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FIRST ANNUAL REPORT OF THE ARIZONA FERTILIZER CONTROL OFFICE

YEAR ENDING DECEMBER 31, 1938

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FIRST ANNUAL REPORT OF THE ARIZONA FERTILIZER CONTROL OFFICE

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COMMERCIAL FERTILIZERS

The Arizona Fertilizer Control law was enacted by the thirteenth Arizona legislative assembly in 1937 and went into effect July 1, 1937. It is a law designed to regulate the sale of commercial fertilizers and by so doing protect the consumer from fraud and the manufacturer from unfair competition. Briefly, it requires that all fertilizers sold in the state be registered with the State Chemist for which a registration fee of $5 for each brand is charged. This, together with a tonnage fee of 20 cents per ton, supplies the funds needed for the enforcement of the law. In addition to registration, the law requires that both fertilizers and fertilizer materials be labeled to show the percentage of plant food, as nitrogen, phosphate, and potash, and a declaration of their availability. A copy of the law may be obtained from the Agricultural Chemist, Agricultural Experiment Station, who is designated the State Chemist for the enforcement of the law.

CAUTION

Consumers should be guided by the analysis of the fertilizer and not the price per ton, as poor quality fertilizer may be sold legally if it is properly tagged. Acceptance of any fertilizer that is not properly tagged should be refused.

FERTILIZERS FOR ARIZONA SOILS

Arizona soils, like those of all semiarid districts, are deficient in nitrogen. Nitrogenous materials therefore comprise a large percentage of the fertilizers consumed in the state. While the law does not require a statement of ingredients, it shows a good intent on the part of the fertilizer manufacturer when such a statement appears on the tags. It is of value to the consumer to know whether he is buying quick-acting nitrogen, as nitrate; slow-acting nitrogen, as organic; ammonia nitrogen, which is intermediate; or even a mixture of two or more forms of nitrogen.

Arizona soils are very deficient in available phosphate. As there is a wide variation in the amount of available phosphate in the various phosphate fertilizer materials, a statement of availability must appear on the tag. Since Arizona soils already contain a good supply of total phosphate, which is of poor availability, obviously it would be poor economy to add more insoluble phosphate to the soils. Water-soluble phosphates such as treble superphosphate and ammonium phosphates are the best forms to use on Arizona soils.

Potash is nothing more nor less than an alkali salt, and all the soils of semiarid districts are well supplied with available potash. Therefore the use of potash on Arizona soils is not recommended, and few fertilizers sold in the state contain any potash.

PROPERTIES OF FERTILIZER MATERIALS

Nitrogen (N).—This is beyond doubt the most important plant food used in fertilizers. While nitrogen fertilizers stimulate root growth to a certain extent, its effects are most often manifested in the leaves. If nitrogen is deficient the leaves will usually have a pale or yellowish green color. There is also some danger of using too much nitrogen, which will cause excessive vegetative growth by producing more succulent plant material, thus making the plant an easier prey to plant diseases and insects.

While at one time most of the nitrogenous materials used in fertilizers were of organic origin and contained practically no water-soluble nitrogen, at the present time most of the nitrogen in fertilizers comes from water-soluble salts. Prominent among these are ammonium sulphate, calcium nitrate, sodium nitrate, urea, cyanamid, and ammonium phosphate.

TABLE 1.—AVERAGE COMPOSITION OF SOME COMMON FERTILIZER MATERIALS USED IN ARIZONA.

Fertilizer	Total nitrogen	Water-soluble nitrogen	Phosphoric acid P_2O_5		
			Total	Insoluble	Available
Sodium nitrate	16.0	16.0	.....	.....	.....
Calcium nitrate	15.5	15.5	.....	.....	.....
Ammonium sulphate	20.5	20.5	.....	.....	.....
Cyanamid	22.0	20.6	.....	.....	.....
Garbage tankage	3.0	0.6	4.5	2.5	2.0
Cattle manure	2.5	0.5	1.6	.....	.....
Sheep manure	2.5	0.5	1.8	.....	.....
Poultry manure	4.3	1.5	3.1	.....	.....
Activated sewage	3.0-5.0	0.8	2.2	.....	.....
Raw bone	3.6	0.8	23.4	9.2	14.2
Steamed bone	2.2	0.4	27.5	10.4	17.1
Animal tankage	6.0	1.5	12.0	4.0	8.0
Raw rock phosphate	.....	.....	33.4	31.1	2.3
Superphosphate					
16 per cent	.....	.....	17.0	1.0	16.0
48 per cent	.....	.....	48.0	3.0	45.0
Calcium metaphosphate	.....	.....	65.0	.....	.....
Ammonium phosphate					
16-20	16.0	16.0	20.0	.....	20.0
11-48	11.0	11.0	48.0	.....	48.0

