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COMMERCIAL FERTILIZERS

Report for 1949



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Chemist in Charge

**CONNECTICUT AGRICULTURAL EXPERIMENT
STATION, NEW HAVEN, CONNECTICUT**

CONTENTS

	PAGE
CONNECTICUT LAW AND REGULATIONS REGARDING COMMERCIAL FERTILIZERS	5
Text of the law as amended in 1949	6
Official definitions of fertilizer terms and materials	10
REGISTRATIONS	11
FERTILIZER INSPECTION FOR 1949	18
CLASSIFICATION OF FERTILIZER MATERIALS AND FERTILIZER TONNAGE	19
Mixed fertilizer tonnage	20
I. Raw materials chiefly valuable for nitrogen	20
II. Raw materials chiefly valuable for phosphoric acid	21
III. Raw materials chiefly valuable for potash	21
IV. Raw materials supplying nitrogen and phosphoric acid	21
V. Raw materials supplying nitrogen and potash	21
VI. Mixed fertilizers	21
Commercial mixtures	21
Special and home mixtures	22
State purchases of fertilizer	22
VII. Miscellaneous	22
MAINTENANCE OF GUARANTIES	23
TABLES OF ANALYSES	25
1. Materials supplying chiefly nitrogen	25
2. Superphosphate, etc.	28
3. Potash salts, etc.	29
4. Ground fish, bone, etc.	30
5. Mixed fertilizers	32
6. Sheep manure, etc.	42
7. Limestone and similar materials	44
8. Small package fertilizers	45
9. Other miscellaneous materials	48
INDEX	50

REPORT ON INSPECTION AND ANALYSIS OF COMMERCIAL FERTILIZERS, 1949

H. J. FISHER, *Chemist in Charge*¹

CONNECTICUT LAW AND REGULATIONS REGARDING COMMERCIAL FERTILIZERS

The fertilizer law of 1882 was the first Connecticut law to require the registration of all commercial fertilizers and the payment of an analysis fee of ten dollars "for each of the fertilizing ingredients contained or claimed to exist in said fertilizer". It is interesting to note that the wording of this old law did not restrict the ingredients on which fees were paid to nitrogen, phosphoric acid and potash as did the law of 1919 that eventually succeeded it. It is true that in the administration of the 1882 law analysis fees were exacted for guarantees of nitrogen, phosphoric acid and potash only, but this was done on the stated assumption that only these elements were "those whose determination in an analysis is necessary for an evaluation"².

The fertilizer law passed in 1919 specifically restricted those components on which an analysis fee should be paid to nitrogen, phosphoric acid and potash, and this law remained on the books for thirty years, becoming Chapter 319 of the 1949 revision of the General Statutes. Had the more general language of the 1882 statute persisted it might not have been necessary to revise the law even now; a change in regulations might have sufficed. But modern knowledge that other elements than nitrogen, phosphorus and potassium were sometimes needed as fertilizer applications had led to the appearance on the market of commercial fertilizers containing guaranteed amounts of magnesium and boron and other elements besides the primary three, and the law as it now stood made no provision for compensating the state for the extra work necessary in checking such additional guarantees, and in fact under a strict construction the law could have been interpreted to forbid guarantees of any ingredients other than nitrogen, phosphoric acid and potash. In order to bring the law up to date in this respect a bill was presented to the 1949 legislature to revise the fertilizer law so that other elements than nitrogen, phosphorus and potassium could be guaranteed if the same registration fee as was required for each of the primary components was paid for each additional element guaranteed. This bill was adopted by the General Assembly. The text of the amended law follows:

¹ Analyses were made by Messrs. O. L. Nolan and G. R. Nelson and Miss Helen Kocaba; inspection and sampling by Mr. Richard Nichols; and compilations by Mr. Nolan and Miss Lillian Goffi.

² Conn. Agr. Expt. Sta., Annual Report for 1883, p. 13.

