guano	3.0	3.1	3.0	3.7	1.0	0.9
Plant Foods, Lubbock, Texas						
Organic compost	0.0	2.1	0.0	0.9	0.0	0.0
Wisconsin Sewage Commission, Milwaukee, Wisc.						
Uranium	5.5	5.9	4.0	4.4	0	0
Fertilizer Company, Los Fresnos, Texas						
Star Steer manure	1.0	2.0	1.0	2.1	1.0	1.8
Agricultural Chemicals, Fort Worth, Texas						
Activated sludge	3.3	3.0	3.6	3.1	0	0
Agricultural Company, Colorado Springs, Colo.						
Sheep manure	1.0	1.6	1.0	1.2	1.0	2.7

Guaranteed F = Analysis found

TO OBTAIN A FREE ANALYSIS

Purchasers of commercial fertilizers for their own use on their own land (but not for sale) may obtain a free analysis of a sample, provided they take it in accordance with the requirements of the Texas fertilizer law. This privilege of a free analysis applies to fertilizers sold under the fertilizer law and samples taken properly so that they represent the fertilizer sampled. The proper sampling of a fertilizer should be done carefully, and the law requires that it be taken in a certain way to insure a true sample. Those who desire the free analysis of a sample of commercial fertilizer should write to the State Chemist, Agricultural Experiment Station, Texas, and request a copy of the form entitled "Application for Free Fertilizer Analysis." No samples will be analyzed unless the sample is accompanied by this form, properly executed.

PUBLICATIONS ON FERTILIZERS

Two reports showing the tonnages of different fertilizers sold in each county in the State were published during the year. Fall sales are shown in Progress Report 2124 and spring sales in Progress Report 2150. Other publications dealing with the value and use of commercial fertilizers are issued frequently by the Texas Agricultural Experiment Station and the Texas Agricultural Extension Service. Check lists of these publications will be sent free on request to the Agricultural Information Office, College Station, Texas. To prevent needless waste, and to insure the best possible distribution of these publications, requestors are urged to limit their request to publications they have reason to believe will be useful immediately, and which they will have time to study.

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %
ALLIED CHEMICAL, HOPEWELL, VIRGINIA										
Arcadian Golden Uran 32 Solution 32-0-0							1826	9.2	23.7	9.5
Guaranteed		32.0	0.0	0.0			2383	8.6	21.3	10.1
1838		31.5	0.0	0.0	99		2417	9.9	18.0	10.4
1840		31.4	0.0	0.0	99	Mean		9.7	20.8	9.9
1843		32.0	0.0	0.0	100	Coef. Var.		6.6	7.6	5.9
1850		32.0	0.0	0.0	100	Armour Pebble Plant Food 5-10-10				
1855		32.1	0.0	0.0	101	Guaranteed		5.0	10.0	10.0
2279		32.1	0.0	0.0	101	1065		5.4	10.2	10.0
2281		32.1	0.0	0.0	101	1319		5.6	11.1	9.0
2294		32.1	0.0	0.0	101	1700		5.3	10.7	9.6
Mean		31.9	0.0	0.0		1727		5.6	12.5	10.1
Coef. Var.		0.9	0.0	0.0		1902		5.5	10.5	11.0
						2384		5.2	9.5	10.3
						Mean		5.4	10.8	10.1
						Coef. Var.		2.6	9.4	7.4
THE ANACONDA COMPANY, ANACONDA, MONTANA						Armour Plant Food 5-20-20				
Anaconda Liquid Phosphoric Acid 0-55-0						Guaranteed		5.0	20.0	20.0
Guaranteed		0.0	55.0	0.0		1289		5.4	20.0	20.0
2477		0.0	55.7	0.0	102	Armour Pebble Plant Food 16-20-0				
ARKMO FERTILIZER COMPANY, WALNUT RIDGE, ARK.						Guaranteed		16.0	20.0	0.0
Arkmo General Brand 13-39-0						65		16.0	22.2	0.0
Guaranteed		13.0	39.0	0.0		145		16.5	20.2	0.0
1948		13.1	36.3	0.0	96	250		15.3	20.1	0.0
ARMOUR AGRICULTURAL CHEMICAL CO., DALLAS, TEXAS						279		14.4	20.6	0.0
Armour Pebble Plant Food 15-15-0						288		15.4	20.2	0.0
Guaranteed		15.0	15.0	0.0		356		15.0	20.3	0.0
922		15.1	15.4	0.0	102	420		15.7	20.3	0.0
1631		14.1	16.1	0.0	100	749		11.7	20.1	0.0
2268		15.2	16.0	0.0	104	923		15.5	20.7	0.0
Armour Pebble Plant Food 8-8-8						1297		15.3	20.9	0.0
Guaranteed		8.0	8.0	8.0		1356		16.4	22.1	0.0
721		7.4	9.3	8.1	102	1423		16.2	20.8	0.0
1070		8.1	8.3	8.3	103	1432		14.9	23.9	0.0
1079		8.0	8.8	8.0	104	1748		15.8	24.7	0.0
1276		7.7	11.9	7.7	114	2016		16.1	20.4	0.0
1324		7.7	8.8	8.7	103	2156		15.8	22.0	0.0
1358		8.0	9.1	8.1	105	2168		16.1	20.3	0.0
Mean		7.8	9.4	8.2		Mean		15.4	21.2	0.0
Coef. Var.		3.4	13.7	4.1		Coef. Var.		7.2	6.5	0.0
Armour Pebble Plant Food 12-12-12						Armour Pebble Plant Food 13-39-0				
Guaranteed		12.0	12.0	12.0		Guaranteed		13.0	39.0	0.0
1359		11.5	13.9	12.0	104	409		13.0	39.0	0.0
2556		12.0	10.1	12.0	95	Armour Pebble Plant Food 0-20-0				
Armour Pebble Plant Food 10-20-0						Guaranteed		0.0	20.0	0.0
Guaranteed		10.0	20.0	0.0		249		0.0	20.1	0.0
385		10.4	20.2	0.0	103	1290		0.0	20.0	0.0
1357		10.0	19.4	0.0	99	1825		0.0	20.0	0.0
1420		10.6	21.2	0.0	106	2158		0.0	20.0	0.0
1447		10.1	21.1	0.0	104	Armour Pebble Plant Food 0-46-0				
1819		10.2	20.9	0.0	104	Guaranteed		0.0	46.0	0.0
1824		10.1	22.7	0.0	109	130		0.0	44.6	0.0
1883		10.1	21.2	0.0	104	411		0.0	46.4	0.0
2155		10.1	20.2	0.0	101	1744		0.0	46.0	0.0
Mean		10.2	20.9	0.0		1822		0.0	46.2	0.0
Coef. Var.		2.0	4.7	0.0		Armour Vertagreen Plant Food 8-8-8				
Armour Pebble Plant Food 15-30-0						Guaranteed		8.0	8.0	8.0
Guaranteed		15.0	30.0	0.0		1072		8.2	8.2	8.2
1758		13.2	29.5	0.0	94	Armour Vertagreen Plant Food 6-12-6				
Armour Pebble Plant Food 10-20-10						Guaranteed		6.0	12.0	6.0
Guaranteed		10.0	20.0	10.0		1073		6.5	12.6	6.0
262		9.6	20.3	10.0	100	1383		6.1	12.6	6.1
278		9.5	20.3	10.3	100	1820		6.5	12.8	6.6
287		10.0	20.0	10.1	101	1903		7.1	13.1	6.4
418		10.0	20.2	10.0	101	2418		6.3	11.2	6.8
752		10.8	20.0	10.2	104	2433		7.0	11.7	6.1
1511		10.0	21.2	10.1	104	Mean		6.6	12.3	6.3
1699		8.9	22.7	8.4	101	Coef. Var.		5.9	5.8	5.0

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Armour Vertagreen Plant Food 10-20-10	Guaranteed	10.0	20.0	10.0	
	263	10.3	20.1	10.0	102
	1448	10.0	20.0	10.3	101
Armour Vertagreen Plant Food Commercial 7-14-7	Guaranteed	7.0	14.0	7.0	
	744	7.7	14.3	7.0	105
	2552	7.1	14.8	7.7	105
Armour Old Black Joe Fertilizer 6-12-6	Guaranteed	6.0	12.0	6.0	
	261	6.9	12.2	6.0	107
	331	6.6	12.2	6.0	105
	359	6.1	12.0	6.0	101
	417	6.0	12.1	6.0	101
	421	6.3	12.5	6.0	104
	695	6.6	12.0	6.0	104
	722	6.9	12.2	6.0	107
	944	6.7	12.1	5.5	104
	1010	6.0	13.5	6.0	107
	1014	7.2	13.2	6.1	113
	1022	6.3	12.0	6.0	102
	1038	6.7	12.4	6.4	107
	1042	7.2	12.3	6.0	109
	1069	6.0	12.0	6.2	101
	1277	6.1	12.6	6.0	103
	1325	6.7	12.4	6.0	107
	1421	6.4	13.2	6.3	109
	1424	6.1	12.8	6.8	106
	1462	6.9	12.7	6.0	109
	1512	6.1	13.1	6.3	106
	1649	6.1	13.3	6.7	108
	1671	5.3	13.3	5.3	100
	1884	8.2	11.3	8.7	117
	1890	6.9	13.2	6.6	112
	1908	6.3	12.9	6.9	108
	2019	6.3	13.3	7.4	111
2464	6.1	12.3	6.1	103	
2546	7.8	13.8	5.6	118	
2551	6.7	12.6	6.3	108	
2594	6.0	12.3	6.8	103	
Mean	6.5	12.6	6.3		
Coef. Var.	8.9	4.6	10.0		
Armour Old Black Joe Fertilizer 10-20-10	Guaranteed	10.0	20.0	10.0	
	164	9.6	21.0	10.0	101
	247	9.4	20.5	10.0	99
	320	9.8	20.1	10.1	100
	330	9.6	20.1	10.0	99
	338	9.6	20.2	10.3	100
	355	10.0	20.0	10.1	101
	397	10.0	20.4	10.0	101
	410	10.4	20.1	10.1	102
	694	9.7	20.0	10.2	100
	921	9.0	20.0	10.1	97
	958	10.0	20.8	10.3	103
	1009	9.3	20.1	10.0	98
	1013	10.0	20.7	10.0	102
	1018	10.0	20.3	10.0	101
	1039	10.0	20.0	10.5	101
	1064	9.6	20.2	10.0	99
	1068	9.6	21.5	10.5	103
	1288	9.7	20.1	10.4	100
	1292	10.2	20.0	10.6	102
	1296	10.2	20.5	10.1	103
	1318	9.0	21.5	10.6	101
	1323	9.4	21.7	10.6	104
	1334	9.6	22.2	10.3	105
	1355	10.1	22.9	10.0	108
	1365	10.0	20.5	10.4	102
	1385	9.2	18.6	10.0	94

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	
Armour Vertagreen Plant Food 10-20-10	1419	10.0	21.6	10.8	105	
	1433	9.4	20.0	11.0	99	
	1461	9.2	22.9	8.7	103	
	1549	10.0	21.2	10.9	105	
	1815	8.7	18.4	9.6	91	
	1889	9.6	23.0	10.7	107	
	1914	9.7	22.3	10.6	106	
	1986	8.8	21.6	11.0	101	
	2020	10.1	20.4	11.4	104	
	2157	9.4	20.9	10.4	101	
	2169	10.1	20.4	10.4	102	
	2432	10.1	19.4	10.1	99	
	2460	9.0	21.1	10.4	100	
2462	10.1	21.3	10.1	104		
Mean	9.7	20.7	10.3			
Coef. Var.	4.3	5.0	4.2			
Garden Mark Complete Lawn Food 10-10-5	Guaranteed	10.0	10.0	5.0		
	1295	12.0	7.3	5.7	103	
	1821	10.1	12.3	3.7	107	
Armour Ammonium Nitrate Fertilizer 33.5-0-0	Guaranteed	33.5	0.0	0.0		
	2104	33.7	0.0	0.0	101	
ARMOUR AGRICULTURAL CHEMICAL COMPANY, HOUSTON, TEXAS						
Armour Pebble Plant Food 8-8-8	Guaranteed	8.0	8.0	8.0		
	766	8.8	8.8	8.0	109	
	1680	8.4	8.1	8.6	105	
	1741	8.1	10.3	8.3	111	
	2367	8.1	12.7	8.1	123	
	2385	7.8	8.5	8.5	102	
	Mean	8.2	9.7	8.3		
	Coef. Var.	4.5	19.4	3.0		
	Armour Pebble Plant Food 12-12-12	Guaranteed	12.0	12.0	12.0	
		437	11.3	12.2	12.1	98
		702	11.3	15.1	10.1	104
1091		11.7	16.8	10.6	111	
1217		13.0	10.7	12.3	101	
1238		12.1	12.2	12.4	102	
1926		10.5	16.1	11.4	105	
2216		12.6	12.4	12.5	105	
Mean		11.8	13.6	11.6		
Coef. Var.		7.2	17.1	8.2		
Armour Pebble Plant Food 10-20-0		Guaranteed	10.0	20.0	0.0	
	29	10.5	19.3	0.0	101	
	47	9.6	20.2	0.0	99	
	64	10.0	20.2	0.0	101	
	442	10.5	20.3	0.0	103	
	445	9.6	20.2	0.0	99	
	560	9.5	20.7	0.0	100	
	630	9.6	20.4	0.0	100	
	776	9.7	20.6	0.0	101	
	830	10.0	20.2	0.0	101	
	854	9.7	20.2	0.0	100	
	1081	10.1	20.3	0.0	102	
	1082	10.0	20.9	0.0	103	
	1125	10.0	20.1	0.0	101	
	1985	10.1	21.6	0.0	105	
	2044	10.9	21.8	0.0	109	
	2072	10.3	20.1	0.0	102	
	2123	10.3	19.0	0.0	99	
	2253	10.0	20.2	0.0	101	
	2521	10.0	20.9	0.0	103	
Mean	10.0	20.4	0.0			
Coef. Var.	3.6	3.2	0.0			

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	
Armour Pebble Plant Food 10-20-10						Armour Pebble Plant Food 5-10-10					
	Guaranteed	10.0	20.0	10.0			Guaranteed	5.0	10.0	10.0	
	15	10.4	19.7	10.0	101		1717	5.8	12.2	10.1	
	20	10.0	20.2	9.7	102		1723	5.7	12.2	10.1	
	28	9.0	22.3	10.0	102	Armour Pebble Plant Food 10-20-20					
	48	8.9	21.6	10.2	101		Guaranteed	10.0	20.0	20.0	
	66	9.3	22.6	10.1	104		2066	10.1	17.7	21.7	
	71	11.4	20.7	10.2	108	Armour Pebble Plant Food 5-20-20					
	85	10.0	20.5	10.2	102		Guaranteed	5.0	20.0	20.0	
	110	10.3	20.0	10.2	102		1689	5.9	20.7	20.0	
	120	9.3	20.2	10.0	98	Armour Pebble Plant Food 16-20-0					
	123	10.1	20.2	10.0	101		Guaranteed	16.0	20.0	0.0	
	383	10.5	20.2	10.1	103		49	16.1	21.8	0.0	
	422	8.6	20.6	10.0	97		112	16.3	20.0	0.0	
	443	9.1	20.2	10.2	98		116	16.0	20.7	0.0	
	452	10.0	20.3	10.4	102		439	16.0	20.3	0.0	
	586	10.3	20.3	10.1	102		444	14.9	20.1	0.0	
	653	9.3	21.4	10.1	101		453	16.0	20.0	0.0	
	658	9.6	20.1	10.2	99		511	15.4	20.5	0.0	
	670	9.5	20.4	10.0	100		521	16.0	20.8	0.0	
	706	10.2	20.0	10.0	101		540	16.8	20.0	0.0	
	770	10.1	20.5	10.1	102		561	16.2	20.3	0.0	
	775	10.0	21.9	10.0	105		677	16.4	20.0	0.0	
	811	10.0	20.4	9.1	100		680	16.0	20.2	0.0	
	817	10.6	20.5	10.0	104		684	16.0	24.2	0.0	
	831	10.0	20.1	10.0	101		686	16.2	18.1	0.0	
	837	9.0	20.0	9.0	95		693	16.2	20.6	0.0	
	856	9.4	20.1	10.0	98		838	16.0	20.3	0.0	
	857	8.9	23.4	10.1	105		855	14.5	20.0	0.0	
	877	10.0	20.2	10.0	101		858	16.0	19.1	0.0	
	910	9.7	21.9	10.0	104		904	15.6	22.2	0.0	
	943	10.0	20.3	10.0	101		907	15.1	22.9	0.0	
	1077	9.1	20.0	10.0	97		911	15.7	20.4	0.0	
	1080	10.0	21.6	10.0	104		916	15.2	21.0	0.0	
	1090	10.1	21.0	10.0	103		1030	16.0	21.0	0.0	
	1118	9.7	21.4	10.3	103		1076	16.1	17.4	0.0	
	1136	12.3	20.0	8.8	108		1126	17.0	20.7	0.0	
	1151	9.3	21.8	10.0	102		1141	16.0	19.4	0.0	
	1191	9.3	20.8	10.0	100		1153	15.7	20.0	0.0	
	1234	10.1	20.0	10.0	101		1154	16.0	20.2	0.0	
	1249	10.0	20.3	10.0	101		1176	16.0	20.5	0.0	
	1369	9.8	21.8	10.3	105		1218	15.6	22.3	0.0	
	1372	10.0	19.8	10.0	100		1258	16.2	20.5	0.0	
	1555	9.5	25.6	9.7	112		1370	15.2	24.0	0.0	
	1679	9.7	21.0	10.1	102		1373	13.6	31.4	0.0	
	1687	10.1	21.1	10.5	104		1451	16.1	19.3	0.0	
	1945	9.4	22.3	10.3	104		1457	16.1	22.6	0.0	
	1964	10.1	22.2	10.4	107		1556	15.7	22.5	0.0	
	1981	10.1	21.0	11.2	105		1673	15.5	23.7	0.0	
	2033	9.5	22.2	10.6	105		1882	16.1	20.8	0.0	
	2043	10.2	21.3	10.9	106		2032	15.7	23.9	0.0	
	2096	9.2	22.9	10.2	105		2042	16.2	16.5	0.0	
	2135	9.5	22.0	10.4	104		2265	16.1	20.1	0.0	
	2191	9.8	22.2	10.1	105		2313	15.7	20.9	0.0	
	2195	9.9	22.6	10.9	108		2342	17.3	12.7	0.0	
	2252	9.8	22.2	10.1	105		2554	16.1	20.1	0.0	
	2295	9.5	20.9	10.6	102		Mean	15.9	20.8	0.0	
	2500	10.0	23.1	10.7	109		Coef. Var.	3.8	12.4	0.0	
	2522	9.3	21.3	10.2	101	Armour Pebble Plant Food 11-48-0					
	2555	9.9	21.3	10.3	104		Guaranteed	11.0	48.0	0.0	
	Mean	9.8	21.1	10.1			14	11.1	48.1	0.0	
	Coef. Var.	6.0	5.3	3.7		Armour Pebble Plant Food 13-39-0					
Armour Pebble Plant Food 12-24-12							Guaranteed	13.0	39.0	0.0	
	Guaranteed	12.0	24.0	12.0			111	13.0	41.8	0.0	
	440	11.3	24.5	12.0	99	Armour Pebble Plant Food 0-20-0					
	587	12.2	24.2	10.4	100		Guaranteed	0.0	20.0	0.0	
	1152	12.3	24.5	11.4	102		121	0.0	20.0	0.0	
	1206	12.0	24.3	12.0	101						
	1237	12.3	22.0	12.5	98						
	Mean	12.0	23.9	11.7							
	Coef. Var.	3.4	4.5	6.9							