Phosphoric acid (P_2O_5).—The function of phosphate in plant nutrition is largely in the production of growth and seed. Plants deficient in phosphate will usually be greatly stunted in growth. It is also considered one of the most important root stimulants.

As already stated, all Arizona soils contain a good supply of poorly available phosphate of chemical composition similar to bone and phosphate rock. It is not advisable to use such materials therefore, as phosphate fertilizer and tests have shown them to be of little value. The best forms of phosphate to use on Arizona soils are treble superphosphate and ammonium phosphates. Single superphosphate which is high in available phosphate but not in water-soluble phosphate is a good source of phosphate but not equal to the water-soluble phosphates.

Potash (K_2O).—Potash is largely used by the plant in the new actively growing tissues; it seems to be associated in some way with the production of sugar in the plant, and therefore many claims are made for potash fertilizers as a means of improving the quality of plant products. The law requires that all potash used in fertilizers must be soluble in water. With such restrictions potash materials are mostly the sulphate and chloride, although potash nitrate is used to a limited extent to supply both nitrogen and potash in one salt.

REGISTRATION AND SALE

This report covers the period from July 1, 1937, to December 31, 1938, but hereafter the reports of registrations and analyses will be published annually at the end of the calendar year.

In the operation of this law all registrations must be made by the manufacturer and the registration fee paid by him. The inspection fee of 20 cents per ton must be paid by the dealer or agent who makes the sale to the consumer. In most cases, since sales are usually made by the manufacturer to the consumer, the manufacturer is responsible for both registration and tonnage fee.

Fertilizer manufacturers, dealers, and consumers can profitably use the list of registered fertilizers given in this report. It contains all fertilizer registrations submitted up to April 15, 1939, as well as those not reregistered at the end of 1938.

When ordering fertilizers which do not appear in this list, dealers and consumers should request that the manufacturer register the desired brand before shipment. In all cases where doubt exists as to whether or not a fertilizer is registered, kindly consult the

State Chemist
Arizona Fertilizer Control Office
Agricultural Experiment Station
Tucson, Arizona

or the

Deputy Administrator
Arizona Fertilizer Control Office
1201 W. Madison Street
Phoenix, Arizona

Contracts and orders for delivery of fertilizers in Arizona should carry this statement: "Fertilizers delivered on this contract (or

order) must comply with the requirements of the Arizona Commercial Fertilizer Law."

The Arizona Commercial Fertilizer Law requires that inspection fee stamps or tags shall be attached to every bag, barrel, or other container when so shipped; shall be attached to certificate when shipped in bulk by rail or to the invoice when shipped in bulk by truck. Stamps or tags are to be attached to material before it is offered for sale, except when shipment is made directly to a consumer, then they may be attached before material is unloaded.

The law further requires that every person making shipment of commercial fertilizer or fertilizer material into or within Arizona send to the State Chemist a notice of the kinds, amounts of each kind, dates, destination, and consignees of all such shipments.

REGISTRATION AND ANALYSES

All registrations are in force except where noted immediately below: "Canceled" or "Not Renewed for 1939." Obviously not all fertilizers have been sampled as some fertilizers, while registered, have not been shipped into the state, but are available on order.

TABLE 2.—REGISTRATIONS. ANALYSES OF SAMPLES TAKEN (PER CENT).