General Statutes, 1949 Supplement, Chapter 319

Fertilizers

SEC. 6733. Definition. The term "commercial fertilizers", as used in this chapter, shall be construed to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring or soil amendment purposes, except barnyard manure and stable manure which have not been artificially treated or manipulated, marl and lime. Cottonseed meal, rapeseed meal, castor pomace and all other vegetable products used as fertilizers, including the ashes of cotton hulls and wood ashes, shall be included as fertilizers within the meaning of this chapter and a separate analysis fee shall be paid on each different grade which is sold or offered for sale in the state. The person responsible for paying the fees prescribed in section 583a may deduct from the total tonnage sold such sales of cottonseed meal or other vegetable products as are made to anyone who gives a written certificate on a form supplied by the **Connecticut Agricultural Experiment Station** stating that the material bought by him was to be used exclusively for feed and not for fertilizer. Such certificate shall be filed with the director of said station with the report of tonnage sold. The term "available phosphoric acid" shall mean the sum of the water-soluble and citric-soluble phosphoric acid determined by the methods referred to in section 6738. The term "phosphoric acid" shall mean phosphoric anhydride (P_2O_5), and the term "potash" shall mean potassium oxide (K_2O).

SEC. 581a. Commercial fertilizer package to be branded. Any person, company, manufacturer, dealer or agent, before selling or offering for sale in this state any commercial fertilizer or fertilizer materials except stable manure in its original condition, shall brand or attach to each bag, barrel or package the following items, preferably in the following order: (1) Weight of each package, in pounds; (2) name and address of the manufacturer or of the person responsible for the statements of the guarantee; (3) brand name and grade; (4) guaranteed analysis. The guaranteed analysis shall be in the following order and form: (1) Total nitrogen (minimum percentage); (2) available phosphoric acid (minimum percentage); (3) soluble potash (minimum percentage); (4) additional plant food elements, if guaranteed (minimum percentage expressed as the elemental form). Unacidulated mineral phosphatic materials and basic slag shall be guaranteed as to both total and available phosphoric acid and the degree of fineness. In the case of bone, tankage and other natural organic phosphatic materials only the total phosphoric acid need be guaranteed. Additional plant food elements, determinable by chemical control methods, may be guaranteed only by permission of the director of the Connecticut Agricultural Experiment Station. A statement of the inclusion of leather in its various forms, wool waste, hair or any inert nitrogenous material shall be printed on the bag, unless, by processing, the availability of the nitrogen of these materials shall have been rendered satisfactory as determined by the official methods of the Association of Official Agricultural Chemists. When potash is derived from sulphate or carbonate of potash, it may be so claimed in the markings on the package. No claim or

guarantee for less than eighty-two hundredths of one per cent of nitrogen, or for less than one per cent of phosphoric acid, or for less than one per cent of potash shall be regarded in the registration or analysis of any commercial fertilizer.

SEC. 6735. Certificate required before sale. Before any commercial fertilizer shall be sold, offered or exposed for sale, the person who shall cause it to be sold or offered for sale within this state shall file with the director of the **Connecticut Agricultural Experiment Station**, on forms to be supplied by said station, two certified copies of the statement prescribed in section 581a, and a permit allowing the director or his deputy to examine the books of the person registering the brand or brands, in order to verify, if desired, the reports of such person as to the tonnage sold. On receipt of such statements and on compliance with the other provisions of this chapter, the director of said station shall issue a certificate of registration for the fertilizer or fertilizers concerned, which shall be in force until the succeeding December thirty-first, and he shall annually publish a list of the brands so registered.

SEC. 583a. Analysis and tonnage fees. For the purpose of defraying the expenses connected with the inspection of commercial fertilizers sold or offered for sale within this state, all persons offering for sale commercial fertilizers within the state shall, at the time of issuance of the certificate of registration and on January first of each year, pay to the director of the **Connecticut Agricultural Experiment Station** an analysis fee of ten dollars for each fertilizing ingredient contained or claimed to exist in each of such fertilizers as they propose to sell during the year. The fertilizing ingredients on which fees shall be paid are nitrogen, phosphoric acid, potash and any additional guaranteed plant food elements. On the first days of January and July in each year, each person offering for sale commercial fertilizers within the state shall make a statement under oath, which shall be filed with the director of the **Connecticut Agricultural Experiment Station** and which shall set forth the number of tons of two thousand pounds of each fertilizer, fertilizer material, or materials sold by him as fertilizers during the preceding six months. On the first days of January and July in each year, he shall pay to the director of said station an additional fee of six cents per ton of two thousand pounds of fertilizer, fertilizer material or materials used as fertilizer sold in this state in accordance with the sworn statement required above; but, when the statements and payments above prescribed shall have been made on any brand of fertilizer by any person, no other such statements or payments of analysis fees on said brand shall be required. Neither the director nor any of his deputies shall disclose any information contained in such tonnage statements, except in cases in which it is necessary to publish such information for the enforcement of the provisions of the chapter, and except that statistics on the consumption of different grades of mixed fertilizers and fertilizer materials in the state may be published by the director or his deputy if no disclosure is made of the operations of any person. Nothing contained in this chapter shall apply to the delivery of fertilizers or fertilizer materials to regular fertilizer factories to be used