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Armour Pebble Plant Food 0-20-0	436	0.0	20.3	0.0	102		464	12.2	12.0	6.3	102
	505	0.0	20.1	0.0	101		533	11.5	12.2	6.0	99
	679	0.0	20.0	0.0	100		1148	12.0	12.8	6.5	104
	2100	0.0	20.1	0.0	101		1194	11.5	13.6	6.0	103
	Mean	0.0	20.1	0.0			1208	12.2	12.0	6.4	102
	Coef. Var.	0.0	0.5	0.0			1552	12.1	15.3	5.6	110
							2059	11.5	13.7	6.9	105
Armour Pebble Plant Food 0-46-0	Guaranteed	0.0	46.0	0.0		2335	11.4	13.3	6.5	102	
	61	0.0	47.5	0.0	104	2340	12.2	12.6	6.3	104	
	357	0.0	46.1	0.0	101	2466	12.1	13.0	6.1	104	
	428	0.0	46.7	0.0	102	Mean	11.8	13.0	6.3		
	678	0.0	46.0	0.0	100	Coef. Var.	2.9	7.7	5.3		
	1371	0.0	46.3	0.0	101	Armour Old Black Joe Fertilizer 6-12-6					
	2097	0.0	46.1	0.0	101	Guaranteed	6.0	12.0	6.0		
	2290	0.0	46.3	0.0	101	6	6.7	11.5	5.9	103	
	Mean	0.0	46.4	0.0		42	5.8	11.8	6.0	98	
	Coef. Var.	0.0	1.1	0.0		46	6.3	12.1	6.1	103	
Armour Vertagreen Plant Food 8-8-8	Guaranteed	8.0	8.0	8.0		72	6.1	12.0	6.0	101	
	30	8.6	8.1	8.4	105	86	6.0	12.8	6.1	104	
	1765	8.1	9.7	8.3	108	427	6.1	12.3	6.1	103	
						435	6.0	12.0	6.0	100	
Armour Vertagreen Plant Food 10-20-10	Guaranteed	10.0	20.0	10.0		438	5.8	12.1	6.1	100	
	109	9.4	20.3	10.0	99	441	6.0	12.1	6.2	101	
	465	10.0	20.3	10.1	101	565	6.6	12.0	6.0	104	
	539	9.5	20.4	7.7	97	574	6.0	12.0	6.0	100	
	585	10.7	20.1	10.0	103	579	6.4	12.1	6.0	103	
	1137	11.7	17.9	10.0	101	584	6.6	12.0	5.4	103	
	1147	10.0	20.1	10.2	101	591	6.0	12.0	6.3	101	
	1205	10.0	21.1	10.2	103	652	5.9	12.3	6.0	101	
	1553	10.1	22.0	10.4	106	657	6.1	12.0	6.0	101	
	2067	10.5	21.9	10.8	108	671	6.0	12.5	6.0	103	
	Mean	10.2	20.5	9.9		687	6.0	11.4	6.1	98	
	Coef. Var.	6.8	5.9	8.8		701	6.1	11.7	6.0	100	
						705	6.1	12.0	6.0	101	
						812	6.1	12.2	6.0	102	
						836	6.0	12.0	6.0	100	
Armour Vertagreen Plant Food 6-24-12	Guaranteed	6.0	24.0	12.0		873	6.0	11.5	6.0	98	
	2065	6.1	26.5	12.6	108	878	6.2	12.0	6.0	102	
						883	6.0	12.0	6.1	101	
Armour Vertagreen Plant Food 5-10-5	Guaranteed	5.0	10.0	5.0		1078	6.1	13.1	6.0	106	
	1946	5.2	10.8	5.4	107	1083	6.1	12.0	6.0	101	
	2095	5.5	10.4	5.1	106	1092	6.2	12.7	6.1	105	
	2331	5.0	10.9	5.4	106	1119	6.1	12.0	6.1	101	
						1123	6.1	12.0	6.1	101	
						1142	6.4	12.6	6.0	105	
Armour Vertagreen Plant Food Commercial 6-12-6	Guaranteed	6.0	12.0	6.0		1198	6.3	12.0	6.0	102	
	538	6.0	12.1	6.0	101	1216	6.1	12.7	6.0	104	
	562	6.3	12.1	6.3	103	1248	6.2	12.3	6.3	104	
	665	6.1	12.0	6.0	101	1250	6.0	13.1	6.1	105	
	748	6.2	12.2	5.3	101	1382	6.2	12.5	6.2	104	
	1034	6.4	12.2	6.2	104	1452	6.4	13.0	5.7	107	
	1178	6.2	12.2	6.0	103	1458	6.2	13.4	6.0	108	
	1195	6.4	12.8	6.5	107	1554	5.8	14.6	6.1	110	
	1207	6.0	12.0	6.4	101	1586	6.1	14.1	6.2	110	
	1480	6.1	12.0	6.1	101	1678	6.0	13.4	6.5	107	
	2286	6.3	12.1	6.5	104	1690	6.1	12.0	5.9	101	
	2296	5.5	12.6	6.0	100	1698	6.4	12.1	6.0	103	
	2368	6.1	12.7	6.1	104	1716	6.6	13.6	6.0	111	
	2386	6.4	12.6	6.2	106	1724	6.6	13.4	6.9	112	
	Mean	6.2	12.3	6.1		1726	6.2	13.6	6.5	109	
	Coef. Var.	4.0	2.3	4.9		1740	6.3	12.9	6.9	108	
						1760	6.1	13.0	5.6	104	
					1982	6.7	13.2	6.9	112		
Armour Vertagreen Plant Food Commercial 10-10-5	Guaranteed	10.0	10.0	5.0		2124	6.1	12.1	7.0	104	
	1031	10.2	10.3	5.3	103	2129	6.1	12.1	6.6	103	
	1179	9.5	11.7	5.6	105	2136	6.1	12.3	6.9	104	
						2192	6.1	12.1	6.9	103	
Armour Vertagreen Plant Food Commercial 12-12-6	Guaranteed	12.0	12.0	6.0		2196	6.0	12.1	6.6	102	
	419	11.5	12.0	6.2	99	2225	6.1	11.7	6.4	101	
						2241	5.9	12.1	6.0	100	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	
Armour Old Black Joe Fertilizer 6-12-6						Best Brand Fertilizer 8-8-8					
	2291	5.6	12.4	6.0	100	Guaranteed		8.0	8.0	8.0	
	2344	6.1	12.2	6.1	102	1510	9.3	8.1	8.7		
	2444	6.1	12.6	6.3	104	Best Brand Fertilizer 12-12-12					
	2520	9.6	11.9	7.0	125	Guaranteed		12.0	12.0	12.0	
Mean		6.2	12.4	6.2		40	13.3	13.0	12.1		
Coef. Var.		7.9	5.2	5.4		1100	12.3	12.0	12.0		
Armour Old Black Joe Fertilizer 10-20-10							1247	12.0	12.0	14.8	
Guaranteed		10.0	20.0	10.0		1472	13.5	10.4	12.0		
1498		10.0	21.2	10.0	103	2046	12.8	13.0	13.8		
1703		9.5	23.8	10.0	108	Mean		12.8	12.1	12.8	
1722		10.1	20.8	10.3	103	Coef. Var.		4.9	8.8	10.0	
1725		10.1	20.0	10.0	101	Best Brand Fertilizer 13-13-13					
2269		9.9	20.4	10.7	102	Guaranteed		13.0	13.0	13.0	
2366		10.1	20.1	10.4	102	1094	12.7	13.0	13.0		
2411		9.6	21.5	10.4	103	2007	13.1	16.0	14.4		
Mean		9.9	21.1	10.3		Best Brand Fertilizer 10-20-0					
Coef. Var.		2.5	6.2	2.6		Guaranteed		10.0	20.0	0.0	
Armour Ammonium Nitrate 33.5-0-0							51	11.5	20.2	0.0	
Guaranteed		33.5	0.0	0.0		245	10.9	20.7	0.0		
67		33.6	0.0	0.0	101	1293	10.6	20.8	0.0		
99		34.3	0.0	0.0	103	Best Brand Fertilizer 6-12-6					
723		33.9	0.0	0.0	102	Guaranteed		6.0	12.0	6.0	
771		33.6	0.0	0.0	101	578	10.7	12.1	6.7		
821		33.6	0.0	0.0	101	Best Brand Fertilizer 10-20-10					
1384		33.7	0.0	0.0	101	Guaranteed		10.0	20.0	10.0	
1672		33.5	0.0	0.0	100	13	9.5	20.2	10.4		
1749		33.5	0.0	0.0	100	26	9.3	23.2	9.1		
1974		33.6	0.0	0.0	101	70	10.0	20.9	11.0		
2309		33.1	0.0	0.0	99	374	10.5	20.5	10.4		
2416		33.3	0.0	0.0	100	379	11.0	21.0	10.7		
2492		33.6	0.0	0.0	101	466	10.0	20.1	10.0		
2591		33.9	0.0	0.0	102	774	10.6	20.3	10.0		
Mean		33.6	0.0	0.0		801	11.9	19.5	10.0		
Coef. Var.		0.8	0.0	0.0		818	9.7	20.1	10.3		
Armour Ammonium Sulfate 21-0-0							914	10.0	20.2	10.0	
Guaranteed		21.0	0.0	0.0		933	10.3	18.5	10.2		
105		21.6	0.0	0.0	103	1093	10.5	21.2	10.3		
1688		21.1	0.0	0.0	101	1099	10.5	20.0	10.0		
2289		21.3	0.0	0.0	102	1294	10.6	18.2	10.8		
Armour Big Crop Fertilizer 8-8-8							1473	11.5	18.1	12.2	
Guaranteed		8.0	8.0	8.0		1561	10.9	20.5	10.4		
1117		8.3	9.0	7.4	105	1913	10.1	23.2	11.6		
Armour Vertagreen Rice Special 6-24-12							1917	9.1	24.0	10.4	
Guaranteed		6.0	24.0	12.0		1919	10.3	21.4	10.2		
1243		6.5	26.0	12.0	108	1929	10.1	21.0	13.2		
Steamboat Brand Ammonium Nitrate 33.5-0-0							2008	10.1	21.9	11.3	
Guaranteed		33.5	0.0	0.0		2588	9.1	21.8	11.7		
499		33.5	0.0	0.0	100	Mean		10.3	20.7	10.7	
ASSOCIATED COOPERATIVES, INC., SHEFFIELD, ALABAMA							Coef. Var.		6.8	7.3	8.4
Ammonium Nitrate Fertilizer 33.5-0-0						Best Brand Fertilizer 12-24-12					
Guaranteed		33.5	0.0	0.0		Guaranteed		12.0	24.0	12.0	
707		34.4	0.0	0.0	103	552	12.1	29.4	8.8		
Diammonium Phosphate 20-52-0							2292	11.4	26.9	13.3	
Guaranteed		20.0	52.0	0.0		Best Brand Fertilizer 15-30-15					
632		20.2	52.0	0.0	101	Guaranteed		15.0	30.0	15.0	
Ammonium Phosphate Nitrate Fertilizer 30-10-0							2002	18.0	32.7	15.0	
Guaranteed		30.0	10.0	0.0		Best Brand Fertilizer 10-20-20					
513		30.8	10.0	0.0	103	Guaranteed		10.0	20.0	20.0	
742		30.0	10.0	0.0	100	2587	10.1	21.0	19.5		
1163		30.0	10.0	0.0	100	Best Brand Ammonium Sulfate 21-0-0					
BEST FERTILIZER CO., HOUSTON, TEXAS						Guaranteed		21.00	0.0	0.0	
Best Brand Fertilizer 0-34-17						41	21.3	0.0	0.0		
Guaranteed		0.0	34.0	17.0		528	21.0	0.0	0.0		
1644		0.0	39.9	10.6	107	535	21.0	0.0	0.0		

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Best Brand Ammonia Sulfate 21-0-0	1587	21.1	0.0	0.0	101	Dutch Urea 46-0-0	Guaranteed	46.0	0.0	0.0	
	1988	21.0	0.0	0.0	100		551	46.3	0.0	0.0	101
	2143	21.1	0.0	0.0	101	CAMPBELL FERTILIZER CO., HOUSTON, TEXAS	Campbells Organic Base Fertilizer 8-8-8				
	2221	21.1	0.0	0.0	101		Guaranteed	8.0	8.0	8.0	
	2226	21.1	0.0	0.0	101		606	8.4	8.1	8.0	103
	2273	21.0	0.0	0.0	100		813	8.0	7.4	9.5	101
	Mean	21.1	0.0	0.0			Campbells Organic Base Fertilizer 6-12-6				
	Coef. Var.	0.5	0.0	0.0			Guaranteed	6.0	12.0	6.0	
Best Brand Fertilizer 16-20-0	Guaranteed	16.0	20.0	0.0		810	6.8	11.7	6.1	104	
	246	17.0	20.1	0.0	104	869	6.8	13.0	6.4	110	
	467	16.3	20.1	0.0	102	Campbell Organic Base Fertilizer 5-10-10					
	541	16.0	20.0	0.0	100	Guaranteed	5.0	10.0	10.0		
	546	16.2	20.3	0.0	102	1812	7.1	10.4	11.1	119	
	717	16.0	20.0	0.0	100	Green Glo Crop Booster 8-8-8					
	839	16.2	20.0	0.0	101	Guaranteed	8.0	8.0	8.0		
	845	15.5	28.2	0.0	117	1368	8.2	8.2	8.6	104	
	915	16.0	20.3	0.0	101	2038	8.4	9.0	10.3	112	
	1095	16.0	21.8	0.0	105	2058	8.1	8.5	9.8	107	
	1101	16.0	20.4	0.0	101	Green Glo Crop Booster 12-12-12					
	1173	16.0	21.0	0.0	103	Guaranteed	12.0	12.0	12.0		
	1425	16.7	21.4	0.0	106	2048	11.5	11.9	14.0	101	
	1560	16.2	21.4	0.0	104	Green Glo Crop Booster 10-20-10					
	1588	15.4	23.4	0.0	106	Guaranteed	10.00	20.0	10.0		
	1643	15.1	23.4	0.0	105	1813	9.5	23.9	10.8	109	
	2009	16.1	21.8	0.0	105	2047	9.2	20.0	13.2	101	
	2045	16.1	20.4	0.0	102	Green Glo Crop Booster 16-8-0					
2232	16.0	23.6	0.0	109	Guaranteed	16.0	8.0	0.0			
2451	16.1	20.1	0.0	101	2057	14.4	8.3	0.0	94		
2531	15.0	24.5	0.0	107	Green Glo Crop Booster 10-10-5						
Mean	16.0	21.6	0.0		Guaranteed	10.0	10.0	5.0			
Coef. Var.	2.9	9.7	0.0		1594	10.0	12.1	5.1	108		
Best Brand Fertilizer 18-46-0	Guaranteed	18.0	46.0	0.0		2142	10.1	10.6	5.3	104	
	536	18.0	46.1	0.0	101	M-G Brand Organic Base Fertilizer 6-12-6					
Best Brand Fertilizer 21-13-0	Guaranteed	21.0	13.0	0.0		Guaranteed	6.0	12.0	6.0		
	1226	21.0	14.7	0.0	105	1677	6.7	12.0	6.5	106	
	Best Ammonium Sulfate-Phosphate 21-20-0	Guaranteed	21.0	20.0	0.0		Campbell Granulated Fertilizer 10-20-10				
545		21.0	20.3	0.0	101	Guaranteed	10.0	20.0	10.0		
1474		21.1	20.0	0.0	101	870	10.0	20.0	10.0	100	
Best Brand Granulated Triple Superphosphate 0-46-0		Guaranteed	0.0	46.0	0.0		Campbell Granulated Fertilizer 12-24-12				
		423	0.0	46.3	0.0	101	Guaranteed	12.0	24.0	12.0	
		507	0.0	46.0	0.0	100	607	11.8	24.2	12.0	100
		638	0.0	45.1	0.0	99	Green Glo Lawn & Garden 6-12-6				
		639	0.0	44.5	0.0	97	Guaranteed	6.0	12.0	6.0	
		718	0.0	44.6	0.0	97	2128	6.8	7.5	5.7	86
		750	0.0	45.1	0.0	99	CAP ROCK FERTILIZER COMPANY, LITTLEFIELD, TEXAS				
		1559	0.0	46.0	0.0	100	Cap Rock Fertilizer 0-16-8				
		2316	0.0	46.2	0.0	101	Guaranteed	0.0	16.0	8.0	
	2326	0.0	46.3	0.0	101	1574	0.0	18.7	8.1	114	
	2478	0.0	46.1	0.0	100	Cap Rock Fertilizer 10-20-10					
	Mean	0.0	45.6	0.0		Guaranteed	10.0	20.0	10.0		
Coef. Var.	0.0	1.6	0.0		244	9.6	20.0	10.2	99		
ADLEY & BAKER, ST. LOUIS, MISSOURI	Guaranteed	20.0	20.0	0.0		1430	9.6	20.7	10.0	101	
	550	20.3	20.1	0.0	102	1459	10.3	20.9	9.5	103	
	1190	20.0	20.8	0.0	102	1573	8.4	20.1	10.3	95	
Calcium Nitrate 15-0-0	Guaranteed	15.0	0.0	0.0		Cap Rock Fertilizer 8-32-16					
	501	15.6	0.0	0.0	101	Guaranteed	8.0	32.0	16.0		
	548	15.5	0.0	0.0	100	1634	9.7	29.4	16.1	100	
	1189	15.5	0.0	0.0	100						
2223	15.3	0.0	0.0	99							

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Cap Rock Fertilizer 16-20-0										
Guaranteed		16.0	20.0	0.0			523	12.3	20.1	
471	16.0	20.4	0.0	101		575	12.1	20.2		
1431	16.1	18.6	0.0	98		675	14.9	19.2		
1941	16.1	23.0	0.0	108		903	16.0	21.1		
Cap Rock Fertilizer 0-20-0							1033	13.8	20.0	
Guaranteed		0.0	20.0	0.0			1829	14.5	20.4	
1460	0.0	20.2	0.0	101			1857	14.5	20.8	
2598	0.0	19.6	0.0	98			1872	14.3	21.1	
2599	0.0	20.7	0.0	104			1992	14.8	21.0	
							2264	14.8	17.8	
							2321	15.0	20.1	
							2567	13.8	19.4	
CENTRAL TEXAS FERTILIZER CO., COMANCHE, TEXAS						Mean		14.3	20.1	
Topper Brand Fertilizer 0-20-10						Coef. Var.		7.6	4.4	
Guaranteed		0.0	20.0	10.0		Topper Brand Fertilizer 11-48-0				
1871	0.0	22.2	8.2	106		Guaranteed		11.0	48.0	
Topper Brand Fertilizer 5-10-5						476	11.0	43.5		
Guaranteed		5.0	10.0	5.0		Topper Brand Fertilizer 13-39-0				
1674	5.5	10.0	6.8	109		Guaranteed		13.0	39.0	
1804	5.5	12.3	6.0	118		2178	10.6	39.6		
1869	5.6	12.7	5.1	119		Topper Brand Fertilizer 0-20-0				
2167	5.3	15.1	5.1	128		Guaranteed		0.0	20.0	
Topper Brand Fertilizer 6-12-6						1050	0.0	22.0		
Guaranteed		6.0	12.0	6.0		Topper Brand Fertilizers 0-46-0				
270	6.4	12.7	6.0	106		Guaranteed		0.0	46.0	
524	6.5	12.1	6.0	104		403	0.0	46.6		
577	7.5	12.1	7.7	114		477	0.0	46.0		
676	7.4	8.7	6.9	97		2177	0.0	47.2		
1047	6.0	17.7	6.0	124		2449	0.0	46.1		
1803	6.1	12.6	7.1	106						
1830	6.1	12.1	5.6	101		CHILEAN NITRATE SALES CORP., NEW YORK, NEW YORK				
2172	5.1	12.1	4.3	92		Champion Brand Chilean Nitrate of Soda 16-0-0				
2568	6.6	13.3	6.1	110		Guaranteed		16.0	0.0	
Mean	6.4	12.6	6.2			2461	16.0	0.0		
Coef. Var.	11.4	18.3	15.7							
Topper Brand Fertilizer 7-14-7						COASTAL CHEMICAL CORPORATION, YAZOO CITY, MISSISSIPPI				
Guaranteed		7.0	14.0	7.0		Coastal Brand Fertilizer 13-13-13				
1043	7.7	14.3	7.0	105		Guaranteed		13.0	13.0	
1049	8.0	14.8	7.0	109		1598	13.4	14.3		
1808	7.3	14.4	7.1	104		1602	14.2	14.5		
1870	7.1	16.0	5.1	105		2141	12.4	15.0		
Topper Brand Fertilizer 10-20-10						2148	13.1	13.6		
Guaranteed		10.0	20.0	10.0		Coastal Brand Fertilizer 12-24-12				
271	10.3	20.9	10.0	104		Guaranteed		12.0	24.0	
576	10.4	20.0	9.0	101		637	11.7	24.5		
674	11.7	20.0	10.1	107		641	11.4	24.0		
1051	11.4	20.4	9.5	106		1597	11.7	25.2		
1827	10.1	20.5	10.1	102		1600	12.2	25.9		
1858	9.2	22.6	8.3	102		1609	12.6	25.8		
1867	10.4	21.7	10.0	106		1611	12.2	25.1		
1991	8.8	21.2	10.8	100		2003	12.1	26.5		
2171	8.0	21.8	10.2	98		Mean		12.0	25.3	
2173	9.3	19.6	10.1	97		Coef. Var.		3.3	3.4	
Mean	10.0	20.9	9.8			Coastal Brand Fertilizer 14-14-7				
Coef. Var.	11.5	4.5	7.1			Guaranteed		14.0	14.0	
Topper Brand Fertilizer 5-10-10						1595	13.4	17.4		
Guaranteed		5.0	10.0	10.0		2140	10.7	16.9		
2497	6.6	15.6	7.6	131		Coastal Brand Fertilizer 12-48-0				
Topper Brand Fertilizer 3-12-12						Guaranteed		12.0	48.0	
Guaranteed		3.0	12.0	12.0		503	12.9	48.0		
1868	5.0	13.7	14.4	127		Coastal Brand Fertilizer 16-20-0				
2545	5.6	20.2	9.7	149		Guaranteed		16.0	20.0	
Topper Brand Fertilizer 16-20-0						506	16.0	20.1		
Guaranteed		16.0	20.0	0.0		636	16.0	21.0		
258	13.4	20.8	0.0	93						
267	15.3	20.0	0.0	98						