Reg. date	Manufacturer or agent and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
	American Cyanamid & Chemical Corporation, Azusa, California						
7- 6-37	Aero Cyanamid	....	G.* 21.00	.....	.....	.....	.....
		29	F.* **20.98**	.....	.....	.....	0.23
7- 6-37	Ammo-Phos 11-48-0	....	G. 11.00	48.00	48.00	.....	.....
		15	F. 11.20	51.90	49.30	.....	0.85
7- 6-37	Ammo-Phos 16-20-0	....	G. 16.00	20.00	20.00	.....	.....
	Anaconda Copper Mining Company, Anaconda, Montana						
7-31-37	Anaconda Treble Superphosphate (0-43-0)	....	G.	46.00	43.00	.....	.....
		20	F.	47.00	44.05	.....	2.91
		28	F.	46.89	44.09	.....	2.81
7-26-38	Anaconda Treble Superphosphate (0-44-0)	....	G.	47.00	44.00	.....	.....
		21	F.	47.45	44.21	.....	3.60
	Arizona Fertilizers, Inc., Phoenix, Arizona						
6-30-37	Nature's Gift 2-20 (Canceled 10-10-38)	....	G. 2.00	.....	20.00	.....	.....
6-30-37	Nature's Gift 4-8	....	G. 4.00	.....	8.00	.....	.....
		4	F. 4.24	8.65	8.38	.....	.....
6-30-37	Nature's Gift 4-12	....	G. 4.00	.....	12.00	.....	.....
		2	F. 4.11	13.10	12.10	.....	.....
6-30-37	Nature's Gift 4-16	....	G. 4.00	.....	16.00	.....	.....
		8	F. 4.35	17.93	16.83	.....	3.26
11-15-37	Nature's Gift 4-20	....	G. 4.00	.....	20.00	.....	.....
		30	F. 4.07	23.50	22.33	.....	3.44
6-30-37	Nature's Gift 6-9	....	G. 6.00	.....	9.00	.....	.....
	Side dressing	5	F. 6.71	10.00	9.70	.....	.....
		17	F. 5.73	9.90	8.34	.....	5.59

*G, guarantee as shown in registration; F, found by analysis; boldface figures indicate deficiency.

TABLE 2.—REGISTRATIONS. ANALYSES OF SAMPLES TAKEN (PER CENT)—Continued.

Reg. date	Manufacturer or agent and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
6-30-37	Nature's Gift 6-9 Flower & Shrubbery	....	G. 6.00	.....	9.00	.....	.....
		7	F. **5.87**	9.36	**8.65**	.....	4.39
6-30-37	Nature's Gift 6-18	....	G.* 6.00	.....	18.00	.....	.....
		16	F.* **6.05**	21.80	19.50	.....	6.83
6-30-37	Nature's Gift 8-10	....	G. 8.00	.....	10.00	.....	.....
		1	F. 8.37	10.60	10.40	.....	.....
11-15-37	Nature's Gift 8-12	....	G. 8.00	.....	12.00	.....	.....
		3	F. 8.98	13.00	12.52	.....	.....
1-11-39	Nature's Gift 8-32	....	G. 8.00	.....	32.00	.....	.....
6-30-37	Nature's Gift 10-5	....	G. 10.00	.....	5.00	.....	.....
		6	F. 10.71	5.15	**4.85**	.....	.....
11-22-37	Nature's Gift 11-22	....	G. 11.00	.....	22.00	.....	.....
		9	F. 11.86	25.60	23.40	.....	10.80
1-31-38	Nature's Gift 12-20 (Canceled 10-10-38)	....	G. 12.00	.....	20.00	.....	.....
2- 1-39	Nature's Gift 21-0	....	G. 21.00	.....	.....	.....	.....
1-11-39	Nature's Gift Hiacid	....	G.	.....	45.00	.....	.....
	Balfour, Guthrie & Co., Ltd., Los Angeles, California						
7- 2-37	Elephant Brand Ammonium Phosphate 11-48	....	G. 11.00	48.00	48.00	.....	.....
	(Trademark "Conaphos")	18	F. 11.56	50.50	49.10	.....	0.99
7- 2-37	Elephant Brand Ammonium Phosphate 16-20	....	G. 16.00	20.00	20.00	.....	.....
	(Trademark "Conaphos")	24	F. 16.72	21.80	21.20	.....	0.38
7- 2-37	Elephant Brand Sulphate of Ammonia	....	G. 20.80	.....	.....	.....	.....
		41	F. 20.94	.....	.....	.....	0.03
2- 1-39	New registration	....	G. 20.60	.....	.....	.....	.....