for manufacturing purposes, nor to fertilizers and fertilizer chemicals sold to the **Connecticut Agricultural Experiment Station** if used solely for experiments for the advancement of the science of agriculture.

SEC. 6737. Disposition of fees. The payments required by the provisions of section 583a shall be paid by the director to the treasurer of said **Connecticut Agricultural Experiment Station** and shall be expended in defraying the expenses of inspecting and analyzing commercial fertilizers and in preparing the results for publication, and, should there be a surplus, it shall be set aside as a separate fund to cover any deficiency in the income necessary to defray such expenses in subsequent years. If, at the end of any five-year period, the amount of such surplus shall largely exceed the necessary cost of inspection, the director shall recommend the amendment of this chapter so that the income hereunder will not exceed the actual cost of properly inspecting and analyzing commercial fertilizers.

SEC. 6738. Analyses, how made. The director of said station shall cause one or more analyses to be made annually of all commercial fertilizers registered in the state. The director and his authorized deputies shall have power to enter any car, warehouse, store, building, boat, vessel or place supposed to contain fertilizers, for the purpose of inspecting and sampling, and shall have power to take a sample not exceeding two pounds in weight from any brand of fertilizer. The director of said station or his duly authorized representatives shall take all samples in duplicate and where possible in the presence of at least one witness, and in the presence of such witness, shall seal the samples, and shall, at the time of taking, tender and, if accepted, deliver to the person apparently in charge one of such samples, and shall cause the other of such samples to be analyzed. When samples shall be taken from fertilizers in bags, a tube shall be used, and it shall be inserted at one end of the bag and shall pass substantially the entire length of the bag, so as to take a core of the material being sampled from substantially the entire length of the bag. Samples thus taken from individual bags shall be thoroughly mixed, and the official samples shall be taken from the mixture so drawn by the method known as "quartering". Samples of fertilizer taken as herein provided shall be taken from at least five per centum of the separate original unopened packages in the lot, for the mixture from which the official samples shall be taken. If less than one hundred bags are in the lot, at least five bags shall be sampled; if less than five bags, all shall be sampled. Broken packages shall not be sampled. In no case shall a sample be official, or one upon which legal action can be instituted, unless it shall have been taken either by a duly authorized inspector, as specified above, or in the presence of two competent disinterested witnesses who shall certify under oath that the sample was drawn exactly as required by the provisions of this chapter. The official methods of the association of official agricultural chemists of the United States in force at the time shall be followed in all statements of guaranties, sampling and analytical work in connection with administering the provisions hereof. The director shall issue at least one bulletin or report annually, setting forth the analyses of fertilizers made under the

provisions of this chapter and such other information concerning the operation or violations of this chapter, or otherwise pertaining to the sale, composition and agricultural value of fertilizers, as he may consider expedient.

SEC. 6739. Penalties. Any person who shall sell any commercial fertilizer for which the required statement of tonnage sold has not been made or without having paid the fees required by section 583a, or shall have rendered any false statements, or shall not permit the director or his deputy to verify the statement of tonnage sold, or shall sell fertilizers found by the station analysis not to contain the guaranteed percentage of any one of the ingredients mentioned in the guaranteed analysis in accordance with section 581a, or shall label any fertilizer with a false and misleading guaranty, or shall interfere in any way with any official in the discharge of his duty as prescribed in this chapter, shall be fined not more than five hundred dollars. Any person who shall violate any provision of this chapter for which no penalty is specifically provided, shall be fined not less than five nor more than one hundred dollars.