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Central Brand Fertilizer 16-20-0											
	640	15.6	20.0	0.0	99		895	10.5	19.4	10.2	101
	642	16.6	22.1	0.0	107		979	10.2	20.5	10.0	102
	1596	16.1	21.1	0.0	103		1062	10.1	20.0	10.3	101
	1599	16.5	21.3	0.0	105		1709	10.5	20.8	10.8	105
	1608	16.2	23.4	0.0	109	Mean		10.3	20.2	10.3	
	1610	16.4	22.8	0.0	108	Coef. Var.		1.9	2.4	2.9	
Mean		16.2	21.5	0.0		EAST TEXAS PRODUCTS CO., TYLER, TEXAS					
Coef. Var.		2.0	5.6	0.0		Goldenrod Gran-U-Pels 8-8-8					
Central Brand Fertilizer 13-39-0											
	Guaranteed	13.0	39.0	0.0			Guaranteed	8.0	8.0	8.0	
	1601	13.3	43.6	0.0	109		1274	8.3	8.7	8.3	106
Central Brand 18-46-0											
	Guaranteed	18.0	46.0	0.0			1735	8.1	10.2	8.2	111
	1228	18.4	48.2	0.0	104		2415	8.7	7.9	8.7	106
COMMERCIAL SOLVENTS CORP., STERLINGTON, LA.											
Ammonium Nitrate Fertilizer 33.5-0-0						Goldenrod Gran-U-Pels 12-12-12					
	Guaranteed	33.5	0.0	0.0			Guaranteed	12.0	12.0	12.0	
	21	33.6	0.0	0.0	101		2434	12.1	13.5	12.8	106
	1768	33.5	0.0	0.0	100	Goldenrod Gran-U-Pels 10-20-0					
	2472	33.6	0.0	0.0	101		Guaranteed	10.0	20.0	0.0	
	2502	33.7	0.0	0.0	101		87	10.0	21.6	0.0	105
Central Nitrogen Solution 370 37-0-0						Goldenrod Gran-U-Pels 6-12-6					
	Guaranteed	37.0	0.0	0.0			Guaranteed	6.0	12.0	6.0	
	2606	35.6	0.0	0.0	98		146	6.5	12.3	6.0	105
SUMMERS FERTILIZER CO., HENDERSON, TEXAS											
Consumer Brand Perma Gro 8-8-8											
	Guaranteed	8.0	8.0	8.0			703	6.0	12.9	5.0	102
	2558	8.0	11.8	7.8	116		789	6.5	12.1	6.0	104
Consumers Brand Perma Gro 10-20-10											
	Guaranteed	10.0	20.0	10.0			969	6.5	12.0	6.3	104
	96	8.8	20.0	10.1	96		1275	6.3	11.5	7.1	103
	310	10.0	20.5	10.0	102		1284	6.8	12.0	6.9	107
	324	10.0	20.3	10.1	101		1707	6.1	14.6	5.5	111
	1816	9.7	21.7	11.9	106		1729	6.2	14.1	6.1	111
Consumers Brand Hi-Quality Fertilizer 10-20-10											
	Guaranteed	10.0	20.0	10.0			1734	6.1	12.5	6.8	105
	301	10.0	20.5	10.2	102		1788	6.3	12.5	6.8	106
Consumers Brand Perma Gro Lawn Special 10-5-5											
	Guaranteed	10.0	5.0	5.0		Mean		6.3	12.7	6.3	
	95	9.3	5.5	5.0	126	Coef. Var.		3.9	7.7	10.6	
	1340	8.5	8.0	6.3	137	Goldenrod Gran-U-Pels 10-20-10					
JOHNSON'S FERTILIZER COMPANY, WESLACO, TEXAS											
Johnson's 21-0-0											
	Guaranteed	21.0	0.0	0.0			Guaranteed	10.0	20.0	10.0	
	544	21.0	0.0	0.0	100		17	10.5	20.6	10.1	104
FARM SERVICE, NEEDVILLE, TEXAS											
No Liquid Fertilizer 14-14-0											
	Guaranteed	14.0	14.0	0.0			80	9.9	20.8	10.0	102
	2293	13.1	14.3	0.0	97		92	10.3	20.7	10.4	104
FERTILIZER COMPANY, SHREVEPORT, LA.											
Granular Fertilizer 8-8-8											
	Guaranteed	8.0	8.0	8.0			100	9.5	20.0	10.4	99
	896	8.1	8.4	8.1	103		101	10.2	20.6	10.0	103
Granular Fertilizer 6-12-6											
	Guaranteed	6.0	12.0	6.0			118	10.2	20.5	10.0	103
	1063	6.1	12.0	6.6	102		139	9.8	20.4	10.0	101
	2090	6.6	11.1	6.7	102		147	10.0	20.2	10.0	101
Granular Fertilizer 10-20-10											
	Guaranteed	10.0	20.0	10.0			148	9.8	20.9	10.0	102
	208	10.0	20.2	10.0	101		181	10.0	20.2	14.9	107
	763	10.3	20.4	10.4	103		186	10.0	20.7	10.4	103
							328	10.0	20.0	10.1	101
							384	10.0	20.5	10.1	102
							704	10.0	20.3	10.0	101
							708	10.4	20.9	10.4	105
							719	9.6	20.5	10.1	100
							735	10.0	20.2	8.6	99
							790	10.0	20.3	10.0	101
							793	10.2	20.1	10.3	102
							941	10.2	20.0	10.0	101
							952	10.0	19.8	10.0	100
							1273	10.0	20.4	10.3	102
							1286	9.6	21.6	10.2	103
							1308	9.6	21.6	10.0	103
							1309	10.0	20.5	10.2	102
							1488	9.3	20.3	9.6	98
							1499	10.1	20.6	9.6	102
							1544	10.1	21.8	10.4	106
							1706	9.7	22.9	9.6	106
							1719	9.8	21.7	10.0	104
							1728	10.1	20.7	10.4	103
							1731	9.6	22.5	9.7	105
							1733	10.1	21.0	10.1	103

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Goldenrod Gran-U-Pels 10-20-10										
	1739	10.1	22.1	10.1	106		1897	6.8	12.9	6.9
	1787	10.1	21.5	10.2	105		2376	7.2	12.0	8.0
	1901	10.7	20.0	10.8	104		2489	6.7	12.3	6.5
	1906	10.2	22.2	10.5	107		Mean	7.0	12.2	7.0
	1912	9.8	22.0	10.0	105		Coef. Var.	3.8	6.9	9.3
	1960	10.1	22.8	10.0	108	Fafco Plant Food 10-20-10				
	2364	9.8	20.9	10.6	103	Guaranteed	10.0	20.0	10.0	10.0
	2414	10.1	20.9	10.6	104		231	10.4	20.2	10.3
	2428	9.7	21.3	10.1	103		233	10.3	20.1	10.8
	2524	9.8	20.9	10.0	102		234	10.4	20.4	10.1
	2526	9.9	20.1	10.3	101		298	10.0	20.6	10.0
	2609	9.2	22.2	8.5	101		305	10.2	20.4	10.3
Mean	10.0	20.9	10.2				730	10.4	19.7	10.3
Coef. Var.	2.8	3.9	8.2				926	10.5	20.1	10.5
Goldenrod Gran-U-Pels 5-10-10							1310	10.0	20.1	10.6
Guaranteed	5.0	10.0	10.0				1342	10.0	21.9	10.4
	1504	5.4	11.5	10.0	110		1353	10.2	21.5	10.3
	1712	5.1	13.3	10.0	116		1360	10.6	19.7	10.8
	1905	5.2	12.1	10.0	111		1526	10.4	20.4	10.6
Goldenrod Gran-U-Pels 10-20-20							1528	11.2	21.2	10.8
Guaranteed	10.0	20.0	20.0				1791	10.5	21.0	10.4
	957	10.0	18.5	20.0	97		1896	10.2	21.8	12.0
	1977	10.5	21.4	20.8	106		2245	9.4	18.2	10.4
	2413	10.0	20.2	20.7	102		2375	10.1	20.1	11.8
FARMERS FERTILIZER COMPANY, TEXARKANA, TEXAS							2429	10.5	20.4	10.2
Mule Brand Fertilizer 0-20-20							2458	10.8	19.7	10.2
Guaranteed	0.0	20.0	20.0				2490	10.9	20.1	10.0
	2485	0.0	19.7	20.4	100		2493	10.1	20.1	10.2
Mule Brand Fertilizer 8-8-8							2580	10.4	20.1	10.1
Guaranteed	8.0	8.0	8.0				Mean	10.3	20.4	10.5
	725	8.3	8.0	8.2	104		Coef. Var.	3.5	3.9	4.9
	1311	8.0	8.8	8.0	104	FERD STAFFEL CO., SAN ANTONIO, TEXAS				
Mule Brand Fertilizer 10-20-0						Staffel's Lawn & Garden Food 8-12-4				
Guaranteed	10.0	20.0	0.0			Guaranteed	8.0	12.0	4.0	
	1354	10.6	21.0	0.0	106		2102	10.4	14.6	4.0
	1361	10.0	17.1	0.0	92		2271	8.2	12.0	4.1
Mule Brand Fertilizer 6-12-6						W. R. GRACE & CO., MEMPHIS, TENN.				
Guaranteed	6.0	12.0	6.0			Grace Urea Prills 45-0-0				
	726	6.7	11.6	5.2	102	Guaranteed	45.0	0.0	0.0	
	1312	7.0	12.6	6.5	110		1227	45.1	0.0	0.0
	2430	6.3	12.0	7.0	104	FORD MOTOR COMPANY, DEARBORN, MICHIGAN				
Mule Brand Fertilizer 10-20-10						Ford Diammonium Phosphate 21-53-0				
Guaranteed	10.0	20.0	10.0			Guaranteed	21.0	53.0	0.0	
	724	10.3	21.3	10.1	105		500	21.1	53.4	0.0
	731	10.1	20.9	10.0	103	GILMER COTTON OIL & FERTILIZER COMPANY, TEXAS				
	1539	10.3	20.2	10.8	103	Texas Longhorn 8-8-8				
Mule Brand Fertilizer 0-20-0						Guaranteed	8.0	8.0	8.0	
Guaranteed	0.0	20.0	0.0				1390	9.3	8.4	9.1
	297	0.0	20.1	0.0	101		1519	7.5	10.3	9.8
	304	0.0	20.0	0.0	100		1522	9.0	9.1	9.3
	925	0.0	20.0	0.0	100	Texas Longhorn 12-12-12				
	1362	0.0	21.6	0.0	108	Guaranteed	12.0	12.0	12.0	
Fafco Fertilizer 8-8-8							1509	11.5	14.0	12.8
Guaranteed	8.0	8.0	8.0			Texas Longhorn 6-12-6				
	1516	8.5	8.1	9.3	107	Guaranteed	6.0	12.0	6.0	
	1521	8.8	9.6	9.1	114		332	6.9	12.0	6.0
	1537	8.5	9.6	9.9	114		1391	7.5	12.7	6.8
	1538	8.4	9.6	8.6	111		1520	6.1	13.8	7.2
	2484	8.1	8.1	8.4	102		1732	7.2	13.3	6.8
Mean	8.5	9.0	9.1			Texas Longhorn 10-20-10				
Coef. Var.	2.9	9.1	6.5			Guaranteed	10.0	20.0	10.0	
Fafco Fertilizer 6-12-6							1518	10.0	21.4	11.6
Guaranteed	6.0	12.0	6.0				1817	10.1	24.0	8.8
	1517	7.3	10.8	6.6	105		2089	8.1	17.1	12.8
	1527	7.2	12.8	7.2	114					

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	
Mission Brand 10-20-10	Guaranteed	10.0	20.0	10.0		
	227	8.9	20.3	10.0	97	
	327	9.6	20.1	10.0	99	
	2303	10.2	20.4	10.3	103	
PASTURE GRAIN & MILLING COMPANY, DOWNSFIELD, TEXAS						
Liquid Fertilizer 13-13-0	Guaranteed	13.0	13.0	0.0		
	1847	14.6	13.6	0.0	110	
Liquid Fertilizer 10-15-5	Guaranteed	10.0	15.0	5.0		
	1849	9.1	15.0	5.7	97	
	2283	9.3	14.2	5.2	95	
	Mean	4.5	10.1	10.6		
Coef. Var.	15.6	7.7	8.7			
Liquid Fertilizer 4-10-10	Guaranteed	4.0	10.0	10.0		
	1836	4.1	10.8	10.8	107	
	1841	4.2	9.4	10.9	101	
	1842	4.8	11.5	9.3	112	
	1848	4.4	10.5	11.5	109	
	1851	4.1	9.5	11.2	102	
	1854	4.1	9.6	11.6	103	
	2278	4.2	10.1	10.5	104	
	2282	4.2	10.1	10.6	104	
	2538	6.4	9.0	8.7	110	
2540	4.4	10.9	11.0	110		
Mean	4.5	10.1	10.6			
Coef. Var.	15.6	7.7	8.7			
Liquid Fertilizer 32-0-0	Guaranteed	32.0	0.0	0.0		
	1989	31.4	0.0	0.0	99	
	2536	31.2	0.0	0.0	98	
	Mean	8.4	23.5	0.0		
Coef. Var.	2.7	5.9	0.0			
WELLS FERTILIZER COMPANY, FT. WORTH, TEXAS						
Turf Special 10-5-5	Guaranteed	10.0	5.0	5.0		
	484	10.0	5.0	5.0	100	
	2272	10.6	5.0	5.2	105	
	Mean	10.1	5.0	5.1		
Coef. Var.	1.2	0.0	0.0			
WELLS LABORATORIES, BAY CITY, TEXAS						
Master-Gro 8-16-8	Guaranteed	8.0	16.0	8.0		
	710	7.4	26.7	8.0	131	
	711	6.2	22.0	6.2	107	
WELLS LABORATORIES, BAY CITY, TEXAS						
Mission Brand Fertilizer 6-10-4	Guaranteed	6.0	10.0	4.0		
	608	7.4	10.2	4.5	113	
	Mean	6.0	10.0	4.0		
	Coef. Var.	1.2	0.0	0.0		
	Mission Brand Fertilizer 14-10-4	Guaranteed	14.0	10.0	4.0	
		610	13.2	10.8	4.0	99
		621	14.0	10.8	4.3	103
		Mean	14.0	10.0	4.0	
		Coef. Var.	1.2	0.0	0.0	

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	
Mission Brand Fertilizer 32-0-0	Guaranteed	32.0	0.0	0.0		
	623	32.0	0.0	0.0	100	
	Mean	32.0	0.0	0.0		
Coef. Var.	0.0	0.0	0.0			
Mission Brand Fertilizer 8-20-0	Guaranteed	8.0	20.0	0.0		
	609	8.2	21.6	0.0	106	
	622	9.2	20.6	0.0	108	
	Mean	8.5	20.7	0.0		
Coef. Var.	1.2	0.0	0.0			
B. L. HENDERSON & SONS, INC., HOUSTON, TEXAS						
Shur-Crop Brand 10-20-10	Guaranteed	10.0	20.0	10.0		
	2147	9.6	20.4	11.9	102	
Shur-Crop Brand 12-24-12	Guaranteed	12.0	24.0	12.0		
	647	12.0	24.0	12.0	100	
Shur-Crop Brand 10-10-5	Guaranteed	10.0	10.0	5.0		
	635	9.5	10.0	5.0	98	
	1476	12.8	17.9	4.5	144	
Shur-Crop Brand 24-16-8	Guaranteed	24.0	16.0	8.0		
	1475	23.3	17.7	9.3	103	
Shur-Crop Brand Urea 46-0-0	Guaranteed	46.0	0.0	0.0		
	2236	46.3	0.0	0.0	101	
	Mean	46.1	0.0	0.0		
Coef. Var.	0.7	0.0	0.0			
Shur-Crop Brand 16-20-0	Guaranteed	16.0	20.0	0.0		
	648	13.5	21.5	0.0	95	
	1477	16.7	21.2	0.0	106	
	1620	16.5	25.0	0.0	114	
Mean	16.7	21.9	0.0			
Coef. Var.	1.2	0.0	0.0			
HI-YIELD FERTILIZER CO., BONHAM, TEXAS						
Hi-Yield Brand 8-8-8	Guaranteed	8.0	8.0	8.0		
	69	8.0	10.0	8.0	109	
	342	7.7	8.2	8.2	100	
	1327	8.0	11.1	9.2	116	
	2399	7.9	11.6	8.6	116	
	2582	8.0	7.8	7.8	99	
	Mean	7.9	9.7	8.4		
	Coef. Var.	1.3	17.4	6.7		
	Hi-Yield Brand 10-20-0	Guaranteed	10.0	20.0	0.0	
		365	10.0	20.2	0.0	101
522		9.1	20.7	0.0	99	
716		9.4	20.7	0.0	100	
1364		10.3	20.6	0.0	103	
1441		10.1	19.5	0.0	100	
1543		10.6	21.0	0.0	106	
1752		10.1	23.0	0.0	109	
2247		11.5	20.2	0.0	107	
Mean		10.1	20.7	0.0		
Coef. Var.	7.2	4.9	0.0			
Hi-Yield Brand 6-12-6	Guaranteed	6.0	12.0	6.0		
	225	6.4	12.2	6.4	105	
	322	7.4	12.0	6.5	110	
	364	7.2	12.1	6.1	109	
	369	7.0	12.3	6.3	109	
	1260	6.7	12.3	6.3	107	
	1283	6.3	13.2	6.6	109	
	1335	5.6	12.8	6.0	101	
	1789	6.9	15.0	6.1	119	
	1794	8.0	16.1	6.6	131	
1900	7.2	15.7	7.2	126		
2165	6.4	12.3	6.4	105		
Mean	6.8	12.5	6.3			
Coef. Var.	1.2	0.0	0.0			

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Hi-Yield Brand 6-12-6										
	2248	7.0	14.8	7.1	121		351	0.0	20.1	0.0
Mean		6.8	13.4	6.5			2249	0.0	20.4	0.0
Coef. Var.		9.0	11.5	5.6		Hi-Yield Brand 0-46-0				
Hi-Yield Brand 10-20-10						Guaranteed		0.0	46.0	0.0
Guaranteed		10.0	20.0	10.0		1414		0.0	46.0	0.0
22		9.7	20.0	9.8	99	2254		0.0	46.9	0.0
68		10.1	20.0	10.4	101	2317		0.0	46.2	0.0
103		10.0	22.7	10.4	108	Minor L 10-20-5				
138		10.0	20.2	10.1	101	Guaranteed		10.0	20.0	5.0
241		10.2	20.4	10.1	103	266		10.0	20.8	5.0
306		10.0	20.6	10.1	102	1177		11.1	20.9	5.3
323		10.0	20.2	10.3	101	1363		10.8	22.3	5.2
341		10.0	20.1	10.4	101	1440		10.5	21.0	6.0
352		9.7	20.0	10.0	99	2528		10.0	20.1	5.0
366		8.8	20.4	10.2	97	Mean		10.5	21.0	5.3
371		10.0	20.1	10.1	101	Coef. Var.		4.6	3.8	7.8
715		10.0	21.1	8.2	101	Ferti-Lome Brand Lawn & Garden 6-10-4				
917		9.7	20.0	10.8	99	Guaranteed		6.0	10.0	4.0
1008		10.0	20.0	10.1	101	663		6.0	10.0	4.0
1259		9.3	21.8	11.4	104	1750		6.2	12.0	4.0
1272		8.9	20.1	10.2	97	2506		6.2	12.0	4.6
1282		9.4	22.2	10.4	104	2548		6.1	11.1	5.5
1299		9.7	22.2	10.6	106	2590		6.2	10.2	4.3
1326		10.1	23.4	10.1	109	Mean		6.1	11.1	4.5
1349		8.8	22.5	10.0	102	Coef. Var.		1.6	8.6	13.8
1533		8.8	23.3	10.1	104	Sunset Lawn & Garden Plant Food 5-10-5				
1541		9.8	24.0	10.9	111	Guaranteed		5.0	10.0	5.0
1705		10.1	21.3	10.0	104	1569		5.1	10.3	6.8
1711		9.2	23.7	10.4	107	Creel Brand Fish Pond Fertilizer 20-20-5				
1718		12.0	22.6	11.9	117	Guaranteed		20.0	20.0	5.0
1747		9.4	24.6	10.1	110	1048		16.1	17.3	5.2
1753		10.1	22.3	10.2	107	INTERNATIONAL MINERAL & CHEMICAL CORPORATION TEXARKANA, TEXAS				
1790		9.7	23.7	10.8	110	International Fertilizer 8-8-8				
1899		9.4	21.6	10.4	103	Guaranteed		8.0	8.0	8.0
1957		10.1	20.8	10.1	103	177		7.6	8.8	8.0
2103		10.1	20.7	10.4	103	182		8.0	8.5	8.2
2111		10.1	20.7	10.9	104	214		8.1	8.5	8.0
2164		10.1	20.4	11.0	103	220		8.0	8.3	8.2
2238		10.1	20.4	11.9	104	236		8.4	8.1	8.0
2250		9.7	21.5	11.3	105	346		8.1	8.2	8.4
2409		9.8	19.1	10.1	97	782		8.0	8.1	8.6
2436		10.3	20.1	10.7	103	936		8.1	8.7	8.6
2494		10.1	20.4	10.4	102	954		8.6	11.9	8.2
2565		9.9	21.3	9.3	102	1001		7.4	8.5	8.2
2581		9.5	21.8	10.1	102	1339		7.0	11.4	8.7
2593		9.7	20.9	12.0	104	1345		8.0	8.9	9.2
Mean		9.8	21.3	10.4		2244		8.2	8.2	8.6
Coef. Var.		5.4	6.4	6.4		2358		8.1	8.3	8.0
Hi-Yield Brand 5-10-10						2371		7.9	8.1	8.2
Guaranteed		5.0	10.0	10.0		2398		8.0	8.1	8.1
2410		6.1	12.9	10.4	122	Mean		8.0	8.8	8.3
Hi-Yield Brand 16-20-0						Coef. Var.		4.7	13.1	4.0
Guaranteed		16.0	20.0	0.0		International Fertilizer 10-20-0				
295		15.0	20.4	0.0	98	Guaranteed		10.0	20.0	0.0
367		14.9	20.2	0.0	97	1412		10.1	21.9	0.0
743		15.1	20.1	0.0	98	International Fertilizer 6-12-6				
912		15.7	21.6	0.0	103	Guaranteed		6.0	12.0	6.0
918		14.4	20.7	0.0	97	173		6.6	12.2	7.4
1413		15.9	24.8	0.0	111	223		6.0	12.3	6.5
1439		15.0	21.3	0.0	100	319		6.8	12.2	7.0
1793		14.1	24.3	0.0	104	784		6.6	12.0	6.6
2166		14.6	18.7	0.0	93	955		7.4	14.0	7.0
Mean		15.0	21.3	0.0		1000		8.3	16.8	10.4
Coef. Var.		3.8	9.3	0.0		1893		7.0	15.8	8.7
Hi-Yield Brand 0-20-0										
Guaranteed		0.0	20.0	0.0						
307		0.0	20.0	0.0	100					