*G, guarantee as shown in registration; F, found by analysis; boldface figures indicate deficiency.

	Bandini Fertilizer Co., Ltd., Los Angeles, California							
1-24-38	Bandini Azalea Plant Food	....	G.	3.00	12.00	10.00	5.00	.....
	(Not renewed for 1939) (See Bandini Azalea-Camellia & Rhododendron Food)							
2-15-38	Bandini Azalea-Camellia & Rhododendron Food	....	G.	3.00	12.00	10.00	5.00	.....
		43	F.	3.03	14.00	12.30	5.66	6.22
1-24-38	Bandini Blood & Bone Fertilizer	....	G.	6.50	14.00	7.00	.....	.....
2-15-38	New registration	....	G.	6.00	14.00	7.00	.....	.....
		46	F.	6.59	19.50	9.70	.....	4.19
1-24-38	Bandini Blood Meal	....	G.	12.00	.....	.....	.....	.....
		39	F.	13.22	.....	.....	.....	7.95
1-24-38	Bandini Bone Meal	....	G.	1.00	29.00	14.00	.....	.....
2-15-38	New registration	....	G.	0.75	29.00	14.00	.....	.....
		47	F.	1.09	35.40	14.00	.....	2.51
1-24-38	Bandini Bulb Plant Food	....	G.	4.00	10.00	8.00	10.00	.....
	(Not renewed for 1939)	37	F.	4.13	10.20	9.20	10.74	2.75
1-24-38	Bandini Citrus Plant Food	....	G.	6.00	10.00	5.00	4.00	.....
	(Not renewed for 1939)	45	F.	5.98	14.15	10.35	3.74	3.56
1-24-38	Bandini Fish Meal	....	G.	9.50	5.00	3.00	.....	.....
		40	F.	10.02	7.80	5.10	.....	5.49
2-10-39	New Registration	....	G.	10.00	6.00	3.00	.....	.....
8-24-37	Bandini 4-18-6	....	G.	4.00	18.00	17.00	6.00	.....
2-15-38	New registration	....	G.	4.00	18.00	18.00	6.00	.....
	(Not renewed for 1939)							
1-24-38	Bandini Gro-Rite Plant Food	....	G.	5.00	10.00	5.00	2.00	.....
		36	F.	5.20	10.40	9.65	2.57	4.55
1-11-39	New registration	....	G.	5.00	10.00	9.00	2.00	.....
1-24-38	Bandini Rose Plant Food	....	G.	4.00	12.00	6.00	4.00	.....
		42	F.	4.03	14.40	3.90	5.46	2.98
1-11-39	New registration	....	G.	4.00	12.00	8.00	4.00	.....
1-24-38	Bandini Sulphate of Potash	....	G.	.....	.....	.....	48.00	.....
		48	F.	.....	.....	.....	49.86	0.80
1-24-38	Bandini Sweet Pea Plant Food	....	G.	5.00	10.00	7.00	5.00	.....
		44	F.	5.17	10.90	9.70	5.70	3.58