This law contains the following new provisions:

(1) An additional fee of \$10.00 must be paid for each component other than N, P_2O_5 and K_2O that is guaranteed. For instance, the registration fee for a complete fertilizer containing 2 per cent of added magnesium will be \$40.00, not \$30.00.

(2) Permission of the director of the Connecticut Agricultural Experiment Station is required before fertilizers containing added secondary fertilizer components may be registered. This provision was inserted primarily to prevent the sale of fertilizers containing injuriously large amounts of such materials as borax.

(3) Additional plant food elements must be declared as percentages *expressed as the elemental form*, i.e., a mixed fertilizer containing added magnesium must declare 2 per cent of Mg, not 3.32 per cent of MgO .

(4) Unacidulated mineral phosphatic materials (for instance, rock phosphate) and basic slag must be guaranteed as to both total and available P_2O_5 and the degree of fineness, but only the available P_2O_5 may be included in the brand name.

(5) In the case of bone, tankage and other natural organic phosphatic materials, the manufacturer is permitted to declare total P_2O_5 only; he may declare available P_2O_5 also if he desires. (It is not permissible to use the total P_2O_5 guarantee as part of the brand name.)

(6) Specific permission is given to the Agricultural Experiment Station to publish figures on the tonnage consumption of different fertilizers "if no disclosure is made of the operations of any person". Annual tonnage reports have been published for some years at the request of the fertilizer industry itself; the law was amended merely to leave no doubt of the legality of printing this information.

The law in regard to the registration of vegetable meals has not been changed. Cottonseed, linseed, soybean and peanut meals when sold or used for fertilizer purposes must be registered as fertilizers and a \$10.00

registration fee paid for each brand. The registration of any of these materials as feeding stuffs does not cover their use for fertilizer purposes, and no claim by a manufacturer that he sold his product for feed purposes only excuses him from the obligation to register it as a fertilizer if any of it is sold or used in this state for fertilizer purposes. In fact, a strict construction of the statute would require the manufacturer to register as fertilizers all his brands of vegetable meals and to pay the fertilizer tonnage tax on all of his tonnage sold, except that portion for which he could present a written certificate from the purchaser that "the material bought by him was to be used exclusively for feed and not for fertilizer". In practice, the Station does not insist on this, but requires the payment of tonnage taxes only on those tonnages of meal that have been reported to it by local dealers and consumers as having been sold or used as fertilizer. There is no tonnage tax on meals used as feeding stuffs.

Official Definitions of Fertilizer Terms and Materials

At the meeting of the Association of Official Agricultural Chemists in Washington on October 13, 1948, that association voted to discontinue the issuance of official definitions of fertilizer terms and materials and to relinquish this function to the Association of American Fertilizer Control Officials. The regulations of the latter association, as amended at its meeting in Washington on October 7, 1949, were not available for reproduction at the time this bulletin was written. Copies of these regulations may be obtained from B. D. Cloaninger, Secretary-Treasurer, Association of American Fertilizer Control Officials, Drawer 392, Clemson, South Carolina.

REGISTRATIONS

Late Registrations for 1948

To the brands registered for 1948 in our last report should be added the following:

Archer-Daniels-Midland Co., Minneapolis, Minn.

Archer Quality 32% Protein Old Process Linseed Oil Meal (Fertilizer)

Imperial Commodities Corp., 70 Pine St., New York, N. Y.

Cottonseed Meal, Prime 41% Protein

E. H. Rollins & Sons, Granby, Conn.

Soybean Meal

Registrations for 1949

For 1949, 59 firms and individuals registered 280 brands of fertilizers at this Station for sale in the State. As required by statute, the brands are listed as follows:

Agricultural Supply Co., P. O. Box 57, West Haven, Conn.

Yale Special Mixture 8-6-2

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Arcadian the American Nitrate of Soda

The American Agricultural Chemical Co., No. Weymouth 91, Mass.