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	
International Fertilizer 6-12-6	2190	6.5	11.8	6.6	104	
	2360	6.6	12.1	6.0	105	
	2373	6.6	11.5	6.4	103	
	2412	6.7	11.9	6.7	106	
	2457	6.8	14.5	10.4	125	
	2608	5.3	14.2	9.5	118	
	Mean	6.7	13.2	7.6		
	Coef. Var.	10.2	13.0	20.4		
	International Fertilizer 10-20-10	Guaranteed	10.0	20.0	10.0	
		172	10.0	20.6	10.1	102
194		9.8	20.4	10.0	101	
219		10.0	20.5	10.4	102	
221		10.2	20.1	10.3	102	
226		10.0	20.1	10.6	101	
235		10.0	20.0	10.0	100	
314		10.0	20.2	10.3	101	
337		9.8	20.0	10.2	100	
343		9.8	20.2	10.2	100	
345		10.5	20.2	10.1	103	
373		10.0	20.3	10.2	101	
781		10.0	20.5	10.4	102	
928		10.0	20.0	10.7	101	
934		10.2	20.7	10.3	103	
953		10.5	20.0	10.5	103	
959		10.0	19.7	10.0	100	
971		10.3	20.0	10.4	102	
1314		9.7	20.9	10.1	102	
1336		9.6	20.5	10.2	100	
1343		9.8	20.3	10.5	101	
2202		9.9	19.6	11.0	100	
2217		9.6	20.4	10.7	101	
2242		9.7	18.9	10.7	97	
2243		10.2	19.8	10.4	101	
2365		9.3	20.1	10.4	99	
2370		8.8	20.4	12.1	100	
2394		9.3	20.3	11.4	100	
2397	8.9	20.4	10.1	97		
2424	9.1	21.3	10.1	100		
Mean	9.8	20.2	10.4			
Coef. Var.	4.2	2.1	4.3			
International Fertilizer 5-10-10	Guaranteed	5.0	10.0	10.0		
	783	5.2	10.6	10.0	104	
	1344	5.2	11.6	10.3	110	
International Fertilizer 6-12-12	Guaranteed	6.0	12.0	12.0		
	2374	6.4	11.7	12.9	103	
International Fertilizer 5-20-20	Guaranteed	5.0	20.0	20.0		
	1331	5.1	21.4	20.0	105	
International Fertilizer 16-20-0	Guaranteed	16.0	20.0	0.0		
	1411	14.1	22.4	0.0	99	
International 0-20-0	Guaranteed	0.0	20.0	0.0		
	756	0.0	20.6	0.0	103	
	927	0.0	20.7	0.0	104	
International Rainbow Fertilizer 10-10-10	Guaranteed	10.0	10.0	10.0		
	336	9.8	10.2	10.0	100	
	339	10.1	10.2	10.6	103	
	935	10.0	10.0	10.0	100	
	960	9.5	10.5	9.0	98	

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
International Fertilizer 6-12-6	1330	9.6	11.0	10.4	102
	Mean	9.8	10.4	10.0	
	Coef. Var.	2.5	3.7	6.2	
International Rainbow Fertilizer 7-14-7	Guaranteed	7.0	14.0	7.0	
	188	7.0	14.2	7.0	101
	215	7.2	14.2	7.0	102
	937	7.1	14.3	7.2	102
	956	7.3	14.0	7.0	102
	972	7.5	15.1	7.5	108
	1328	7.2	14.1	7.4	103
	1338	7.3	14.0	7.8	103
	1785	7.3	14.3	7.6	104
	1891	7.3	15.0	9.0	109
International Rainbow Fertilizer 10-20-10	Guaranteed	10.0	20.0	10.0	
	222	10.0	20.0	10.8	102
	228	9.5	20.3	10.1	99
	999	10.0	20.0	10.2	101
	1337	10.0	20.3	10.8	102
International Rainbow Fertilizer 6-12-12	Guaranteed	6.0	12.0	12.0	
	1320	6.0	12.0	12.4	101
International Rainbow Fertilizer 10-20-5	Guaranteed	10.0	20.0	5.0	
	344	9.7	20.3	5.3	100
INTERNATIONAL MINERALS & CHEMICAL CORP., FORT WORTH, TEXAS					
International Fertilizer 8-8-8	Guaranteed	8.0	8.0	8.0	
	983	8.4	13.9	6.6	125
	1525	8.9	9.3	10.2	116
	1786	7.9	9.0	8.1	104
	1799	8.1	8.7	8.5	105
	2154	6.8	9.8	8.1	101
	2189	8.1	9.1	8.5	107
	Mean	8.0	10.0	8.3	
	Coef. Var.	8.6	19.7	13.8	
	International Fertilizer 10-20-0	Guaranteed	10.0	20.0	0.0
128		10.1	20.0	0.0	
280		10.4	20.0	0.0	102
353		10.1	20.0	0.0	101
394		10.1	20.1	0.0	101
569		9.5	20.1	0.0	99
1366		7.9	19.7	0.0	91
1669		9.7	20.1	0.0	99
1766		7.6	20.8	0.0	92
2030		9.7	20.9	0.0	102
2115		9.5	18.9	0.0	95
Mean		9.5	20.1	0.0	
Coef. Var.	10.0	2.7	0.0		
International Fertilizer 6-12-6	Guaranteed	6.0	12.0	6.0	
	268	7.0	12.4	6.0	108
	407	6.0	12.1	6.0	101
	571	6.5	12.1	6.0	104
	673	6.2	12.1	6.0	102
	843	6.1	12.2	6.0	102
	982	6.6	12.0	6.0	104
	1252	6.5	12.6	6.7	108

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
International Fertilizer 6-12-6										
	1454	6.2	12.3	6.0	103		2153	10.3	21.3	10.7
	1493	6.5	12.5	7.2	108		2187	9.7	20.9	10.3
	1501	7.2	14.7	9.4	126		2234	10.5	18.1	10.0
	1627	6.1	12.2	6.6	103		2354	10.1	19.9	8.3
	1881	6.1	14.0	7.0	112		2437	10.1	20.1	10.4
	1978	6.1	13.1	6.1	106		2443	10.1	20.1	10.1
	2013	5.4	12.4	6.8	100		2529	10.1	22.0	10.7
	2031	5.8	12.1	6.6	101		2544	9.6	20.7	11.0
	2081	5.4	12.0	6.6	98		2586	10.1	21.3	10.2
	2259	7.1	12.3	6.4	109	Mean		10.0	20.5	10.2
	2353	5.4	12.1	6.4	98	Coef. Var.		3.3	3.6	6.2
Mean		6.2	12.5	6.5		International Fertilizer 5-10-10				
Coef. Var.		8.6	5.8	12.3		Guaranteed		5.0	10.0	10.0
International Fertilizer 10-20-10							1798	5.1	10.5	10.1
Guaranteed	10.0	20.0	10.0			1944	5.2	12.3	13.6	
19	9.8	19.4	10.4	99		1980	5.3	11.8	9.1	
23	10.1	20.0	8.6	99		2188	5.6	12.3	10.6	
59	9.4	21.1	10.2	101		2463	5.1	10.1	8.4	
73	10.0	20.0	10.2	101	Mean		5.3	11.4	10.4	
90	9.4	21.3	10.0	101	Coef. Var.		3.8	9.1	19.3	
93	10.0	20.5	10.0	102	International Fertilizer 3-12-12					
113	9.7	20.6	11.0	102	Guaranteed		3.0	12.0	12.0	
129	9.4	20.5	10.1	100	1831		3.4	14.3	12.1	
133	10.0	20.8	10.0	102	International Fertilizer 5-20-20					
144	10.0	20.0	10.0	100	Guaranteed		5.00	20.0	20.0	
264	10.3	20.0	10.1	102	1682		5.4	21.9	20.1	
269	10.0	20.8	10.1	103	International Fertilizer 16-20-0					
275	10.0	20.4	10.0	101	Guaranteed		16.0	20.0	0.0	
285	9.7	20.1	10.0	100	60		14.2	20.0	0.0	
308	9.7	20.3	10.0	100	354		16.0	20.1	0.0	
358	10.0	20.0	10.3	101	393		16.0	20.1	0.0	
375	9.6	20.3	10.1	100	406		16.9	20.6	0.0	
405	10.0	20.0	10.3	101	490		16.1	20.0	0.0	
449	9.7	20.7	10.9	102	691		15.4	21.8	0.0	
570	9.2	20.1	10.0	98	696		15.4	20.1	0.0	
700	10.1	20.9	10.0	103	747		16.0	18.0	0.0	
746	10.1	20.0	10.0	101	902		15.0	20.0	0.0	
757	9.6	20.2	10.4	100	905		15.1	20.3	0.0	
764	11.0	20.0	10.0	104	920		13.8	21.0	0.0	
794	10.4	20.7	10.0	104	1028		16.0	21.4	0.0	
799	10.2	20.4	8.1	100	1453		14.7	21.4	0.0	
1046	9.5	20.4	10.0	100	1628		16.0	21.0	0.0	
1054	10.0	20.0	10.3	101	1662		15.2	21.9	0.0	
1251	10.8	19.1	10.0	101	1664		16.3	20.8	0.0	
1253	10.0	20.4	10.0	101	1805		15.3	22.4	0.0	
1281	10.1	20.2	10.1	101	1885		16.2	22.8	0.0	
1298	10.4	19.3	10.0	100	1886		15.2	22.4	0.0	
1407	10.4	20.8	10.0	104	1983		11.7	23.5	0.0	
1422	10.3	20.6	10.2	103	2018		14.6	21.5	0.0	
1492	10.6	20.1	11.3	105	2092		15.6	20.1	0.0	
1502	10.0	20.7	10.1	102	2471		16.2	20.1	0.0	
1524	9.8	19.2	11.2	99	Mean		15.3	20.9	0.0	
1530	10.1	20.6	11.3	104	Coef. Var.		7.1	5.8	0.0	
1547	10.1	21.1	10.2	104	International Fertilizer 13-39-0					
1629	10.2	21.0	10.2	104	Guaranteed		13.0	39.0	0.0	
1686	10.1	21.1	10.1	104	481		14.0	34.8	0.0	
1714	10.1	20.9	11.1	104	1026		12.1	37.5	0.0	
1736	10.1	20.8	10.2	103	1029		13.0	39.1	0.0	
1806	9.7	21.0	10.2	102	2017		13.3	39.4	0.0	
1832	10.4	22.0	9.4	106	2318		11.0	37.3	0.0	
1880	10.0	22.6	11.3	109	Mean		12.7	37.6	0.0	
1895	10.2	21.0	11.6	106	Coef. Var.		9.1	4.9	0.0	
1943	10.3	20.0	10.0	102	International 0-20-0					
1979	10.1	21.6	11.7	107	Guaranteed		0.0	20.0	0.0	
2014	9.4	20.7	10.3	100	33		0.0	20.8	0.0	
2022	10.3	21.8	10.0	106	408		0.0	20.2	0.0	
2093	10.1	20.1	10.1	101						
2105	10.1	20.1	10.4	102						
2116	10.1	20.1	10.8	102						

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
	699	0.0	20.1	0.0	101
	1024	0.0	20.0	0.0	100
	1025	0.0	21.0	0.0	105
	1367	0.0	20.2	0.0	101
	2094	0.0	20.7	0.0	104
	2270	0.0	20.9	0.0	105
	2330	0.0	20.4	0.0	102
	2356	0.0	20.5	0.0	103
Mean	0.0	20.5	0.0		
Coef. Var.	0.0	1.7	0.0		
International Triple Superphosphate 0-46-0					
Guaranteed	0.0	46.0	0.0		
1754	0.0	48.1	0.0	105	
1757	0.0	46.9	0.0	102	
International Fertilizer 0-52-0					
Guaranteed	0.0	52.0	0.0		
2600	0.0	54.8	0.0	105	
International Rainbow Fertilizer 0-16-8					
Guaranteed	0.0	16.0	8.0		
24	0.0	16.2	8.7	103	
1467	0.0	17.3	8.4	108	
2329	0.0	16.6	8.2	104	
2503	0.0	16.1	8.0	101	
International Rainbow Fertilizer 10-10-10					
Guaranteed	10.0	10.0	10.0		
1045	10.0	15.0	9.0	115	
1529	10.0	12.9	10.7	111	
1535	10.0	11.6	10.1	106	
1761	8.9	13.6	9.6	106	
1797	9.5	11.1	10.1	102	
Mean	9.7	12.8	9.9		
Coef. Var.	5.0	12.2	6.4		
International Rainbow Fertilizer 7-14-7					
Guaranteed	7.0	14.0	7.0		
25	7.0	14.2	7.6	102	
74	6.7	14.1	7.0	99	
89	7.0	15.2	7.4	105	
94	7.0	14.6	7.3	103	
265	7.1	14.2	7.0	102	
274	7.1	14.2	7.9	103	
451	7.0	14.0	7.2	101	
454	7.2	14.1	7.0	102	
489	7.0	14.1	7.6	102	
547	7.5	14.1	7.0	104	
745	8.1	14.2	7.0	107	
753	7.9	14.6	7.4	108	
1023	7.7	14.3	7.0	105	
1044	7.0	14.0	7.0	100	
1052	7.3	14.8	7.0	105	
1144	7.0	14.1	7.2	101	
1254	7.0	14.3	7.6	103	
1443	7.0	15.2	7.0	105	
1500	7.2	14.2	13.4	114	
1546	7.1	14.1	6.4	100	
1585	7.0	14.6	7.5	104	
1626	7.2	15.0	5.5	102	
1663	7.1	14.1	7.0	101	
1665	6.6	14.7	7.2	101	
1670	6.8	13.1	7.0	96	
1763	7.1	15.0	6.5	104	
1807	7.6	15.2	7.5	109	
1833	7.7	15.9	7.0	111	
1873	7.1	15.2	7.4	106	
2026	7.7	13.4	7.5	103	
2075	8.9	16.3	9.8	124	

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
	2220	6.4	14.1	7.9	99
	2319	7.0	14.1	7.3	101
	2327	7.7	13.6	7.1	103
	2496	7.1	14.1	7.1	102
	2501	9.1	12.8	7.0	107
	2530	7.6	15.1	5.9	106
Mean	7.7	14.4	7.4		
Coef. Var.	7.5	4.8	16.4		
International Rainbow Fertilizer 10-20-10					
Guaranteed	10.0	20.0	10.0		
1648	9.3	20.2	10.2	99	
2110	10.0	20.3	10.4	102	
2320	9.0	19.8	10.2	96	
International Rainbow Fertilizer 6-12-12					
Guaranteed	6.0	12.0	12.0		
91	6.2	12.4	12.0	96	
International Rainbow Fertilizer 16-8-8					
Guaranteed	16.0	8.0	8.0		
2028	13.9	11.5	9.0	103	
2076	14.3	9.4	8.5	98	
2109	15.2	8.4	9.1	100	
International Rainbow Fertilizer 10-10-5					
Guaranteed	10.0	10.0	5.0		
1427	10.0	10.6	5.8	104	
2077	10.1	10.1	5.6	102	
International Rainbow Fertilizer 10-20-5					
Guaranteed	10.0	20.0	5.0		
88	9.3	20.6	5.2	100	
284	9.1	20.6	5.1	99	
450	10.1	20.2	5.1	102	
455	8.9	20.1	5.5	97	
558	9.7	20.3	5.6	101	
568	10.3	19.6	5.2	101	
1143	10.8	20.0	5.3	104	
1156	10.0	20.0	5.8	102	
1175	9.4	20.2	5.5	99	
1181	9.7	20.8	5.3	102	
1442	10.3	22.0	5.9	108	
1545	9.7	21.1	6.6	104	
1575	10.0	22.0	5.7	107	
1584	10.1	22.3	5.1	107	
1630	10.1	21.0	5.6	104	
1762	10.1	21.7	5.7	106	
2015	10.1	20.4	5.5	103	
2233	9.2	20.0	5.1	97	
2328	9.6	20.2	5.5	100	
2470	10.1	20.4	5.2	102	
Mean	9.8	20.7	5.5		
Coef. Var.	4.8	3.7	6.6		
JACKSONVILLE FERTILIZER COMPANY, JACKSONVILLE, TEXAS					
Groso Brand Fertilizer 8-8-8					
Guaranteed	8.0	8.0	8.0		
939	8.2	8.1	8.6	103	
1006	8.2	9.4	8.0	108	
Groso Brand Fertilizer 6-12-6					
Guaranteed	6.0	12.0	6.0		
739	6.4	12.1	6.4	104	
940	6.5	12.8	6.1	107	
1005	6.4	13.8	6.5	112	
2435	6.3	13.6	7.0	111	
2542	6.0	12.1	7.9	105	
Mean	6.3	12.9	6.8		
Coef. Var.	2.7	6.2	10.3		

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Groso Brand Fertilizer 10-20-10										
Guaranteed		10.0	20.0	10.0			160	12.2	24.2	13.4
78		10.4	20.2	10.0	102		166	12.3	24.1	12.9
211		11.4	20.2	8.2	104		191	11.8	24.6	12.4
732		8.9	22.4	10.0	102		198	12.1	24.1	13.0
734		10.0	19.3	7.5	96		253	12.0	24.0	12.4
738		10.1	22.0	10.0	106		348	12.3	24.2	12.2
938		9.3	21.7	8.2	100		389	12.1	24.4	12.2
968		10.1	20.7	10.0	103		399	12.0	24.0	12.4
1002		9.2	21.9	9.0	101		434	12.0	24.1	12.4
1071		10.2	20.3	10.4	102		463	12.1	24.2	12.0
1487		10.1	20.2	10.7	102		473	12.0	24.0	12.0
1924		10.7	22.4	11.2	101		486	12.0	24.8	13.6
2543		9.9	19.4	11.2	100		526	12.3	24.0	12.7
Mean		10.0	20.9	9.7			529	12.1	24.2	12.8
Coef. Var.		6.7	5.4	12.5			543	12.2	24.5	12.0
							581	12.1	24.2	12.5
							595	12.1	24.3	12.0
KELLY WEBER & COMPANY, INC., LAKE CHARLES, LA.										
Weber King Brand Fertilizer Special 8-8-8										
Guaranteed		8.0	8.0	8.0			596	12.0	24.0	14.0
2197		7.5	9.9	10.4	110		605	12.3	24.0	12.0
							644	12.0	24.2	12.2
							646	11.7	24.0	12.7
Weber King Brand Fertilizer Special 6-12-6										
Guaranteed		6.0	12.0	6.0			650	12.5	24.0	11.0
988		5.1	13.8	8.0	107		785	12.0	24.0	12.2
1616		5.5	18.4	6.1	124		824	12.0	24.1	12.0
2198		6.4	13.3	6.7	110		833	12.0	24.0	12.0
2517		6.2	12.0	9.2	108		1087	11.8	24.6	12.4
							1110	14.4	24.0	12.1
Weber King Brand Fertilizer Special 8-16-8										
Guaranteed		8.0	16.0	8.0			1134	12.2	24.3	12.0
987		8.0	16.8	8.2	103		1139	12.0	24.9	12.1
							1187	12.0	24.2	12.6
							1210	12.0	24.0	12.5
Weber King Brand 0-20-0										
Guaranteed		0.0	20.0	0.0			1213	12.2	25.3	12.0
1615		0.0	21.3	0.0	107		1222	12.2	24.5	12.0
							1241	12.0	24.5	12.6
							1408	12.0	25.5	12.0
KIPFER CHEMICAL COMPANY, HARLINGEN, TEXAS										
K-W Brand Fertilizer 10-20-0										
Guaranteed		10.00	20.0	0.0			1434	12.1	24.5	13.1
554		12.0	20.1	0.0	109		1437	12.1	24.7	14.1
							1444	12.3	25.4	12.3
							1449	11.7	23.3	12.8
							1470	12.2	24.4	12.0
MONSANTO CHEMICAL COMPANY, ST. LOUIS, MO.										
Lion Brand Ammonium Nitrate 33.5-0-0										
Guaranteed		33.5	0.0	0.0			1478	12.1	25.2	12.5
8.		33.6	0.0	0.0	101		1577	12.1	24.8	12.8
32		33.6	0.0	0.0	101		1590	12.0	26.0	12.7
45		34.1	0.0	0.0	102		1618	12.1	25.8	12.4
311		33.8	0.0	0.0	101		1633	12.7	25.0	13.2
333		33.8	0.0	0.0	101		1637	12.1	24.7	12.1
697		33.6	0.0	0.0	101		1640	12.1	24.7	14.5
1691		33.8	0.0	0.0	101		1651	12.1	25.2	13.5
2098		33.7	0.0	0.0	101		1656	12.1	24.6	13.8
2222		33.6	0.0	0.0	101		1751	12.3	26.5	12.5
2308		33.8	0.0	0.0	101		1784	12.5	24.6	12.2
2352		33.6	0.0	0.0	101		1860	12.1	25.9	12.6
2357		33.6	0.0	0.0	101		1948	12.1	25.8	13.2
2426		33.5	0.0	0.0	100		1994	11.6	25.3	12.9
2486		33.6	0.0	0.0	101		2006	12.1	25.2	12.5
Mean		33.7	0.0	0.0			2056	12.0	24.0	12.1
Coef. Var.		0.4	0.0	0.0			2060	11.7	24.5	12.8
							2064	11.7	24.8	13.8
Lion Brand Urea 45-0-0										
Guaranteed		45.0	0.0	0.0			2112	12.1	21.9	13.1
1939		45.3	0.0	0.0	101		2126	12.1	21.8	14.0
							2146	13.0	24.1	13.5
Caustic Potash Technical Grade 0-0-45										
Guaranteed		0.0	0.0	45.0			2152	12.1	24.2	12.6
2603		0.0	0.0	45.1	101		2180	12.3	25.0	12.2
							2336	12.1	24.7	12.2
							2349	12.1	21.0	13.8
							2450	12.1	22.7	12.2
OLIN MATHIESON CHEMICAL CORP., HOUSTON, TEXAS										
Mathieson Ammo Phos 12-24-12 Pelletized Fertilizer										
Guaranteed		12.00	24.0	12.0			2454	12.0	21.1	12.0
52		12.2	24.0	12.4	102		2516	11.9	22.7	13.0
							Mean	12.1	24.3	12.6
							Coef. Var.	2.9	4.0	5.2