TABLE 2.—REGISTRATIONS. ANALYSES OF SAMPLES TAKEN (PER CENT)—**Continued.**

Reg. date	Manufacturer or agent and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
	The Barrett Company, New York, New York						
4-19-38	Arcadian, the American Nitrate of Soda	....	G.* 16.00	.....	.....	.....	.....
1-11-39	Barrett Sulphate of Ammonia	....	G. 20.56	.....	.....	.....	.....
	Capital Fuel, Feed & Seed Company, Phoenix, Arizona						
6-30 37	Vita-Crop 4-8-0	....	G. 4.00	8.00	8.00	.....	.....
		11	F.* 4.98	11.63	9.93	.....	6.29
6-30-37	Vita-Crop 4-12-0	....	G. 4.00	12.00	12.00	.....	.....
		10	F. 4.42	15.20	13.00	.....	6.39
4-13-38	Vita-Crop 4-16-0	....	G. 4.00	.....	16.00	.....	.....
		12	F. 4.31	17.00	16.22	.....	2.95
7-27-38	Vita-Crop 5-20-0	....	G. 5.00	.....	20.00	.....	.....
7- 2-37	Vita-Crop 6-10-0	....	G. 6.00	10.00	10.00	.....	.....
		49	F. 6.03	12.65	12.05	.....	4.54
7-27-38	Vita-Crop 6-30-0	....	G. 6.00	.....	30.00	.....	.....
1-20-38	Vita-Crop 8-11-0	....	G. 8.00	11.00	11.00	.....	.....
		13	F. 8.42	13.90	12.90	.....	4.83
7- 2-37	Vita-Crop 10-20-0 (Not renewed for 1939)	....	G. 10.00	20.00	20.00	.....	.....
7- 2-37	Vita-Crop 10-38-0	....	G. 10.00	38.00	38.00	.....	.....
		51	F. 10.44	43.30	42.15	.....	1.17
2- 3-39	Vita-Crop 11-22-0	....	G. 11.00	.....	22.00	.....	.....
2- 3-39	Vita-Crop 16-20-0	....	G. 16.00	.....	20.00	.....	.....
	Chilean Nitrate Sales Corporation, New York, New York						
7- 2-37	Champion Brand Chilean Nitrate of Soda	....	G. 16.00	.....	.....	.....	.....
		31	F. 15.90	.....	.....	.....	.....
7- 2-37	Chilean Nitrate of Soda and Potash	....	G. 14.00	.....	.....	14.00	.....

*G, guarantee as shown in registration; F, found by analysis; boldface figures indicate deficiency.

1-11-39	New registration	....	G. 15.00	.....	.....	14.00	.....
7- 2-37	Old Style Chilean Nitrate of Soda (Not renewed for 1939)	....	G. 16.00	.....	.....	.....	.....
	The Colorado Fuel and Iron Corporation, Denver, Colorado						
6-14-37	Silver Tip Ammonium Sulphate	....	G. 20.00	.....	.....	.....	.....
		32	F. 20.38	.....	.....	.....	0.10
	The Ford Motor Company, Dearborn, Michigan						
7-12-37	Ford Ammonium Sulphate	....	G. 20.80	.....	.....	.....	.....
		58	F. 21.06	.....	.....	.....	0.06
	Inland Fertilizer Company, Los Angeles, California						
2- 7-38	Beacon Brand 6-10-8 (Not renewed for 1939)	....	G. 6.00	10.00	6.00	8.00	.....
	Liefgreen Seed Company, Phoenix, Arizona						
6-29-37	Liefgreen's 8-9-6	....	G. 8.00	.....	9.00	6.00	.....
		38	F. 8.22	9.30	8.78	6.00	2.57
	New Jersey Fertilizer Company, Jersey City, New Jersey						
10-24-38	N. J. Brand Bone Fertilizer (Not renewed for 1939)	....	G. 2.47	22.00	.....	.....	.....
		26	F. 2.88	28.50	13.60	.....	3.33
	N. V. Potash Export My., Inc., New York, New York						
3-14-38	Muriate of Potash	....	G.	.....	.....	50.50	.....
		55	F.	.....	.....	50.94	0.35
1-12-39	New registration	....	G.	.....	.....	50.00	.....
3-14-38	Sulfate of Potash	....	G.	.....	.....	48.50	.....
		33	F.	.....	.....	49.00	0.07
1-12-39	New registration	....	G.	.....	.....	48.00	.....

TABLE 2.—REGISTRATIONS. ANALYSES OF SAMPLES TAKEN (PER CENT)—Continued.