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Mathieson Ammonium Sulfate 21-0-0											
Guaranteed		21.0	0.0	0.0			2134	13.1	13.2	15.0	104
448	21.0	0.0	0.0	100		2144	13.1	13.2	15.4	107	
651	21.0	0.0	0.0	100		2181	13.1	13.1	15.6	107	
1202	21.0	0.0	0.0	100		2333	13.3	13.5	13.8	107	
1221	21.0	0.0	0.0	100		2348	13.2	12.7	12.7	103	
1593	21.1	0.0	0.0	101		2534	13.1	14.1	14.4	108	
2186	21.1	0.0	0.0	101		Mean	13.1	13.5	13.8		
2346	21.1	0.0	0.0	101		Coef. Var.	1.9	4.7	4.8		
2511	21.2	0.0	0.0	101		Mathieson Ammo Phos 15-15-15 Pelletized Fertilizer					
Mean	21.1	0.0	0.0			Guaranteed	15.0	15.0	15.0		
Coef. Var.	0.0	0.0	0.0			2055	14.4	16.4	16.2	103	
						2055	2535	14.8	15.1	17.2	102
Mathieson Urea 45-0-0						Mathieson Ammo Phos 15-30-0 Pelletized Fertilizer					
Guaranteed	45.0	0.0	0.0			Guaranteed	15.0	30.0	0.0		
2257	45.3	0.0	0.0	101		390	15.0	30.0	0.0	100	
2332	45.1	0.0	0.0	101		593	14.5	30.1	0.0	99	
2347	45.1	0.0	0.0	101		668	15.4	30.0	0.0	102	
2498	45.4	0.0	0.0	101		852	15.1	30.5	0.0	102	
2504	45.3	0.0	0.0	101		Mathieson Ammo Phos 10-20-10 Pelletized Fertilizer					
Mean	45.2	0.0	0.0			Guaranteed	10.0	20.0	10.0		
Coef. Var.	0.3	0.0	0.0			16	10.1	19.9	10.6	101	
Mathieson 0-46-0						27	10.0	20.8	10.6	103	
Guaranteed	0.0	46.0	0.0			35	10.0	20.3	10.4	102	
1203	0.0	46.9	0.0	102		56	9.8	20.7	10.4	102	
1548	0.0	46.1	0.0	101		82	10.0	21.0	10.9	104	
1796	0.0	46.8	0.0	102		97	10.1	20.2	11.0	103	
2024	0.0	46.2	0.0	101		114	10.1	21.0	10.6	104	
2343	0.0	46.2	0.0	101		135	10.6	20.4	10.0	104	
Mean	0.0	46.4	0.0			156	9.8	20.9	10.4	101	
Coef. Var.	0.0	0.8	0.0			167	10.0	20.4	10.6	102	
Mathieson Ammo Phos 13-13-13 Pelletized Fertilizer						190	10.0	20.8	10.2	103	
Guaranteed	13.0	13.0	13.0			195	10.4	20.1	10.1	102	
75	13.3	13.8	13.6	107		197	10.2	20.8	10.2	103	
161	13.2	13.0	13.2	104		201	10.1	20.4	10.2	102	
165	13.0	13.2	14.0	105		216	10.1	20.4	10.0	102	
202	13.1	13.1	13.8	105		218	10.0	20.2	10.8	102	
335	13.0	13.0	13.2	103		251	10.0	20.0	10.1	101	
425	13.0	13.2	14.2	105		255	10.0	20.0	10.0	100	
430	13.2	13.6	13.6	106		283	10.0	20.1	10.0	101	
487	13.2	13.0	13.4	104		317	10.0	20.0	10.2	101	
520	13.4	13.7	13.6	107		325	10.0	20.0	10.1	101	
531	13.4	13.1	13.6	106		334	10.0	20.4	10.2	102	
604	14.2	13.0	13.2	108		340	9.4	20.4	10.3	100	
786	13.0	13.0	13.2	103		347	10.0	20.1	10.0	101	
819	13.0	13.1	13.2	104		400	10.9	20.2	10.8	105	
888	13.1	13.2	13.6	105		424	10.0	20.0	10.9	102	
948	13.0	13.0	13.2	103		429	10.0	20.4	10.8	102	
1084	12.6	12.5	13.4	101		432	10.0	20.0	10.6	101	
1096	12.8	13.0	13.4	102		446	10.0	20.0	10.6	101	
1103	13.0	13.4	14.4	106		493	10.2	20.1	10.8	102	
1106	12.7	13.9	13.4	105		494	10.1	20.0	10.4	101	
1138	13.0	13.0	13.2	103		515	10.6	20.0	12.2	105	
1183	13.1	13.6	14.0	106		530	10.0	20.1	10.9	102	
1214	13.0	13.5	13.6	105		563	10.0	20.0	11.4	102	
1235	12.7	13.1	13.8	103		566	10.0	20.0	10.6	101	
1240	13.0	13.5	13.6	105		654	10.0	20.0	10.4	101	
1375	13.0	13.1	13.6	104		733	10.0	20.4	10.3	102	
1435	12.7	14.9	15.2	110		816	10.1	21.0	10.4	104	
1479	13.1	13.5	13.8	106		820	10.0	20.1	10.8	102	
1531	13.0	13.5	14.0	106		822	10.1	20.1	10.3	102	
1592	13.1	14.8	14.0	110		825	10.0	20.1	10.1	101	
1828	13.4	15.2	12.2	109		851	10.4	20.0	10.8	103	
1975	13.1	14.5	13.6	108		867	9.7	19.6	11.1	100	
2004	13.4	15.3	13.8	112		887	10.0	20.0	10.4	101	
2035	13.2	13.9	13.6	107		973	10.0	21.7	10.1	105	
2040	13.1	13.1	13.3	104		986	10.2	20.1	12.1	104	
2052	13.1	13.2	14.3	106		994	10.0	20.7	10.2	102	
2074	13.1	13.4	14.0	106		1012	10.0	20.0	11.2	102	
2119	12.7	13.2	14.4	106		1037	10.0	21.0	10.4	103	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	
Mathieson Ammo Phos 10-20-10						Mathieson Ammo Phos 8-32-16 Pelletized Fertilizer					
	1040	10.0	20.0	10.3	101	Guaranteed		8.0	32.0	16.3	
	1085	10.0	20.0	10.6	101	1468		8.1	32.2	16.3	
	1097	9.4	20.3	10.2	99	1614		8.0	32.0	16.3	
	1102	9.4	21.0	11.6	103	1635		8.1	32.9	16.5	
	1107	10.0	20.0	10.2	101	Mathieson Ammo Phos 16-20-0 Pelletized Fertilizer					
	1109	10.2	20.0	10.3	102	Guaranteed		16.0	20.0	0.0	
	1116	10.0	20.0	10.2	101	53		16.0	21.1	0.0	
	1127	10.1	20.1	10.2	101	115		15.7	21.4	0.0	
	1135	10.0	20.0	10.4	101	162		16.2	20.3	0.0	
	1182	10.0	20.5	10.0	102	170		16.1	20.5	0.0	
	1209	10.3	20.0	11.8	104	252		16.5	20.4	0.0	
	1239	10.2	20.0	10.6	102	257		16.4	20.5	0.0	
	1285	10.0	20.2	10.7	102	259		15.7	20.0	0.0	
	1332	10.0	20.6	11.6	104	260		16.3	20.2	0.0	
	1333	9.4	20.6	11.0	101	276		15.5	20.7	0.0	
	1455	9.7	19.6	11.0	100	286		15.3	20.1	0.0	
	1471	10.4	21.6	11.4	108	349		16.0	20.5	0.0	
	1532	10.4	21.0	11.4	106	368		16.0	20.5	0.0	
	1563	10.1	21.2	11.8	106	392		16.0	20.0	0.0	
	1572	10.2	22.2	11.8	109	396		16.0	20.2	0.0	
	1613	10.0	20.2	10.5	102	398		16.0	20.2	0.0	
	1645	9.1	22.9	12.2	107	402		16.1	20.4	0.0	
	1659	10.4	21.8	12.3	109	412		16.3	20.1	0.0	
	1668	10.1	21.0	12.3	106	413		16.0	20.1	0.0	
	1681	10.1	19.9	11.1	102	414		16.0	20.0	0.0	
	1708	10.1	20.8	10.5	103	426		16.0	20.4	0.0	
	1715	10.2	21.9	10.8	107	433		16.9	20.2	0.0	
	1764	10.3	21.9	10.4	107	447		16.0	20.0	0.0	
	1859	10.4	22.9	10.7	110	468		16.0	20.0	0.0	
	1866	10.2	21.3	10.4	105	475		16.3	20.0	0.0	
	1878	10.1	22.0	12.2	109	478		16.0	20.2	0.0	
	1911	10.1	21.9	10.2	106	479		16.0	20.6	0.0	
	1976	10.1	21.2	11.6	106	483		16.0	20.7	0.0	
	2029	10.1	20.4	11.6	104	488		16.1	20.0	0.0	
	2041	10.1	21.3	11.5	106	492		16.0	20.4	0.0	
	2053	10.1	20.1	12.4	104	495		16.1	20.4	0.0	
	2080	10.1	19.6	11.5	102	496		16.1	20.2	0.0	
	2122	10.1	19.8	11.9	103	502		16.2	20.0	0.0	
	2127	9.5	20.0	12.0	101	512		16.4	20.3	0.0	
	2207	10.5	20.3	10.0	103	516		16.3	20.1	0.0	
	2261	10.1	20.0	10.9	102	518		15.5	20.0	0.0	
	2280	9.6	21.0	11.8	104	519		16.1	20.0	0.0	
	2297	10.1	20.1	10.8	102	534		16.0	20.2	0.0	
	2369	10.2	19.4	10.5	100	537		16.0	20.5	0.0	
	2442	10.1	20.1	10.4	102	542		15.0	20.5	0.0	
	2495	10.1	19.8	10.1	100	555		16.3	20.1	0.0	
	2508	10.2	19.6	10.9	101	559		16.3	20.2	0.0	
	2533	10.1	19.6	10.2	100	564		14.7	20.3	0.0	
	2569	10.1	20.1	10.3	101	567		16.2	20.3	0.0	
	2579	10.1	20.4	10.4	102	580		15.6	20.1	0.0	
Mean		10.1	20.5	10.8		590		16.7	20.0	0.0	
Coef. Var.		2.4	3.4	6.1		592		16.0	20.2	0.0	
Mathieson Ammo Phos 10-20-20 Pelletized Fertilizer						594		16.0	20.0	0.0	
	Guaranteed	10.0	20.0	20.0		597		16.3	20.0	0.0	
	199	10.4	20.5	20.0	103	603		16.3	20.3	0.0	
	200	10.0	20.9	20.4	103	633		16.0	20.0	0.0	
	1865	10.2	21.3	20.1	104	634		16.1	20.2	0.0	
	2133	9.2	20.9	22.2	102	643		16.1	20.7	0.0	
Mathieson Ammo Phos 6-24-24 Pelletized Fertilizer						645		16.0	19.7	0.0	
	Guaranteed	6.0	24.0	24.0		649		16.0	20.1	0.0	
	163	6.3	24.1	24.6	102	669		16.0	20.0	0.0	
	168	6.0	24.2	24.0	101	672		16.3	20.1	0.0	
	203	6.1	24.3	24.2	102	683		16.1	20.1	0.0	
	532	6.0	24.0	24.8	101	685		16.1	20.2	0.0	
	2037	6.1	25.9	27.2	109	692		16.0	20.2	0.0	
	2339	6.1	24.2	24.1	101	751		16.0	20.3	0.0	
Mean		6.1	24.5	24.8		788		15.2	20.2	0.0	
Coef. Var.		1.6	2.9	4.9		829		16.1	20.0	0.0	
						832		16.2	20.0	0.0	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60. CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Mathieson Ammo Phos 16-20-0 Pelletized Fertilizer	844	16.0	20.0	0.0	100		2051	16.1	21.7	0.0	105
	853	16.0	20.0	0.0	100		2054	16.1	20.8	0.0	103
	859	16.0	20.3	0.0	101		2063	15.8	21.0	0.0	102
	865	15.4	21.0	0.0	101		2101	16.1	20.1	0.0	101
	919	16.1	20.0	0.0	101		2118	16.1	20.1	0.0	101
	1027	16.0	20.0	0.0	100		2145	16.1	19.6	0.0	100
	1032	16.0	20.0	0.0	100		2151	16.2	20.1	0.0	101
	1035	15.6	20.0	0.0	99		2161	16.2	19.1	0.0	99
	1036	16.0	20.1	0.0	101		2170	16.1	21.1	0.0	103
	1041	16.0	20.0	0.0	100		2179	16.1	19.9	0.0	101
	1053	16.0	20.4	0.0	101		2219	16.1	19.5	0.0	100
	1058	16.0	20.0	0.0	100		2235	16.1	20.1	0.0	101
	1059	16.0	20.0	0.0	100		2258	16.2	20.2	0.0	101
	1086	16.0	20.0	0.0	100		2262	16.1	20.2	0.0	101
	1104	16.0	20.1	0.0	101		2288	16.1	20.2	0.0	101
	1108	15.4	20.5	0.0	100		2322	16.1	20.1	0.0	101
	1111	16.0	21.2	0.0	103		2325	16.1	20.7	0.0	102
	1124	15.8	21.3	0.0	103		2337	16.0	20.1	0.0	101
	1140	16.0	20.0	0.0	100		2341	15.9	20.0	0.0	100
	1166	16.1	20.0	0.0	101		2345	16.1	20.1	0.0	101
	1172	15.6	20.0	0.0	99		2453	16.1	20.1	0.0	101
	1174	16.0	20.1	0.0	101		2455	16.0	19.9	0.0	100
	1180	16.0	20.0	0.0	100		2465	16.1	19.6	0.0	100
	1186	16.3	20.1	0.0	101		2507	16.2	20.1	0.0	101
	1199	15.6	21.6	0.0	103		2509	15.9	21.0	0.0	102
	1204	14.9	26.0	0.0	110		2566	16.1	22.0	0.0	105
	1211	16.0	20.0	0.0	100		2570	16.1	20.9	0.0	103
	1215	16.0	21.2	0.0	103		2596	16.0	19.9	0.0	100
	1223	16.1	20.2	0.0	101		2610	16.1	21.4	0.0	104
	1225	16.0	21.2	0.0	103		Mean	16.0	20.5	0.0	
	1236	16.0	20.6	0.0	102		Coef. Var.	1.8	3.8	0.0	
	1242	16.0	20.7	0.0	102		Mathieson Ammo Phos 11-48-0 Pelletized Fertilizer				
	1255	16.0	20.0	0.0	100		Guaranteed	11.0	48.0	0.0	
	1374	16.2	20.0	0.0	101		169	11.0	48.4	0.0	101
	1389	15.5	23.4	0.0	107		474	11.1	46.2	0.0	98
	1418	16.0	20.9	0.0	103		482	11.2	48.0	0.0	101
	1426	16.1	21.2	0.0	104		599	11.2	48.0	0.0	101
	1428	16.1	21.8	0.0	105		1466	11.6	48.6	0.0	103
	1429	16.1	21.6	0.0	104		1469	11.1	48.2	0.0	101
	1436	16.1	20.5	0.0	102		1571	12.0	49.6	0.0	105
	1438	16.0	21.1	0.0	103		1580	11.3	48.4	0.0	102
	1445	16.0	21.6	0.0	104		1636	11.6	48.3	0.0	102
	1446	15.7	21.1	0.0	102		1642	11.3	49.6	0.0	104
	1450	16.1	20.2	0.0	101		1653	12.4	48.3	0.0	104
	1456	15.7	20.0	0.0	99		1949	11.3	50.3	0.0	105
	1463	16.4	21.6	0.0	105		2150	11.1	48.1	0.0	101
	1465	17.1	21.0	0.0	107		2446	11.1	48.0	0.0	101
	1570	16.1	21.7	0.0	105		2595	11.3	48.1	0.0	101
	1576	15.6	21.8	0.0	103		Mean	11.4	48.4	0.0	
	1583	16.1	21.1	0.0	103		Coef. Var.	3.3	1.9	0.0	
1638	16.1	21.6	0.0	104		Mathieson Ammo Phos 16-48-0 Pelletized Fertilizer					
1639	16.1	21.7	0.0	105		Guaranteed	16.0	48.0	0.0		
1647	16.1	23.4	0.0	109		1619	16.1	49.0	0.0	102	
1652	16.4	20.4	0.0	103		1632	16.4	50.6	0.0	105	
1655	16.2	20.0	0.0	101		Mathieson Ammo Phos 13-39-0 Pelletized Fertilizer					
1658	16.4	20.0	0.0	101		Guaranteed	13.0	39.0	0.0		
1660	16.1	20.6	0.0	102		171	13.1	39.4	0.0	101	
1666	16.2	21.1	0.0	104		248	13.0	39.6	0.0	102	
1667	16.2	20.5	0.0	102		256	13.1	39.2	0.0	101	
1795	16.5	21.1	0.0	105		391	13.1	39.0	0.0	101	
1834	16.1	21.4	0.0	104		401	13.0	39.0	0.0	100	
1856	16.1	21.7	0.0	105		472	13.0	39.0	0.0	100	
1879	16.1	21.1	0.0	103		517	13.1	38.0	0.0	99	
1940	16.1	21.7	0.0	105		527	13.8	39.4	0.0	103	
1954	16.1	21.5	0.0	104		598	13.1	39.2	0.0	101	
1993	16.1	21.5	0.0	104		655	13.0	39.0	0.0	100	
1998	16.1	20.7	0.0	102		787	13.0	39.6	0.0	101	
2001	17.0	21.4	0.0	107		1388	13.0	41.8	0.0	105	
2005	16.0	20.9	0.0	103		1464	13.1	40.9	0.0	104	
2039	15.6	21.8	0.0	103							

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %
Mathieson Ammo Phos 13-39-0 Pelletized Fertilizer						PITTSBURG FERTILIZER COMPANY, PITTSBURG, TEXAS				
	1581	13.0	40.0	0.0	102	Golden Nugget Brand 8-8-8				
	1641	13.8	39.5	0.0	103	Guaranteed	8.0	8.0	8.0	
	1646	13.1	39.0	0.0	101	152	8.7	8.5	8.5	
	1650	13.4	40.1	0.0	103	238	8.5	8.5	8.5	
	1657	13.2	39.6	0.0	102	1322	5.5	10.5	9.2	
	1661	13.2	39.3	0.0	102	1351	5.2	10.9	8.7	
	1783	13.1	41.6	0.0	105	1398	9.8	9.4	8.8	
	1835	13.3	40.3	0.0	103	1742	8.1	15.9	9.0	
	1951	13.1	39.6	0.0	102	1818	8.5	11.0	8.2	
	2263	13.2	39.7	0.0	102	2362	8.1	9.4	9.0	
	2334	13.1	39.7	0.0	102	2396	6.6	11.4	8.0	
	2510	13.2	38.0	0.0	99	2403	7.7	9.8	8.1	
Mean		13.2	39.6	0.0		2488	4.8	11.1	8.5	
Coef. Var.		1.5	2.2	0.0		Mean	7.4	10.6	8.6	
						Coef. Var.	22.1	19.3	4.8	
MISSISSIPPI CHEMICAL COMPANY, YAZOO CITY, MISSISSIPPI						Golden Nugget Brand 12-12-12				
MCC Brand Ammonium Nitrate Fertilizer 33.5-0-0						Guaranteed				
	Guaranteed	33.5	0.0	0.0		1397	13.0	14.6	12.0	
	360	34.1	0.0	0.0	102	1405	12.6	14.9	12.3	
	1953	33.5	0.0	0.0	100	Golden Nugget Brand 10-20-0				
						Guaranteed	10.0	20.0	0.0	
OLIVE SEED & NURSERY, SAN ANGELO, TEXAS						Golden Nugget Brand 6-12-6				
Olive Special Plant Food 10-10-5						Guaranteed				
	Guaranteed	10.0	10.0	5.0		151	7.9	12.2	11.0	
	485	10.0	10.0	2.5	96	1128	7.9	11.5	6.6	
						1352	7.7	13.3	6.9	
OZARK MAHONING COMPANY, TULSA, OKLA.						Golden Nugget Brand 10-20-10				
Ozark 16-20-0						Guaranteed				
	Guaranteed	16.0	20.0	0.0		1743	7.8	12.3	6.9	
	2474	16.2	20.1	0.0	101	1904	6.5	13.4	7.3	
						2363	6.7	13.2	7.4	
Ozark 13-39-0						Golden Nugget Brand 10-20-10				
	Guaranteed	13.0	39.0	0.0		2382	5.7	10.9	10.2	
	2473	12.7	38.6	0.0	99	2404	6.6	12.5	6.9	
						2557	7.0	14.2	8.0	
Ozark 0-52-0						Mean				
	Guaranteed	0.0	52.0	0.0		Coef. Var.	10.9	8.1	20.1	
	2475	0.0	55.2	0.0	107	Golden Nugget Brand 10-20-10				
						Guaranteed	10.0	20.0	10.0	
PHILLIPS PETROLEUM COMPANY, BARTLESVILLE, OKLA.						Golden Nugget Brand 5-10-10				
Phillips 66 Ammonium Nitrate 33.5-0-0						Guaranteed				
	Guaranteed	33.5	0.0	0.0		149	9.3	20.1	10.0	
	372	33.5	0.0	0.0	100	150	9.2	20.1	9.8	
	1950	33.6	0.0	0.0	101	153	9.3	21.0	10.2	
	1987	33.7	0.0	0.0	101	243	9.7	20.1	10.0	
	2218	33.6	0.0	0.0	101	315	10.0	20.0	10.0	
	2276	33.9	0.0	0.0	102	318	10.0	20.8	10.0	
	2310	33.5	0.0	0.0	100	924	9.0	20.1	10.0	
	2324	33.5	0.0	0.0	100	1011	9.1	20.0	10.0	
Mean		33.6	0.0	0.0		1061	10.0	18.2	10.4	
Coef. Var.		0.4	0.0	0.0		1321	9.7	21.2	10.1	
						1350	8.7	20.0	10.0	
Phillips 66 Ammonium Sulfate 21-0-0						Golden Nugget Brand 5-10-10				
	Guaranteed	21.0	0.0	0.0		1404	9.2	22.8	9.5	
	1021	21.0	0.0	0.0	100	2302	8.8	18.7	10.3	
	1157	21.4	0.0	0.0	102	2361	8.2	17.1	10.5	
	1381	21.2	0.0	0.0	101	2380	7.7	17.0	11.9	
	1767	21.4	0.0	0.0	102	2527	9.3	15.4	11.0	
	1823	21.1	0.0	0.0	101	2532	10.0	20.2	10.7	
	1955	21.2	0.0	0.0	101	2564	9.8	18.5	12.1	
	2099	21.1	0.0	0.0	101	Mean	9.3	19.5	10.4	
	2277	21.2	0.0	0.0	101	Coef. Var.	6.9	9.0	6.6	
	2285	21.1	0.0	0.0	101	Golden Nugget Brand 5-10-10				
	2499	21.0	0.0	0.0	100	Guaranteed	5.0	10.0	10.0	
	2561	21.1	0.0	0.0	101	237	7.6	10.0	10.0	
	2573	21.0	0.0	0.0	100	2381	5.6	11.5	12.2	
	2597	21.1	0.0	0.0	101	2393	6.2	13.7	11.0	
Mean		21.2	0.0	0.0		2395	5.8	11.4	11.0	
Coef. Var.		0.5	0.0	0.0		2405	5.3	9.9	10.0	
						Mean	6.1	11.3	10.8	
						Coef. Var.	14.8	13.6	8.4	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Golden Nugget Brand 10-20-20	Guaranteed	10.0	20.0	20.0	89	Mean	2441	6.6	10.9	6.1	112
	2392	8.7	19.3	15.0			Coef. Var.	6.6	12.4	6.3	
							6.6	7.1	5.7		
Golden Nugget Brand 16-20-0	Guaranteed	16.0	20.0	0.0	94	Red Star Pelleted Super Flo Brand 10-20-10					
	273	13.5	20.9	0.0		Guaranteed	10.0	20.0	10.0	97	
	1403	11.1	25.7	0.0		70	9.5	19.3	10.1		
	1755	12.2	22.2	0.0		125	9.6	20.1	10.0		
						239	9.4	21.0	10.2		
MENSSEMEN FERTILIZER COMPANY, PLAINVIEW, TEXAS						291	9.1	20.1	10.8		98
Phosphoric Acid 0-53-0						292	10.0	20.0	10.2	101	
Guaranteed	0.0	53.0	0.0	101	299	10.1	21.0	10.0	103		
2469	0.0	53.4	0.0		303	9.0	20.0	10.0	97		
FERTILIZER & CHEMICAL CO., LOS FRESNOS, TEXAS						313	9.4	20.2	10.2	99	
Brand Soludry 20-20-0						316	9.7	20.5	10.1	101	
Guaranteed	20.0	20.0	0.0	100	321	9.5	20.0	10.2	99		
1149	20.0	20.0	0.0		361	9.3	20.0	10.4	98		
Complete Fertilizer 14-14-14						840	9.5	20.0	10.1	99	
Guaranteed	14.0	14.0	14.0		1007	9.5	20.5	10.0	100		
549	14.2	14.1	14.0		1015	9.2	20.4	10.2	99		
1150	14.2	14.8	14.6		1112	9.5	20.0	10.0	99		
1188	14.0	14.7	14.4		1271	9.3	20.2	10.1	98		
STAR FERTILIZER CO., SULPHUR SPRINGS, TEXAS						1313	9.5	20.6	10.6	101	
Pelleted Super Flo Brand 15-15-0						1386	9.2	20.9	10.5	100	
Guaranteed	15.0	15.0	0.0		101	1395	9.7	20.8	10.2	102	
296	15.1	15.0	0.0	1625		10.0	20.8	10.1	103		
Pelleted Super Flo Brand 8-8-8						1737	10.1	21.0	10.2	104	
Guaranteed	8.0	8.0	8.0	1887		8.9	19.8	10.7	97		
740	8.1	8.1	8.0	1894		10.7	20.5	12.5	107		
1114	9.9	9.1	8.1	1898		9.3	23.1	10.4	106		
1962	8.1	9.0	8.7	1963		9.5	18.8	11.0	97		
2592	10.1	9.7	11.0	2000		10.5	20.2	10.3	103		
Pelleted Super Flo Brand 12-12-12						2021	9.4	20.1	13.2	102	
Guaranteed	12.0	12.0	12.0	2078		10.1	19.8	11.1	102		
602	13.4	12.0	8.2	2239	10.0	18.2	11.6	98			
1999	12.1	13.4	12.8	2251	9.4	19.1	10.6	97			
Pelleted Super Flo Brand 10-20-0						2389	10.1	19.8	10.3	101	
Guaranteed	10.0	20.0	0.0	99	2406	10.3	19.4	10.2	100		
290	9.7	20.1	0.0		2425	11.2	18.7	10.1	102		
293	10.1	20.0	0.0		2440	10.1	18.6	10.3	98		
312	11.3	20.2	0.0		2487	9.2	20.3	10.2	98		
754	10.3	20.4	0.0		2513	10.7	18.7	11.0	101		
841	10.5	23.6	0.0		2578	9.7	19.8	10.4	99		
1016	11.2	19.2	0.0		Mean	9.7	20.1	10.5			
1019	10.3	20.0	0.0		Coef. Var.	5.3	4.3	6.4			
1269	10.7	20.1	0.0		Red Star Pelleted Super Flo Brand 12-24-12						
1401	10.5	20.2	0.0		Guaranteed	12.0	24.0	12.0	99		
1542	10.1	20.0	0.0	461	12.0	23.0	12.4				
2079	10.3	19.9	0.0	601	12.5	24.0	12.0				
2300	10.3	20.1	0.0	1996	11.1	21.9	12.0	93			
2305	9.8	18.5	0.0	2050	10.2	25.7	13.5	100			
Mean	10.4	20.2	0.0	Red Star Pelleted Super Flo Brand 5-10-10							
Coef. Var.	4.4	5.7	0.0	Guaranteed	5.0	10.0	10.0	109			
Red Star Pelleted Super Flo Brand 6-12-6						2390	6.4		11.3	6.9	
Guaranteed	6.0	12.0	6.0	2407	6.8	15.4	11.9		141		
240	6.2	12.0	6.0	Red Star Pelleted Super Flo Brand 16-20-0							
254	7.6	12.2	6.0	Guaranteed	16.0	20.0	0.0	99			
1115	6.3	12.7	6.0	9	15.5	20.1	0.0				
1400	6.4	12.1	6.2	300	16.0	20.0	0.0				
1738	6.5	13.8	6.2	362	15.1	20.1	0.0				
1888	6.1	13.3	6.9	386	16.1	20.0	0.0				
1892	6.7	13.3	7.0	460	16.2	20.3	0.0				
2391	6.9	11.6	6.4	600	15.7	20.4	0.0				
2408	6.9	12.1	6.4	755	15.0	20.0	0.0				
				842	16.0	20.8	0.0				
				1017	16.6	19.6	0.0				
				1020	16.5	20.3	0.0				
				1113	16.0	20.0	0.0				

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Red Star Pelleted Super Flo Brand 16-20-0						Smith Douglass Pelleform 15-30-0				
	1266	16.1	20.0	0.0	101	Guaranteed	15.0	30.0	0.0	
	1268	16.1	20.7	0.0	102	2027	11.3	33.9	0.0	
	1270	14.9	20.0	0.0	97	2230	15.4	30.2	0.0	
	1956	16.2	21.9	0.0	105	Smith Douglass Pelleform 10-20-10				
	1961	16.1	22.0	0.0	105	Guaranteed	10.0	20.0	10.0	
	1997	16.4	21.5	0.0	105	57	10.1	20.0	11.0	
	2049	15.3	21.4	0.0	101	98	10.2	20.2	10.1	
	2163	15.7	20.3	0.0	100	183	11.1	20.6	10.0	
	2240	16.1	19.4	0.0	99	192	10.9	20.3	10.0	
	2307	15.4	20.1	0.0	99	229	10.4	20.4	10.2	
	2515	16.4	20.1	0.0	102	556	10.5	20.1	10.1	
Mean		15.9	20.4	0.0		572	10.1	20.4	11.4	
Coef. Var.		3.1	3.4	0.0		737	11.3	23.1	11.4	
Red Star Pelleted Super Flo Brand 8-32-0						814	10.4	23.1	10.1	
Guaranteed		8.0	32.0	0.0		942	12.0	21.7	10.1	
1399		7.5	32.1	0.0	99	965	10.7	22.2	10.1	
Red Star Pelleted Super Flo Brand 13-39-0						1129	10.5	21.4	10.2	
Guaranteed		13.0	39.0	0.0		1231	10.3	20.4	10.8	
462		13.0	39.1	0.0	101	1376	10.0	21.4	11.4	
Red Star Pelleted Super Flo Brand 0-20-0						1503	11.0	23.2	9.8	
Guaranteed		0.0	20.0	0.0		1551	10.3	24.6	15.3	
289		0.0	20.1	0.0	101	1624	10.6	21.0	11.6	
294		0.0	20.2	0.0	101	1693	10.4	21.8	20.2	
302		0.0	20.6	0.0	103	1695	11.0	21.8	10.1	
387		0.0	20.0	0.0	100	1730	10.8	23.0	10.5	
741		0.0	20.2	0.0	101	1746	10.3	22.4	10.4	
1267		0.0	20.5	0.0	103	1801	10.2	22.2	11.0	
1387		0.0	22.1	0.0	111	1861	10.9	23.6	10.4	
1396		0.0	21.1	0.0	106	1925	10.2	22.6	10.4	
Mean		0.0	20.6	0.0		2071	10.6	20.9	12.0	
Coef. Var.		0.0	3.4	0.0		2138	10.5	22.7	11.4	
Red Star Pelleted Vi-Ten 10-10-5						Mean		10.6	21.7	11.2
Guaranteed		10.0	10.0	5.0		Coef. Var.		4.2	5.8	19.2
124		10.0	10.9	5.3	104	Smith Douglass Pelleform 12-24-12				
459		10.0	10.1	5.7	102	Guaranteed		12.0	24.0	12.0
1402		10.9	11.6	5.3	112	193	12.0	24.4	12.0	
1995		11.9	12.0	5.1	118	470	12.2	24.3	10.2	
2025		10.4	12.3	6.6	114	497	12.3	24.1	12.0	
2162		10.2	10.5	5.3	104	631	12.4	24.0	12.2	
2306		9.1	11.6	5.2	102	1105	12.1	24.2	13.4	
2514		10.0	13.4	6.9	116	1131	12.1	22.0	13.5	
2550		11.0	10.1	5.9	108	1193	12.1	25.5	12.6	
Mean		10.4	11.4	5.7		1196	12.1	25.1	12.4	
Coef. Var.		7.6	9.7	11.4		1219	12.3	24.2	12.4	
Red Star Triple Flo Brand 0-46-0						1622	12.1	25.3	12.0	
Guaranteed		0.0	46.0	0.0		1809	11.7	25.8	12.1	
363		0.0	46.5	0.0	101	2062	11.7	26.1	12.1	
2311		0.0	48.4	0.0	106	2069	11.6	24.3	12.7	
SMITH DOUGLASS CO., INC., TEXAS CITY, TEXAS						2139	11.3	24.1	12.1	
Smith Douglass Pelleform 12-12-12						2184	12.4	24.2	12.6	
Guaranteed		12.0	12.0	12.0		2215	11.2	25.0	14.8	
736		12.0	12.2	12.2	101	2231	12.7	24.5	12.0	
1232		13.2	15.2	12.8	115	2574	12.0	25.5	12.1	
1377		13.3	16.0	12.5	118	Mean		12.0	24.6	12.4
2583		12.3	12.7	12.2	104	Coef. Var.		3.2	3.7	7.3
Smith Douglass Pelleform 14-14-14						Smith Douglass Pelleform 10-20-20				
Guaranteed		14.0	14.0	14.0		Guaranteed		10.0	20.0	20.0
1229		13.3	15.6	15.2	103	1802	10.8	22.8	20.0	
1621		14.1	15.9	15.6	107	1814	10.1	23.1	20.8	
1696		13.1	16.2	14.4	103	2159	10.4	21.5	20.0	
2070		14.1	16.3	14.4	107	2266	10.1	22.0	21.2	
Smith Douglass Pelleform 10-20-0						Smith Douglass Pelleform 6-24-24				
Guaranteed		10.0	20.0	0.0		Guaranteed		6.0	24.0	24.0
557		10.7	20.3	0.0	104	1132	7.0	25.0	22.8	
1380		11.2	22.0	0.0	108	1378	7.0	26.1	24.4	
						1694	6.6	25.3	21.8	
						1862	6.9	27.8	24.1	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Smith Douglass Pelleform	7-28-14					Smith Douglass 0-52-0					
Guaranteed	7.0	28.0	14.0			Guaranteed	0.0	52.0	0.0		
1654	7.9	28.8	15.2	107		2571	0.0	53.2	0.0	103	
Smith Douglass Pelleform	16-20-0					SCOPE CHEMICAL CO., BENTON HARBOR, MICHIGAN					
Guaranteed	16.0	20.0	0.0			Tri 40 10-20-10					
469	16.5	20.0	0.0	102		Guaranteed	10.0	20.0	10.0		
480	16.7	20.0	0.0	103		2117	10.8	21.7	11.6	110	
498	12.6	22.2	0.0	94							
573	15.7	20.3	0.0	100		SOUTHWEST CHEMICAL, INC., McALLEN, TEXAS					
664	16.5	21.3	0.0	105		Top Crop Liquid 7-21-0					
815	15.5	21.9	0.0	103		Guaranteed	7.0	21.0	0.0		
1130	16.5	20.3	0.0	103		1159	7.3	21.0	0.0	102	
1192	16.0	21.3	0.0	103							
1197	16.9	21.3	0.0	107		Top Crop Liquid 10-10-5					
1220	16.6	20.3	0.0	103		Guaranteed	10.0	10.0	5.0		
1230	16.0	21.7	0.0	104		628	10.1	10.4	5.4	103	
1233	16.0	21.4	0.0	104							
1379	16.1	22.9	0.0	107		Top Crop Liquid 33-0-0					
1550	16.1	24.1	0.0	110		Guaranteed	33.0	0.0	0.0		
1591	16.1	20.2	0.0	101		626	31.8	0.0	0.0	97	
1623	16.8	22.2	0.0	109		1160	32.3	0.0	0.0	98	
1692	16.8	22.0	0.0	108							
1745	16.1	22.9	0.0	107		Top Crop Liquid 12-15-0					
1800	16.4	23.0	0.0	108		Guaranteed	12.0	15.0	0.0		
1942	16.2	20.5	0.0	102		627	11.7	15.0	0.0	99	
1952	16.1	23.7	0.0	109		1158	11.3	15.1	0.0	98	
2061	16.2	21.5	0.0	105							
2068	16.6	20.5	0.0	104		Top Crop Liquid 0-54-0					
2137	16.1	21.8	0.0	105		Guaranteed	0.0	54.0	0.0		
2185	16.1	21.1	0.0	103		629	0.0	54.6	0.0	102	
2229	16.8	19.1	0.0	101							
2237	17.0	19.1	0.0	102		SOUTHWEST FERTILIZER & CHEMICAL, EL PASO, TEXAS					
2304	16.3	21.8	0.0	106		Sfwkick 8-24-0					
2447	16.6	20.9	0.0	105		Guaranteed	8.0	24.0	0.0		
2452	15.3	24.5	0.0	109		2607	8.5	24.1	0.0	103	
2553	16.5	20.4	0.0	103							
Mean	16.2	21.4	0.0			SPENCER CHEMICAL COMPANY, KANSAS CITY, MO.					
Coef. Var.	4.8	6.3	0.0			Mr. N. Ammonium Nitrate 33.5-0-0					
Smith Douglass Pelleform	16-48-0					Guaranteed	33.5	0.0	0.0		
Guaranteed	16.0	48.0	0.0			142	34.6	0.0	0.0	104	
2576	15.8	46.9	0.0	99		1756	33.6	0.0	0.0	101	
Smith Douglass Pelleform	13-39-0					1947	33.8	0.0	0.0	101	
Guaranteed	13.0	39.0	0.0			Spencer Urea 45-0-0					
1133	13.2	39.4	0.0	102		Guaranteed	45.0	0.0	0.0		
2575	13.1	40.8	0.0	104		2183	45.0	0.0	0.0	100	
Smith Douglass Pelleform Fertilizer	0-46-0										
Guaranteed	0.0	46.0	0.0			Spencer Green 32-0-0					
1612	0.0	47.3	0.0	103		Guaranteed	32.0	0.0	0.0		
2023	0.0	46.2	0.0	101		2604	31.0	0.0	0.0	97	
Smith Douglass 10-20-10											
Guaranteed	10.0	20.0	10.0			SWIFT & COMPANY, HOUSTON, TEXAS					
767	11.1	24.3	10.8	116		Swift's Red Steer 15-15-0					
989	13.5	15.5	10.4	103		Guaranteed	15.0	15.0	0.0		
998	13.3	16.4	10.3	104		1938	11.5	16.3	0.0	90	
1341	10.0	20.9	12.4	106							
1392	10.4	20.0	10.2	102		Swift's Red Steer 8-8-8					
1973	11.2	20.9	12.1	110		Guaranteed	8.0	8.0	8.0		
2091	10.1	20.2	10.7	102		779	7.7	9.5	8.0	105	
2160	10.1	20.7	10.7	103		1489	8.1	8.7	8.4	105	
2267	10.8	21.8	11.8	110		1497	8.4	12.4	8.8	123	
Mean	11.2	20.1	11.0			1523	8.5	10.1	9.0	114	
Coef. Var.	12.0	13.3	7.5			2083	8.0	8.3	9.0	104	
						Mean	8.1	9.8	8.6		
						Coef. Var.	3.9	16.5	5.0		
						Swift's Red Steer 12-12-12					
						Guaranteed	12.0	12.0	12.0		
						2036	10.5	15.3	12.0	103	
						Swift's Rer Steer 10-20-0					
						Guaranteed	10.0	20.0	0.0		
						2476	9.2	19.6	0.0	96	
						2572	9.5	20.2	0.0	99	

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
Swift's Red Steer 10-20-0							913	9.6	20.0	10.0
	583	10.0	20.2	0.0	101		1257	9.4	20.8	10.2
	588	10.0	20.0	0.0	100		1393	9.3	20.0	10.6
	827	9.2	20.3	0.0	98		1490	10.1	24.5	10.4
	835	9.5	20.0	0.0	98		1562	9.7	20.1	9.2
	847	9.4	20.9	0.0	100		1684	9.3	20.6	10.2
	1970	8.8	22.4	0.0	102		1702	10.2	21.1	10.0
Mean		9.5	20.5	0.0			1863	9.5	21.3	10.7
Coef. Var.		4.2	4.2	0.0			1921	10.6	21.6	10.4
							1923	9.7	20.1	10.6
Swift's Red Steer 6-12-6							1969	9.4	21.9	10.2
Guaranteed		6.0	12.0	6.0			2034	9.5	20.7	13.2
	31	6.5	11.8	6.1	103		2298	9.4	20.1	12.0
	84	6.0	12.6	6.0	103		2350	10.1	20.1	12.0
	119	7.0	13.2	6.7	113		2541	9.4	19.6	10.9
	126	6.3	12.4	6.0	104	Mean		9.7	20.5	10.4
	329	6.7	12.0	6.4	106	Coef. Var.		4.0	4.3	9.3
	380	6.0	12.2	6.1	102					
	456	6.4	12.4	6.5	106	Swift's Red Steer 12-24-12				
	525	6.6	12.6	6.3	107	Guaranteed		12.0	24.0	12.0
	582	6.9	12.9	6.0	110		458	12.0	24.0	12.4
	659	6.2	12.2	6.0	103		510	12.0	24.7	12.4
	661	6.6	12.3	6.1	106		2519	12.1	24.0	12.2
	780	6.5	12.5	6.1	106					
	803	7.7	14.6	6.9	124	Swift's Red Steer 5-10-10				
	807	6.6	12.7	6.1	107	Guaranteed		5.0	10.0	10.0
	826	6.0	12.0	6.0	100		81	5.5	11.2	10.1
	834	6.3	12.0	6.7	104		1701	5.1	10.7	10.0
	846	6.6	13.4	6.0	110		1713	6.4	10.9	10.1
	849	6.6	13.2	6.9	111					
	1089	6.7	12.3	5.1	104	Swift's Red Steer 10-20-20				
	1146	6.8	13.1	7.3	113	Guaranteed		10.0	20.0	20.0
	1212	7.1	13.7	6.7	116		1683	7.9	24.2	20.2
	1491	6.5	12.0	7.2	106		2299	9.6	22.2	20.1
	1685	6.1	12.8	7.2	107					
	1922	6.1	14.7	7.4	115	Swift's Red Steer 16-20-0				
	2082	6.3	12.1	8.0	107	Guaranteed		16.0	20.0	0.0
	2351	6.9	13.9	10.7	124		117	15.6	20.0	0.0
	2468	6.6	12.3	6.7	107		395	15.6	20.2	0.0
	2512	6.4	14.1	8.1	116		457	16.2	20.0	0.0
	2518	7.3	13.5	7.0	117		509	13.4	20.3	0.0
Mean		6.6	12.8	6.7			589	14.3	20.1	0.0
Coef. Var.		5.9	6.2	15.1			688	15.1	20.1	0.0
							823	14.6	20.0	0.0
							848	14.2	21.6	0.0
Swift's Red Steer 7-14-7							863	14.6	20.5	0.0
Guaranteed		7.0	14.0	7.0			1057	14.5	22.0	0.0
	2174	6.5	11.7	7.1	90		1145	15.6	20.7	0.0
							1200	15.3	21.5	0.0
Swift's Red Steer 10-20-10							1558	16.3	21.8	0.0
Guaranteed		10.0	20.0	10.0			2176	14.7	20.9	0.0
	34	9.3	19.5	9.8	96	Mean		15.0	20.7	0.0
	43	9.5	20.4	13.9	104	Coef. Var.		5.4	3.6	0.0
	44	9.0	21.5	10.0	100					
	58	10.0	19.3	10.0	99	Swift's Red Steer 0-20-0				
	76	9.4	20.4	10.1	99	Guaranteed		0.0	20.0	0.0
	83	9.8	20.3	10.0	100		491	0.0	20.3	0.0
	127	10.0	20.0	10.4	101					
	326	10.3	20.2	10.0	102	Swift's Minute Man Ammonium Nitrate 33.5-0-0				
	377	9.6	20.3	10.0	100	Guaranteed		33.5	0.0	0.0
	381	9.6	20.0	10.0	99		2459	33.6	0.0	0.0
	660	10.0	20.0	10.0	100					
	662	8.9	20.6	8.4	96	Vigoro for Commercial Growers 10-20-10				
	765	9.4	20.0	10.0	98	Guaranteed		10.0	20.0	10.0
	777	10.0	20.9	10.0	103		508	9.2	20.3	10.4
	778	9.3	20.4	10.1	99		1161	9.5	20.5	10.0
	791	10.0	20.0	10.3	101					
	792	10.3	20.0	10.2	102	Vigoro for St. Augustine Grass 12-6-6				
	797	10.0	20.4	10.1	102	Guaranteed		12.0	6.0	6.0
	828	10.0	20.0	10.3	101		681	11.1	6.5	6.1
	850	9.3	20.1	10.1	98					
	862	9.5	20.0	10.2	99	Brimm 14-14-7				
	901	9.5	20.4	10.1	100	Guaranteed		14.0	14.0	7.0
							1155	13.1	14.0	7.6
							1162	13.1	15.1	7.5