Reg. date	Manufacturer or agent and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
	Pacific Guano Company, Los Angeles, California						
11-22-37	Gaviota Cotton Special	....	G.* 10.00	38.00	38.00	.....	.....
4-26-38	Gaviota Garden and Lawn (Not renewed for 1939)	....	G. 6.00	9.00	9.00	6.00	.....
11-22-37	Gaviota Hi-Crop A (Not renewed for 1939)	....	G. 10.00	10.00	10.00	5.00	.....
11-22-37	Gaviota Producer A (Not renewed for 1939)	....	G. 8.00	8.00	8.00	4.00	.....
11-22-37	Gaviota Special A (Not renewed for 1939)	....	G. 9.00	9.00	9.00	2.00	.....
11-22-37	Gaviota Superphosphate	....	G.	18.00	18.00	.....	.....
11-29-37	Gaviota Yielder A	....	G. 4.00	12.00	12.00	4.00	.....
11-22-37	Pacific Guano Blood (Not renewed for 1939)	....	G. 13.00	.....	.....	.....	.....
1-12-39	Uramon	....	G. 42.00	.....	.....	.....	.....
	Pacific Portland Cement Company, San Francisco, California						
3-17-38	Empire (Soilkorective) No. 2 (Not renewed for 1939)	....	G.	.....	4.00	.....	.....
3-17-38	Empire (Soilkorective) No. 8 (Not renewed for 1939)	....	G.	.....	7.00	.....	.....
3-17-38	Empire (Soilkorective) No. 20 (Not renewed for 1939)	....	G.	.....	7.00	7.00	.....
	Peyton Packing Company, Inc., El Paso, Texas						
5- 4-38	Dried Blood Meal (Not renewed for 1939)	....	G. 12.00	.....	.....	.....	.....

*G, guarantee as shown in registration; F, found by analysis; boldface figures indicate deficiency.

	Plant Food Corporation, Los Angeles, California						
3-30-39	Super-Crop 4-16-0	....	G. 4.00	16.00	16.00	.....	.....
3-30-39	Super-Crop 5-12-0	....	G. 5.00	12.00	12.00	.....	.....
3-30-39	Super-Crop 6-9-6	....	G. 6.00	9.00	9.00	6.00	.....
3-30-39	Super-Crop 8-8-4	....	G. 8.00	8.00	8.00	4.00	.....
3-30-39	Super-Crop 10-20-0	....	G. 10.00	20.00	20.00	.....	.....
	Shell Chemical Company, San Francisco, California						
6-25-37	Shell Agricultural Ammonia	....	G. 81.00	.....	.....	.....	.....
		60	F. 81.00	.....	.....	.....	.....
6-25-37	Shell Sulphate of Ammonia	....	G. 20.60	.....	.....	.....	.....
		35	F. 20.80	.....	.....	.....	.....
	Soil-Aid Products Co., Salt Lake City, Utah						
3-20-39	Garden-Aid	....	G. 3.00	13.00	7.00	3.00	.....
3-20-39	Soil-Aid	....	G. 5.00	13.00	7.00	.....	.....
	Soil Builders, Inc., Orlando, Florida						
11- 4-37	Mineral Colloids	....	G.	22.00	.....	.....	.....
3-13-39	Min-Coll Brand Colloidal Phosphate (New brand name)	....	G.	22.00	.....	.....	.....
	Stauffer Chemical Company, Los Angeles, California						
7-13-37	Anchor Brand Superphosphate 18%	....	G.	.....	18.00	.....	.....
8-12-38	Anchor Brand Hi-Test Superphosphate 32% (Not renewed for 1939)	....	G.	.....	32.00	.....	.....
	Swift & Company Fertilizer Works, Los Angeles, California						
4-18-38	Bone Meal	....	G. 0.80	32.00	16.00	.....	.....
3- 7-39	Fish Meal	....	G. 10.00	6.00	3.00	3.00	.....
7-22-38	Swift's Blood Meal	....	G. 12.00	.....	.....	.....	.....

TABLE 2.—REGISTRATIONS. ANALYSES OF SAMPLES TAKEN (PER CENT)—Continued.