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Blenn 13-13-13	Guaranteed	13.0	13.0	13.0		Blenn 13-13-13	Guaranteed	13.0	13.0	13.0	
	2125	12.4	11.1	15.8	97		1316	12.2	14.8	13.8	103
Pasturgro 6-24-24	Guaranteed	6.0	24.0	24.0			2084	12.3	15.0	13.2	103
	1864	5.3	26.6	23.2	103		2377	13.0	13.9	13.7	104
	1874	6.6	24.6	18.8	98	Pasturgro 6-24-24	Guaranteed	6.0	24.0	24.0	
	2175	7.2	24.1	24.1	105		2401	6.1	25.4	24.0	104
W. H. & COMPANY, SHREVEPORT, LA.							2456	10.0	21.0	24.8	108
Smith's Red Steer 8-8-8	Guaranteed	8.0	8.0	8.0		Certified Formula for Sweet Potatoes 7-14-14	Guaranteed	7.0	14.0	14.0	
	159	8.5	8.7	8.4	107		1317	7.0	14.3	14.8	103
	213	8.1	8.1	8.0	101		2402	7.1	13.9	14.1	101
	997	8.3	8.5	7.1	102	TEXAS FARM PRODUCTS, NACOGDOCHES, TEXAS					
	1315	8.6	10.7	9.0	117	Lone Star Brand Fertilizer 8-8-8	Guaranteed	8.0	8.0	8.0	
	2379	8.4	8.2	8.0	104		11	8.9	8.4	8.0	108
	2559	8.9	8.2	8.1	107		179	8.4	8.1	8.1	104
Mean		8.5	8.7	8.1			804	8.0	8.2	8.2	102
Coef. Var.		3.1	11.3	7.6			808	8.3	9.0	8.0	106
Smith's Red Steer 6-12-6	Guaranteed	6.0	12.0	6.0			876	8.2	8.4	7.2	100
	158	6.9	12.7	6.9	111		881	8.0	8.0	8.0	100
	729	6.5	11.3	6.1	101		978	8.0	8.0	8.6	102
	963	6.4	12.5	6.0	105		991	8.0	8.3	8.0	102
	996	6.7	12.1	6.0	105		1075	8.0	8.1	8.4	102
	1055	6.3	12.5	6.7	106		1122	8.4	10.3	6.8	110
	1067	6.5	13.1	6.4	109		1306	8.0	9.3	8.4	107
	1910	6.8	13.4	8.7	117		1347	8.0	9.1	8.6	107
	2560	6.9	12.3	6.8	109		1759	8.5	11.0	8.4	117
	2562	6.7	12.1	6.1	105		1775	7.8	8.8	8.4	103
Mean		6.6	12.4	6.6			1931	8.1	9.0	9.0	107
Coef. Var.		3.0	4.9	12.8			1971	8.5	10.2	9.0	115
Smith's Red Steer 10-20-10	Guaranteed	10.0	20.0	10.0			2201	7.4	8.4	8.5	99
	102	10.4	19.5	10.2	101		2206	9.4	8.1	8.2	110
	232	10.0	20.3	10.0	101		2439	8.0	8.1	8.2	101
	961	10.6	20.5	10.0	104		2483	7.9	7.7	8.4	99
	1056	10.0	20.3	10.0	101	Mean		8.2	8.7	8.2	
	1066	9.8	18.0	13.6	99	Coef. Var.		5.2	10.1	6.2	
	1088	9.2	20.0	10.1	98	Lone Star Brand 12-12-12 Fertilizer	Guaranteed	12.0	12.0	12.0	
	1287	10.6	20.0	10.1	103		1305	11.4	13.6	12.0	102
	1303	10.0	20.1	10.8	102		1507	11.7	15.0	11.8	107
	1329	10.0	20.2	10.8	102		1605	11.3	14.3	12.3	104
	1909	10.1	22.0	10.4	106		1777	12.7	15.0	14.2	115
	2301	9.6	20.9	10.5	102		2132	11.3	12.0	15.0	102
	2378	10.3	17.1	11.6	96		2481	10.5	12.6	13.8	98
	2400	9.6	19.6	10.5	99	Mean		11.5	13.8	13.2	
	2419	9.9	18.9	10.6	98	Coef. Var.		6.2	9.1	10.1	
	2423	9.9	25.1	10.9	114	Lone Star Brand 10-20-0 Fertilizer	Guaranteed	10.0	20.0	0.0	
	2431	9.9	20.1	10.8	101		1776	9.4	22.0	0.0	104
	2438	9.0	20.9	10.1	99		2131	9.7	20.4	0.0	100
	2525	10.0	19.8	11.4	102		2205	9.2	19.3	0.0	95
Mean		9.9	20.2	10.7			2314	10.1	19.9	0.0	101
Coef. Var.		4.1	8.1	8.1		Lone Star Brand 6-12-6 Fertilizer	Guaranteed	6.0	12.0	6.0	
Smith's Red Steer 5-10-10	Guaranteed	5.0	10.0	10.0			137	6.0	12.4	6.1	102
	962	5.9	10.0	10.0	106		180	6.2	12.2	6.0	102
Smith's Red Steer 3-12-12	Guaranteed	3.0	12.0	12.0			805	6.0	12.3	6.0	102
	224	3.4	12.1	12.4	104		872	5.8	11.6	6.0	97
Pasturo for Commercial Grower 10-20-10	Guaranteed	10.0	20.0	10.0			875	6.2	12.0	6.0	102
	157	10.0	20.1	10.0	101		882	6.2	12.0	6.1	102
Blinn 8-8-8	Guaranteed	8.0	8.0	8.0			992	6.0	12.5	6.9	104
	720	7.5	9.3	8.2	103		1074	6.0	12.0	6.2	101
	964	8.0	8.7	8.2	104		1121	6.0	12.6	6.0	103
							1307	7.3	15.0	7.2	124

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	
Lone Star Brand 6-12-6 Fertilizer						Lone Star Brand 10-20-20 Fertilizer					
	1348	6.1	12.9	6.3	105		Guaranteed	10.0	20.0	20.0	
	1417	6.2	12.6	6.7	106		879	10.0	20.3	20.2	
	1557	6.0	12.8	6.5	105	Lone Star Brand 6-24-24 Fertilizer					
	1604	6.0	12.4	6.5	103		Guaranteed	6.0	24.0	24.0	
	1779	6.4	14.3	6.6	114		1778	6.9	26.3	24.4	
	1811	6.1	12.9	6.8	106	Lone Star Brand 16-20-0 Fertilizer					
	1972	5.8	13.2	7.1	106		Guaranteed	16.0	20.0	0.0	
	2194	5.5	12.1	6.8	99		909	16.0	20.3	0.0	
	2482	6.3	12.8	6.0	106		1415	15.4	20.9	0.0	
Mean		6.1	12.7	6.4			1606	15.6	22.3	0.0	
Coef. Var.		5.7	6.4	6.2			1933	16.1	20.4	0.0	
Lone Star Brand 10-20-10 Fertilizer							1935	15.3	21.6	0.0	
	Guaranteed	10.0	20.0	10.0			1966	15.5	22.3	0.0	
	12	10.6	19.5	10.4	102		2228	14.7	20.4	0.0	
	54	9.6	20.7	10.3	101		2315	14.8	19.8	0.0	
	77	9.8	20.7	10.0	101	Mean		15.4	21.0	0.0	
	136	10.0	20.2	10.0	101	Coef. Var.		3.2	4.5	0.0	
	178	10.0	20.0	10.1	101	Lone Star Brand Fertilizer 0-20-0					
	187	10.0	20.0	10.6	101		Guaranteed	0.0	20.0	0.0	
	207	10.0	20.2	10.3	101		55	0.0	21.0	0.0	
	656	10.1	20.0	10.2	102		1774	0.0	21.4	0.0	
	698	10.0	20.0	10.0	100		2448	0.0	20.6	0.0	
	772	10.0	20.6	10.2	102	TEXAS FARM SUPPLY, BAY CITY, TEXAS					
	798	9.5	21.1	10.0	101	Tex-Farm Fertilizer 16-8-0					
	806	10.0	20.5	10.1	102		Guaranteed	16.0	8.0	0.0	
	809	9.7	20.2	10.0	100		1937	16.1	10.9	0.0	
	871	9.6	20.0	10.9	99	TIDE PETROLEUM PRODUCTS, INC., EDINBURG, TEXAS					
	874	9.6	20.0	10.0	99	Tide Green Liquid Fertilizer 12-12-0					
	880	10.2	20.0	10.2	101		Guaranteed	12.0	12.0	0.0	
	894	10.4	20.0	10.0	102		616	12.3	12.4	0.0	
	908	9.5	20.0	10.6	99		619	12.2	12.1	0.0	
	929	9.8	20.4	10.2	101		624	12.1	12.7	0.0	
	977	9.6	20.0	10.0	99		1169	12.4	12.3	0.0	
	990	9.7	20.0	10.0	99		1185	12.3	12.6	0.0	
	1120	10.0	20.0	10.0	100		2224	12.1	13.1	0.0	
	1304	10.0	21.0	10.4	104	Mean		12.2	12.5	0.0	
	1346	9.6	20.9	10.9	102	Coef. Var.		0.8	2.8	0.0	
	1416	10.3	19.6	10.8	102	Tide Green Liquid Fertilizer 15-15-0					
	1508	10.1	21.7	10.2	105		Guaranteed	15.0	15.0	0.0	
	1607	9.6	21.3	9.0	101		612	15.3	16.0	0.0	
	1773	9.7	20.9	10.1	102		712	14.3	15.7	0.0	
	1810	10.1	20.3	11.3	103		1170	15.6	16.0	0.0	
	1907	9.4	20.9	10.4	101	Tide Green Liquid Fertilizer 10-20-0					
	1920	9.5	19.1	11.7	98		Guaranteed	10.0	20.0	0.0	
	1930	9.7	21.2	10.2	103		615	10.2	20.8	0.0	
	1965	10.1	21.9	10.8	107	Tide Green Liquid Fertilizer 8-16-8					
	2088	9.1	20.1	11.0	99		Guaranteed	8.0	16.0	8.0	
	2130	9.7	20.3	10.0	100		714	7.6	17.5	8.2	
	2193	9.2	19.8	10.4	97		1168	7.8	16.1	9.0	
	2204	9.7	20.0	11.0	101	Tide Green Liquid Fertilizer 12-12-6					
	2479	10.2	22.2	14.4	112		Guaranteed	12.0	12.0	6.0	
	2480	10.3	20.7	10.1	103		614	11.2	13.8	6.3	
	2523	10.4	20.2	10.1	103		625	10.6	12.0	6.0	
	2589	10.7	20.4	10.2	104		1167	11.5	12.3	6.3	
Mean		9.9	20.4	10.4		Tide Green Liquid Fertilizer 15-10-0					
Coef. Var.		3.5	3.1	7.5			Guaranteed	15.0	10.0	0.0	
Lone Star Brand 12-24-12 Fertilizer							613	15.0	12.3	0.0	
	Guaranteed	12.0	24.0	12.0			617	15.0	10.8	0.0	
	50	11.3	24.3	12.1	99		618	15.1	10.7	0.0	
	1603	11.3	24.9	12.0	100		1171	15.0	10.3	0.0	
	1936	12.1	26.6	13.2	107	Mean		15.7	10.9	0.0	
	2149	10.5	24.9	13.2	99	Coef. Var.		2.0	6.9	0.0	
Lone Star Brand 5-10-10 Fertilizer						Lone Star Brand 10-20-20 Fertilizer					
	Guaranteed	5.0	10.0	10.0			Guaranteed	10.0	20.0	20.0	
	993	3.5	11.5	10.3	98		879	10.0	20.3	20.2	
	2087	5.8	12.4	12.2	121	Lone Star Brand 6-24-24 Fertilizer					

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phosphoric acid, %	Potash, %	VF/VG
Green Liquid Fertilizer 32-0-0	Guaranteed	32.0	0.0	0.0			1246	7.6	8.0	8.7	99
	611	32.0	0.0	0.0	100		1279	8.0	8.3	8.1	102
	620	32.0	0.0	0.0	100		1536	8.1	8.3	8.4	103
	1184	31.1	0.0	0.0	98		1782	7.8	8.1	8.5	101
							2209	7.2	8.2	8.8	98
						Mean	7.9	8.5	8.4		
						Coef. Var.	4.4	8.1	3.4		
Green Liquid Fertilizer 8-24-0	Guaranteed	8.0	24.0	0.0		V-C Fertilizer 12-12-12	Guaranteed	12.0	12.0	12.0	
	713	8.2	24.0	0.0	101		796	12.3	12.7	12.0	104
FERTILIZER CO., TYLER, TEXAS							1245	12.0	12.8	12.8	107
Tex Plant Food 8-8-8	Guaranteed	8.0	8.0	8.0			1506	12.2	12.5	12.0	103
	900	8.9	9.5	8.8	114	V-C Fertilizer 6-12-6	Guaranteed	6.0	12.0	6.0	
	1495	8.7	11.8	9.4	124		37	6.0	12.0	6.1	101
	1771	8.1	10.7	9.8	115		176	5.8	12.2	6.3	101
	2011	8.4	10.2	13.6	124		212	7.0	12.0	7.8	110
						976	6.7	12.0	7.1	107	
Tex Plant Food 6-12-6	Guaranteed	6.0	12.0	6.0			981	6.2	12.1	7.0	107
	899	7.1	9.2	6.5	97		1505	6.5	13.2	6.7	110
	951	8.1	12.0	6.0	113		1565	6.3	12.4	6.1	104
	1494	8.6	11.5	8.3	119		1877	6.6	12.7	7.3	110
	1770	6.1	12.4	9.0	109		Mean	6.4	12.3	6.8	
	1916	8.0	12.1	10.1	122		Coef. Var.	6.1	3.4	8.9	
	Mean	7.6	11.4	8.0		Sulphate of Ammonia 21-0-0	Guaranteed	21.0	0.0	0.0	
Coef. Var.	13.0	11.3	21.5			1060	21.0	0.0	0.0	100	
Tex Plant Food 10-20-10	Guaranteed	10.0	20.0	10.0		V-C 20 Superphosphate 0-20-0	Guaranteed	0.0	20.0	0.0	
	62	10.4	22.4	10.8	109		431	0.0	20.2	0.0	101
	189	10.2	20.8	10.4	103		1780	0.0	21.9	0.0	110
	204	10.5	20.6	10.0	104		1968	0.0	21.3	0.0	107
	376	9.5	20.3	10.1	99	V-C 47 Granular Triple Superphosphate 0-47-0	Guaranteed	0.0	47.0	0.0	
	378	8.3	20.4	10.1	95		5	0.0	48.4	0.0	103
	950	9.4	22.3	10.0	104	V-C Granulated Fertilizer 15-15-0	Guaranteed	15.0	15.0	0.0	
	1261	11.6	24.0	11.4	118		1302	13.4	16.0	0.0	97
	1496	10.5	18.6	11.9	101		2107	12.9	15.3	0.0	93
	1721	10.5	14.9	11.3	91	V-C Granulated Fertilizer 8-8-8	Guaranteed	8.0	8.0	8.0	
	1769	10.4	21.2	11.6	107		759	8.0	8.4	8.6	103
	1915	11.2	23.4	11.2	115		886	8.0	8.0	8.1	101
	1928	10.7	17.4	10.2	97		890	8.7	9.8	8.8	114
	2010	9.7	21.0	12.5	105		892	8.8	8.5	8.2	108
	Mean	10.2	20.6	10.9			897	7.7	8.0	8.0	99
Coef. Var.	8.2	12.0	7.6			931	8.3	8.5	8.4	105	
Tex Plant Food 16-20-0	Guaranteed	16.0	20.0	0.0			946	11.2	9.7	8.3	128
	63	14.9	20.6	0.0	98		1004	8.0	8.5	8.2	103
	682	14.2	20.5	0.0	95		1675	7.4	9.2	8.2	102
	866	13.8	21.7	0.0	97		2012	8.1	9.0	9.0	107
	949	14.0	22.7	0.0	100		2085	7.4	8.4	9.7	102
	1291	15.0	20.6	0.0	98		2200	7.4	8.0	8.6	98
	1772	17.0	20.0	0.0	104		2213	7.3	8.1	8.5	97
	Mean	14.8	21.0	0.0			2421	7.5	8.3	8.0	99
	Coef. Var.	7.9	4.7	0.0			Mean	8.1	8.6	8.5	
							Coef. Var.	12.4	7.0	5.4	
Brand 16-20-0	Guaranteed	16.0	20.0	0.0		V-C Granulated Fertilizer 12-12-12	Guaranteed	12.0	12.0	12.0	
	1589	14.3	27.0	0.0	111		39	11.8	11.8	12.8	100
PHOSPHORIC PROD. DIV., TENN. CORP., TAMPA,							185	11.7	12.3	12.6	101
Triple 46 0-46-0	Guaranteed	0.0	46.0	0.0			769	12.0	12.3	12.1	101
	2312	0.0	46.7	0.0	101		885	11.0	12.4	12.7	98
CAROLINA CHEMICAL CORP., SHREVEPORT, LA.							889	11.5	12.1	13.4	101
Fertilizer 8-8-8	Guaranteed	8.0	8.0	8.0		Mean	11.6	12.2	12.7		
	36	8.0	9.0	8.0	105		Coef. Var.	3.2	1.8	3.6	
	210	8.3	8.0	8.1	102						
	974	8.2	10.0	8.4	111						

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG	Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %
V-C Granulated Fertilizer	13-13-13									
Guaranteed		13.0	13.0	13.0			382	9.4	20.2	10.4
1486		11.8	13.5	13.6	98		690	10.4	20.5	10.0
V-C Granulated Fertilizer	10-20-0						709	10.0	20.2	10.0
Guaranteed		10.0	20.0	0.0			727	10.1	20.5	10.4
3		9.4	20.8	0.0	100		760	10.3	20.4	10.0
106		10.8	20.9	0.0	106		761	10.1	20.0	10.0
131		9.8	20.1	0.0	100		768	10.5	20.3	10.0
281		10.0	20.5	0.0	102		795	9.2	21.1	10.0
309		10.0	20.0	0.0	100		802	10.3	20.9	10.2
350		10.1	20.6	0.0	103		860	9.4	19.5	10.0
1566		9.6	21.5	0.0	103		884	10.0	20.7	10.0
Mean		10.0	20.6	0.0			891	10.0	20.0	10.0
Coef. Var.		4.5	2.5	0.0			930	10.0	20.0	10.0
V-C Granulated Fertilizer	15-30-0						945	10.4	20.0	10.0
Guaranteed		15.0	30.0	0.0			966	10.0	20.0	10.0
415		14.5	30.0	0.0	102		975	10.3	20.3	10.0
V-C Granulated Fertilizer	6-12-6						984	10.0	20.5	10.1
Guaranteed		6.0	12.0	6.0			985	10.7	20.0	10.5
140		6.6	12.1	6.9	106		995	9.6	20.0	10.0
155		6.3	12.1	6.6	104		1244	10.3	20.0	10.0
728		6.1	12.2	6.7	103		1256	9.7	20.0	10.4
758		6.3	12.0	6.7	104		1262	10.0	20.0	10.0
762		6.8	12.0	6.9	107		1264	10.0	20.0	10.0
773		6.6	12.0	7.0	106		1278	10.0	20.6	10.0
800		6.0	12.0	6.4	101		1300	10.3	20.3	10.1
893		6.8	12.0	6.7	107		1394	10.3	22.0	9.5
898		7.9	15.9	7.7	132		1485	9.6	20.0	10.7
932		6.0	12.5	7.7	106		1513	9.7	20.1	11.0
947		6.3	12.0	6.0	102		1534	9.8	23.0	11.0
967		6.1	12.0	6.3	102		1564	10.5	20.4	12.0
970		6.6	12.5	6.1	106		1697	10.3	18.9	10.5
1003		6.6	12.2	6.3	106		1704	10.3	20.6	11.7
1263		6.5	12.0	7.7	107		1781	10.1	23.3	10.0
1280		7.0	12.6	6.7	111		1792	10.1	21.8	10.0
1482		6.4	12.7	6.3	106		1876	10.4	21.4	11.4
1710		6.1	12.7	6.1	104		1918	9.6	20.6	10.1
2114		6.1	12.1	6.7	103		1927	10.5	21.8	12.0
2210		6.1	11.1	6.6	99		2086	7.1	18.4	10.9
2214		6.2	11.2	6.9	100		2106	9.3	20.1	12.0
2255		7.3	13.0	7.1	115		2113	10.2	22.4	10.9
2260		6.3	11.1	6.6	100		2199	9.1	17.0	11.2
2388		6.1	12.0	6.5	102		2203	9.5	20.4	11.0
2422		6.5	12.1	6.8	106		2208	9.6	19.1	11.0
Mean		6.5	12.2	6.7			2212	9.4	19.3	10.0
Coef. Var.		6.7	7.2	6.8			2256	9.6	20.2	11.0
V-C Granulated Fertilizer	10-20-10						2420	9.9	19.6	10.4
Guaranteed		10.0	20.0	10.0			2427	9.7	21.1	10.4
4		9.2	19.6	10.2	97		2563	9.5	19.4	11.0
38		10.1	20.1	10.4	102		2585	10.0	20.8	10.2
104		10.0	21.0	10.1	103		Mean	9.9	20.4	10.5
107		10.0	20.9	10.4	103		Coef. Var.	4.9	4.5	5.5
132		9.8	20.8	10.2	102	V-C Granulated Fertilizer	12-24-12			
134		10.2	20.6	10.0	103	Guaranteed		12.0	24.0	12.0
141		10.0	21.6	10.1	105	1		10.6	22.6	12.0
143		10.3	20.1	10.1	102	416		11.0	24.3	17.0
154		10.1	20.4	10.4	102	1409		11.7	25.4	12.0
174		10.0	20.3	10.2	101	1484		10.8	24.8	12.0
184		10.0	21.3	10.4	104	V-C Granulated Fertilizer	5-10-10			
196		10.0	20.0	10.0	100	Guaranteed		5.0	10.0	10.0
205		10.0	20.5	10.3	101	175		5.1	10.1	10.0
206		10.1	20.0	10.0	100	2387		5.1	10.1	10.1
209		10.1	20.5	10.1	102	V-C Granulated Fertilizer	10-20-20			
230		10.0	20.3	10.4	101	Guaranteed		10.0	20.0	20.0
242		10.0	20.5	10.0	101	1515		10.2	24.1	20.1
277		9.4	21.0	10.8	101	2211		9.5	20.4	20.1
282		10.0	20.1	10.1	101	V-C Granulated Fertilizer	6-24-24			
370		10.0	20.4	10.0	101	Guaranteed		6.0	24.0	24.0
						1481		6.0	26.7	24.0