Reg. date	Manufacturer or agent and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
1-18-39	Swift's Bone Meal	....	G.* 3.00	.....	8.00	.....	.....
7-22-38	Swift's Red Steer Brand 4-8-0	....	G. 4.00	.....	8.00	.....	.....
7-22-38	Swift's Red Steer Brand 4-12-0	....	G. 4.00	.....	12.00	.....	.....
		19	F.* 4.97	13.20	12.00	.....	5.88
1-12-39	Swift's Red Steer Brand 6-9-0	....	G. 6.00	.....	9.00	.....	.....
7-22-38	Swift's Red Steer Brand 6-15-0	....	G. 6.00	.....	15.00	.....	.....
7-22-38	Swift's Red Steer 8-16-0	....	G. 8.00	.....	16.00	.....	.....
	(Not renewed for 1939)	22	F. 8.30	16.47	15.30	.....	5.69
2-23-39	Swift's Red Steer Brand 11-22	....	G. 11.00	.....	22.00	.....	.....
7- 6-37	Swift's Red Steer Brand Superphosphate 18%	....	G.	.....	18.00	.....	.....
7-22-38	Swift's Red Steer Tankage	....	G. 6.00	9.00	.....	.....	.....
		25	F. 6.56	9.30	7.55	.....	2.89
		27	F. 6.25	9.60	5.50	.....	5.48
3-23-39	Corrected registration	....	G. 6.00	.....	9.00	.....	.....
7- 6-37	Red Steer Brand Treble Superphosphate	....	G.	.....	45.00	.....	.....
		14	F.	49.20	45.70	.....	2.67
8-22-38	New registration	....	G.	.....	44.00	.....	.....
7- 6-37	Vigoro 4-12-4	....	G. 4.00	.....	12.00	4.00	.....
		23	F. 4.34	13.70	12.70	4.45	2.49
	Synthetic Nitrogen Products Corporation, New York, New York						
7- 9-37	Cal-Nitro	....	G. 20.50	.....	.....	.....	.....
		54	F. 21.04	.....	.....	.....	1.70
7- 9-37	Calcium Nitrate (nitrate of lime)	....	G. 15.50	.....	.....	.....	.....
		52	F. 15.80	.....	.....	.....	.....
11-29-37	Urea	....	G. 46.00	.....	.....	.....	.....
	(Not renewed for 1939)	53	F. 46.20	.....	.....	.....	0.28
1-12-39	Ureor	....	G. 40.00	.....	.....	.....	.....

*G, guarantee as shown in registration; F, found by analysis; boldface figures indicate deficiency.

4- 6-38	**Tovrea Packing Company, Phoenix, Arizona** Tovrea's Blood Meal	 57	G. 12.00 F. 12.26	.....	.....	.....	..... 15.20
12- 1-38	**Western Seed, Feed & Honey Company, Phoenix, Arizona** Gro-More 5-10 Fertilizer	....	G. 5.00	.....	10.00	.....	.....

TABLE 3.—UNREGISTERED FERTILIZERS SAMPLED AND ANALYZED (PER CENT).

Sample taken	Manufacturer and product	Lab. no.	Nitrogen (N)	Total phosphate (P_2O_5)	Available phosphate (P_2O_5)	Potash (K_2O)	Moisture
11-29-38	**Capital Fuel, Feed & Seed Company, Phoenix, Arizona** Vita-Crop 6-9-0 (Mixed to order)	50	F.* 6.23	13.70	13.18	.....	4.34
10-17-38	**Columbia Steel Corporation, San Francisco, California** Sulfate of Ammonia	34	F. 20.86	.....	.....	.....	0.05
12-15-38	**Pacific Guano Company, Los Angeles, California** Gaviota Special 10-20-0	56	F. 10.00	22.30	21.50	.....	2.60
12-15-38	**Swift & Co. Fertilizer Works, Los Angeles, California** Swift's Bone Meal (Note.—This company's registered fertilizer is "Swift's Bone Meal 3-8-0")	59	F. 4.67	20.60	10.10	.....	8.13

*F, found by analysis.

SUMMARY

Total fertilizers registered (7-1-37 to 4-15-39)		106
Arizona	30	
Out of state	76	
Number of fertilizer manufacturers registered		26
Arizona	5	
Out of state	21	
Number of samples taken and analyzed (chemical analysis)		60
Number of samples off guarantee		9

REASONS FOR UNSATISFACTORY REPORTS

Fertilizers deficient in nitrogen	5
Fertilizers deficient in available phosphate	6
Fertilizer deficient in potash	1
Fertilizers not registered at time of sampling	4
Tags did not show net weight of package	9
Fertilizers did not carry Arizona inspection fee stamps or tags	2
Guaranteed analysis on tag did not agree with that of registration	11