TABLE 8. ANALYSES OF COMMERCIAL FERTILIZERS SAMPLED DURING 1959-60, CONTINUED

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Granulated Fertilizer 16-20-0					
Guaranteed	16.0	20.0	0.0		
2	15.3	20.9	0.0		100
108	16.3	20.6	0.0		103
388	13.4	20.4	0.0		93
689	15.5	20.1	0.0		99
861	15.5	21.4	0.0		102
864	16.2	20.6	0.0		103
906	16.0	21.8	0.0		105
1098	14.6	20.0	0.0		96
1265	15.0	20.8	0.0		99
1301	13.4	19.4	0.0		90
1483	16.1	21.7	0.0		105
1540	15.2	22.0	0.0		102
1567	16.1	23.7	0.0		109
1676	16.0	21.1	0.0		103
1875	16.2	22.7	0.0		107
1967	16.1	20.3	0.0		102
2108	16.0	20.1	0.0		101
2246	16.1	20.2	0.0		101
2323	15.1	21.8	0.0		102
2547	16.6	20.1	0.0		103
Mean	15.5	21.0	0.0		
Coef. Var.	5.7	5.0	0.0		
Harvest King 8-8-8					
Guaranteed	8.0	8.0	8.0		
1568	8.1	8.8	8.0		104
Harvest King 12-12-12					
Guaranteed	12.0	12.0	12.0		
980	12.2	12.6	12.1		103
1514	11.5	13.2	13.2		103
KEY GROWERS COOP., MISSION, TEXAS					
Valley Gro Fertilizer 12-24-12					
Guaranteed	12.0	24.0	12.0		
1164	12.1	24.0	13.2		102

Manufacturer, place of business and brand	Laboratory no.	Nitrogen, %	Available phos- phoric acid, %	Potash, %	VF/VG
Valley Gro Fertilizer 16-20-0					
Guaranteed	16.0	20.0	0.0		
1165	16.0	21.8	0.0		104
Valley Gro Fertilizer 45-0-0					
Guaranteed	45.0	0.0	0.0		
2227	45.3	0.0	0.0		101
WESTERN CHEMICAL, PECOS, TEXAS					
Gulf Liquid 0-54-0					
Guaranteed	0.0	54.0	0.0		
2602	0.0	54.0	0.0		100
Gulf Liquid 8-24-0					
Guaranteed	8.0	24.0	0.0		
2605	8.1	23.0	0.0		98
WESTERN FERTILIZER CO., MULESHOE, TEXAS					
Wesco Brand Fertilizer 0-18-6					
Guaranteed	0.0	18.0	6.0		
2275	0.0	15.3	7.0		90
Wesco Brand Fertilizer 16-20-0					
Guaranteed	16.0	20.0	0.0		
1578	16.1	24.5	0.0		111
Wesco Brand Fertilizer 0-20-0					
Guaranteed	0.0	20.0	0.0		
1579	0.0	22.7	0.0		114
2274	0.0	20.4	0.0		102
WYATT WHOLESALE, INC., SAN ANGELO, TEXAS					
Wyatt's A-M Mixture 10-10-5					
Guaranteed	10.0	10.0	5.0		
514	9.3	10.3	1.9		92

Fertilizer Guarantors Registered in Texas, 1959-60

LOCATED IN TEXAS

- Agri-Chem of Texas, 2734 Roosevelt Avenue, San Antonio
- Agricultural Chemicals of Dallas, 3707 E. Kiest Blvd., Dallas
- Agricultural Chemicals, Inc., Llano
- Agro-Chem Corporation, Box 5459, Ascarate Branch, El Paso
- Agro-Chem Development Laboratories, Box 1101, El Paso
- Armour Agricultural Chemical Co., Box 5296, Dallas
- Armour Agricultural Chemical Co., Box 1412, Houston
- Associated Laboratories, 2121 S. Central Expressway, Dallas
- Bactex Company, Inc., Box 4065, Station A, San Antonio
- Baker Bros. Co., Box 828, Fort Worth
- Balch-Jackson Co., 623 S. Oakes, San Angelo
- Baron Chemical Co., Inc., 915 Texas Avenue, El Paso
- Bell Chemical Co., 1421 Levee St., Dallas 7
- Best Fertilizer Co., 8420 Manchester Street, Houston 12
- Blue Bonnet, Box 1608, Harlingen
- Blume System Tree Experts, 2736 Virginia, Houston 6
- Campbell Fertilizer Co., Inc., 102 Japhet Street, Houston
- Cap Rock Fertilizer Co., Littlefield
- Carl Pool Labs, Box 12188, San Antonio
- Cato & Putty, 510 Soledad, San Antonio
- Central Texas Fertilizer Co., Inc., Box 761, Comanche
- Chemical Products Co., Inc., Box 187, Hurst
- Chemical Specialties Co., Box 1453, Laredo
- Consumer's Fertilizer Co., Inc., Henderson
- R. R. Cunningham, 3800 Northwest Highway, Dallas 20
- Danbury Farm Supply, Danbury
- Dennisons, Weslaco
- Diamond J. Feed & Cattle Co., Box 353, Daingerfield
- E. Dickey, 4604 Rosedale, Austin
- Diversified Products Corp., Box 5184, Dallas
- Dixie Farm Service, Inc., Box 71, Needville
- Dril-Kem, Inc., 1525B No. Post Oak Road, Houston
- East Texas Products Co., Box 176, Tyler
- Edna Liquid Fertilizer Co., Edna
- Farm and Ranch Fertilizer Co., 102 W. French Pl., San Antonio 12
- Farmers Fertilizer Company, Box 944, Texarkana, Ark.-Tex.
- Fehmel Dusting Service, Box 1061, Bay City
- Ferd Staffel Co., Box 2380, San Antonio
- Ferti-Mulch Company, Route 2, Round Rock
- Forrest's Greenhouse, Box 357, Waxahachie
- Gilmer Cotton Oil & Fertilizer Company, Gilmer
- Goodpasture Grain & Milling Co., Brownfield
- Green Light Plant Food Co., Box 6845, San Antonio
- Gulf Coast Fertilizer Co., Bishop
- Gulf Coast Organic and Mineral Co., 325 S. Commerce Blvd., Pharr
- Gulf Rendering By-Products Corp., Box 865, Baytown
- Hale Laboratories, Box 1348, Bay City
- Harvest Fertilizer and Chemical Co., Rockwall
- Hayes-Simmons Co., Box 633, Mission
- B. L. Henderson & Sons, Box 19204, Houston
- Hill's Nursery, Victoria
- Hi-Yield Fertilizer Company, Box 4, Bonham
- A. C. Huff Enterprises, Box 22437, Houston
- International Guano Company, 6115 Denton Road, Dallas 35
- International Minerals & Chem. Corp., Box 100, Fort Worth
- Interstate By-Products and Supply Co., Box 100, Fort Worth
- Jacksonville Fertilizer Company, Box 1225, Jacksonville
- Jones Farm Store, Box 786, Muleshoe
- Kipfer Chemical Company, Box 770, Harlingen
- Klauss-White, 1441 W. Poplar St., San Antonio
- Lister Laboratory, Ltd., Box 84, Helotes
- Lone Star Steel Company, Box 12226, Dallas
- Marbach, E. W., Converse
- Margie Korn Garden Shop, 5213 W. Lovers Lane, Dallas
- Mar-Mitch Ltd, Box 1691, Pampa
- Marshall Cotton Oil Company, Marshall
- Mid West Feed Yards, Box 1370, San Angelo
- J. W. Nichols Co., 719 N. Main, Fort Worth
- Nutrio-Sol Labs, 2842 Ave. G., Fort Worth
- The Organic MC Compost Works, 501 E. Commerce, Hamilton
- Organic Materials Company, Box 1150, McAllen
- Pan Handle Gold Fertilizer Co., 1745 E. Main, Amarillo
- Pel-Star Fertilizer Co., Inc., Los Fresnos
- Pittsburg Fertilizer Co., Pittsburg
- Plainsman Feeds, 601 E. 5th Street, Plainview
- Port Fertilizer and Chemical Co., Los Fresnos
- Price's El Paso Dairy, Box 3008, Sta. A, El Paso
- Product Development Co., 1525B North Post Road, Houston 24

Fertilizer Guarantors Registered in Texas, 1958-59—Cont'd.

Star Fertilizer Company, Box 486, Sulphur Springs
Land-Gordon Farm Chemicals, Box 170, Plainview
E. H., Bandera
Scientific Soil Service, Elsa
Chemical Co. of Texas, Box 7556, Houston 7
Cannon Feed Mills, 150 Apache St., San Antonio
Douglass Co., Inc., (San Jacinto Chem. Co.)
Box 1571, Texas City
Gro Fertilizer Co., 205 S. Allen Street, Monahans
Nu Company, San Juan
Organic Service, 8729 Old County Drive, El Paso
Prescription Service, Box 573, San Antonio
Rich Products Co., 5800 Live Oak, Waco
Texas Fertilizer & Chemical Co., Rt. 1, Box 303, El Campo
Texas Liquid Fertilizer Corp., Box 515, Katy
Northwest Chemical Company, 500 South 19th Street, McAllen
Northwest Fertilizer Co., Box 12234, Dallas
Northwest Fertilizer and Chemical Co., 5030 East Paisano Drive, El Paso
Laid, Inc., P. O. Box 8155, San Antonio 12
Luffer Chemical Company, Box 507, Weslaco
Luffer Chemical Co., Consolidated Chemical Industries Div., 6910 Fannin St., Suite 300 So., Houston 25
Luhur Industries Corp., 1207 S. Buckner, Dallas
Lterior Fertilizer Company, Box 3262, Bryan
Green Chemical Co., Box 725, Aransas Pass
Litt & Company, Plant Food Div., Box 7707, Houston
Ammonia, Inc., Elsa
Texas Agricultural Chemical Co., Box 745, Fort Worth
Texas City Chemicals, Box 1571, Texas City
Texas Farm Products, Box 31, Nacogdoches
Texas Farm Supply, 1820 Ave. H., Bay City
Texas Liquid Fertilizer Co., Box 808, La Feria
Texas Soil Builders, Inc., Box 587, Center
Lile Products Inc., 800 North Closner, Edinburg
Lth State Soil Products Company, 2218 N. Piedras St., El Paso
Lter Fertilizer Company, 420 South Oakland, Tyler
Lalley Growers Cooperative, Box 907, Mission
Lestern Chemicals, Ltd., 1809 Broadway, Lubbock
Lestern Fertilizer Company, Box 398, Muleshoe
Lest Texas Fertilizer & Peat Moss Co., 2776 Pine Street, Abilene
Lest Texas Guano Company, Spur

Wilson Chemical & Testing Laboratory, Box 1101, El Paso
Wonder-Gro Corp., Room 2, International Airport, San Antonio
Wood Chemical Co., Box 599, Lubbock
Wyatt Wholesale Inc., 609 W. 11th Street, San Angelo
Young's Horticultural & Pest Control Chem. Co., Rt. 2, Box 89, Snyder

LOCATED ELSEWHERE

Agricultural Products Company, Box 658, Anthony, New Mexico
Agricultural Products Company, Inc., Mesquite, New Mexico
Allied Chemical Corp., Nitrogen Div., Drawer 61, Hopewell, Virginia
J. L. Alls, 2128 Alvarado N.E., Albuquerque, New Mexico
AmChem Products, Inc., Ambler, Pennsylvania
American Agricultural Chemical Co., 100 Church Street, New York 7, New York
American Bulb Co., 711 Third Ave., New York 17, New York
American Cyanamid Company, Box 383, Princeton, New Jersey
American Liquid Fertilizer Co., 2nd and St. Clair Street, Marietta, Ohio
The Anaconda Company, Anaconda, Montana
Arizona Agro Phosphate Co., 5420 W. Bethany Home Road, Glendale, Arizona
Arkmo Plant Food Co., Inc., Walnut Ridge, Arkansas
Armour Agricultural Chemical Company, Selma, Missouri
Associated Cooperatives, Inc., 750 W. 20th Ave., Sheffield, Alabama
Atlas Fish Fertilizer Co., 1 Drumm St., San Francisco 11, California
B & W Fertilizer Company, Columbus, Nebraska
Barco Manufacturing Co., Inc., 119 Dewey St., Worcester 10, Massachusetts
Better Homes Bureau, Newark, New York
Bio Products, Inc., Warrenton, Oregon
Blackstone Guano Company, Inc., Box 3218, Queensboro Sta., Shreveport, La.
The Borden Co.—Chem. Div., 350 Madison Ave., New York 17, New York
Boyle-Midway, Inc., 22 E. 40th Street, New York 16, New York
Bradley & Baker, 1401 Peach Tree St., Atlanta 9, Georgia
California Spray Chemical Corp., Lucas and Ortho Way, Richmond, California

Fertilizer Guarantors Registered in Texas, 1958-59—Cont F

- H. D. Campbell Company, Rochelle, Illinois
Chilean Nitrate Sales Corp., 120 Broadway, New York
5, New York
Cloro-Spray Corp., 2215 N. American, Philadelphia
33, Pennsylvania
Clover Chemical Company, Box 10865, Pittsburgh
36, Pennsylvania
Coastal Chemical Corp., Yazoo City, Mississippi
Colorado Fuel and Iron Corp., Box 1920, Denver,
Colorado
Commercial Solvents Corp., 260 Madison Ave., New
York 61, New York
Crown Zellerbach Corp., Chemical Products Div.,
Camas, Washington
Davey Tree Expert Company, 117 So. Water Street,
Kent, Ohio
Davison Chemical Company, Box 987, Joplin, Mis-
souri
Desert Green Corp., Box 112, Belen, New Mexico
Dixie Fertilizer Company, Inc., Box 1111, Shreveport,
Louisiana
Dow Chemical Company, Midland, Michigan
Edgewood Farms, Inc., Marysville, Ohio
E. I. Dupont de Nemours & Co., Box 993, Wilming-
ton, Delaware
Farm Craft Feeds, Inc., 2340 Maury Street, Des
Moines, Iowa
Ferro Corporation, 4150 East 56th St., Cleveland 5,
Ohio
Fort Smith Cotton Oil Company, Fort Smith,
Arkansas
Garden Research Laboratory, 565 Fifth Ave., Room
400, New York 17, New York
Geigy Agricultural Chemicals, Box 430, Yonkers,
New York
Goulard and Olena, Inc., Skillman, New Jersey
Grace Chemical Co., Box 4906, Memphis 7, Tennessee
Grand River Chem. Div. of Deere & Co., Box 1417,
Pryor, Oklahoma
Heinl's Greenhouse Laboratories, 4401 LaGrange St.,
Toledo, Ohio
Heller Greenhouse Laboratories, 218 E. Pikes Peak
Ave., Colorado Springs, Colorado
Hercules Powder Co., 900 Market Street, Wilmington
99, Delaware
Hershey Estates, Inc., Hershey, Pennsylvania
H & H Wholesale Nursery, Inc., Box 1068, Las
Cruces, New Mexico
A. H. Hoffman, Inc., Landisville, Pennsylvania
Hydro-Pak Company, Box 666, Savannah, Georgia
Hydroponic Chemical Company, Inc., Copley, Ohio
Hy-Gro Corp., 1101 Maryland Ave., Baltimore 1,
Maryland
International Mineral & Chemical Corp., Box
Texarkana, Arkansas
International Minerals & Chem. Corp., For
Dept., Old Orchard Road, Skokie, Illinois
Kelly, Weber and Company, Inc., Lake C
Louisiana
Lake Charles Feed Company, Inc., Lake C
Louisiana
Leeds Chemical Products, 531 Webster Str
cago, Illinois
O. E. Linck Company, Clifton, New Jersey
Loncala Phosphate Company, Box 338, High
Florida
Mid-South Chemical Corp., 1222 Riverside
Memphis, Tennessee
Minden Cotton Oil and Ice Company, Ltd.,
Louisiana
Mississippi Chemical Corp., Yazoo City, Miss
Monsanto Chemical Co., Lindbergh & Olive St.
St. Louis 24, Missouri
Na-Churs Plant Food Company, 421 Monroe
Marion, Ohio
Natural Plant Food Company, 210 W. Call
Oklahoma City, Oklahoma
Naturizer Company, Box 755, Norman, Oklah
Nitro-Form Agricultural Chemicals, 92 Sum
Ave., Woonsocket, R. I.
Olin Mathieson Chemical Corp., Box 991, Little
Arkansas
Ozark-Mahoning Co., 310 W. Sixth Street, T
Oklahoma
Philip R. Park, Inc., Berth 42, San Pedro, Calif
Phillips Petroleum Company, Bartlesville, Okla
Plantabbs Corporation, 1105 Maryland, Balim
Maryland
Plant Research Company, 8020 No. Central
Skokie, Illinois
Plant Shine Company, 404 S. 4th Street, St. L
Missouri
Proen Products Company, 9th and Grayson, Be
California
"Pronto" Liquid Fertilizer Corp., Box 288, La
Louisiana
Ralph's Ironite Company, Box 420, Casa Gr
Arizona
Ra-Pid-Gro Corp., 88 Ossian Street, Dansville
York
Ravel Bros., Inc., Box 462, Albuquerque, New M
Reliance Fertilizer Co., 106 E. Bay Street, Sav
Georgia
Reuter Seed Co., Inc., 320 N. Carrollton Ave.
Orleans 9, Louisiana

Fertilizer Guarantors Registered in Texas, 1958-59—Cont'd.

- Phosphate & Chemical Co., 813 S. Garden St.,
Columbia, Tennessee
- M. Scott and Sons Company, Marysville, Ohio
- Roebuck and Company, 925 So. Homan Ave.,
Chicago 7, Illinois
- Severage Commission of the City of Milwaukee, Box
2079, Milwaukee 1, Wisconsin
- Wholesale Bulb Co., Jonesboro, Louisiana
- Amendments Corp., 2002 Board of Trade Bldg.,
Chicago 4, Illinois
- Booster Corp., 2501 East Fourth St., Oklahoma
City, Oklahoma
- Nitrogen Supply Co., Yazoo City, Mississippi
- Chemical Company, 610 Dwight Building,
Kansas City, Missouri
- Plant Labs, Box 1955, Columbus 16, Ohio
- Rockdale Fertilizer Co., Morris, Illinois
- Plant Food Co., Inc., Clovis, New Mexico
- Plant Food Div., Box 3567, Queens-
boro Station, Shreveport, La.
- Tennessee Corp., 619-29 Grant Building, Atlanta,
Georgia
- L. Teweles Seed Co., Box 624, Milwaukee 1, Wis-
consin
- Thompson Sales Co., Box 246, Montgomery, Alabama
- U. S. Phosphoric Division, Tennessee Corp., Box 3269,
Tampa 1, Florida
- United States Steel Corp., Box 599, Fairfield,
Alabama
- Victor Chemical Works, 155 N. Wacker Drive,
Chicago 6, Illinois
- Virginia-Carolina Chemical Corp., Box 3218 Queens-
boro Station, Shreveport, La.
- Vitaguano Limited, 11 S. LaSalle St., Chicago 3,
Illinois
- Western Agricultural Chemical Co., Box 1074, Colo-
rado Springs, Colorado
- Western Phosphates, Inc., Box 893, Salt Lake City
10, Utah
- Worm Profit Farms, 2233 Laura, Wichita, Kansas



Location of field research units of the Texas Agricultural Experiment Station and cooperating agencies

State-wide Research



The Texas Agricultural Experiment Station is the public agricultural research agency of the State of Texas, and is one of the parts of the A&M College of Texas.

ORGANIZATION

IN THE MAIN STATION, with headquarters at College Station, are 16 subject matter departments, 2 service departments, 3 regulatory services and an administrative staff. Located out in the major agricultural areas of Texas are 21 substations and 9 field laboratories. In addition, there are 14 cooperating stations owned by other agencies. Cooperating agencies include the Texas Forest Service, Game and Fish Commission of Texas, Texas Prison System, U. S. Department of Agriculture, University of Texas, Texas Technological College, Texas College of Arts and Industries and the King Ranch. Some experiments are conducted on farms and ranches and in rural homes.

OPERATION

THE TEXAS STATION is conducting about 400 active research projects, grouped in 25 programs, which include all phases of agriculture in Texas. Among these are:

- | | |
|--------------------------------------|---------------------------------|
| Conservation and improvement of soil | Beef cattle |
| Conservation and use of water | Dairy cattle |
| Grasses and legumes | Sheep and goats |
| Grain crops | Swine |
| Cotton and other fiber crops | Chickens and turkeys |
| Vegetable crops | Animal diseases and parasites |
| Citrus and other subtropical fruits | Fish and game |
| Fruits and nuts | Farm and ranch engineering |
| Oil seed crops | Farm and ranch business |
| Ornamental plants | Marketing agricultural products |
| Brush and weeds | Rural home economics |
| Insects | Rural agricultural economics |
| | Plant diseases |

Two additional programs are maintenance and upkeep, and central services.

Research results are carried to Texas farmers, ranchmen and homemakers by county agents and specialists of the Texas Agricultural Extension Service

AGRICULTURAL RESEARCH seeks the WHATS, the WHYS, the WHENS, the WHEREs and the HOWs of hundreds of problems which confront operators of farms and ranches, and the many industries depending on or serving agriculture. Workers of the Main Station and the field units of the Texas Agricultural Experiment Station seek diligently to find solutions to these problems.

Today's Research Is Tomorrow's Progress