AA Quality Fertilizer 5-8-7

AA Quality Fertilizer 5-10-10

Agrico Broadleaf Evergreens 6-10-4

Agrico Country Club Fertilizer 6-10-4

Agrico Country Club Fertilizer 8-6-2

Agrico for Corn 3-12-6

Agrico for Gardens 5-10-5

Agrico for Lawns, Trees and Shrubs 6-10-4

Agrico for New England 5-8-7

Agrico for Potatoes 5-10-10

Agrico for Seeding Down 3-12-12

Agrico for Tobacco 6-3-6

Agrico for Top Dressing 7-7-7

Agrico Phosphate and Potash 0-14-14

Agrinite

Bonemeal

18% Normal Superphosphate

Pulverized Sheep Manure

American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.

20.6% AERO Cyanamid, Granular

Aero Cyanamid, Special Grade

Aero-Phos Florida Natural Phosphate

Aeroprills Ammonium Nitrate Fertilizer

Apothecaries Hall Co., Waterbury, Conn.

Bone Meal 2.25

Bone Meal 3.70

Castor Pomace

Cotton Hull Ashes

Dry Ground Fish

Liberty Fertilizer 0-14-14

Liberty Fertilizer 4-12-4

Liberty Fertilizer 5-10-5

Liberty Fertilizer 5-10-10

Apothecaries Hall Co., Waterbury, Conn.—Cont.

Liberty Fertilizer 5-10-10 with 2% Magnesium
Liberty Green Gro Fertilizer 6-7-4
Liberty High Grade Market Gardeners 5-8-7
Liberty High Grade Market Gardeners with 2% Magnesium 5-8-7
Liberty High Grade Market Gardeners with Sulphate of Potash 5-8-7
Liberty Special for Fruit and Grass 7-7-7
Liberty Tobacco Mixture 6-3-6
Liberty Tobacco Mixture with Castor Pomace—Cotton Hull Ashes 6-3-6
Liberty Tobacco Mixture with Castor Pomace—Sulphate Potash 6-3-6
Liberty Tobacco Mixture with Cotton Hull Ashes 6-3-6
Liberty Tobacco Starter 4-10-0
Liberty Tobacco Starter 5-5-15
Muriate of Potash
Nitrate of Potash
Precipitated Bone
Sheep Manure
Sulphate of Ammonia
Sulphate of Potash
Superphosphate

Archer-Daniels-Midland Co., Minneapolis, Minn.

Archer Quality 32% Protein Linseed Oil Meal (Fertilizer)

Armour Fertilizer Works, 120 Broadway, New York 5, N. Y.

Armour's Big Crop Fertilizer 0-14-14
Armour's Big Crop Fertilizer 5-8-7
Armour's Big Crop Fertilizer 5-10-10
Armour's Big Crop Fertilizer 7-7-7
Armour's Big Crop Fertilizer 8-16-16¹
Armour's Big Crop Fertilizer 20% Superphosphate
Armour's Big Crop Fertilizer Tobacco Plant Bed Special 4-12-4
Armour's Big Crop Fertilizer Tobacco Special 6-3-6
Armour's Pulverized Sheep Manure
Armour's Velvet Green Plant Food 5-10-5

Ashcraft-Wilkinson Co., Atlanta, Ga.

Cow-Eta Brand 36% Prime Quality Cottonseed Meal
Cow-Eta Brand 41% Protein Cottonseed Meal

Associated Seed Growers, Inc., Milford, Conn.

Asgrow Lawn Food 10-6-4
Clark's Tip Top 5-8-7 Fertilizer
Japedizer 8-6-4

The F. A. Bartlett Tree Expert Co., Stamford, Conn.

Bartlett Green Tree Food 6-8-6

The Buckeye Cotton Oil Co., Cincinnati, Ohio

Buckeye 41% Protein Cottonseed Meal for fertilizer

Central Soya Co., Inc., Fort Wayne, Ind.

Central 41% Protein Expeller Soybean Oil Meal

Chilean Nitrate Sales Corp., 120 Broadway, New York 5, N. Y.

Chilean Nitrate of Soda—Champion Brand

Consolidated Chemical Industries, Inc., 630 Fifth Ave., New York, N. Y.

Steamed Bone Meal

Consolidated Rendering Co., 178 Atlantic Ave., Boston 10, Mass.

Corenco 0-14-14 Top Dresser
Corenco 0-20-20
Corenco 4-12-4 Complete Manure

¹ Later substituted by Armour's Special Ornamental Fertilizer 10-6-4.

Consolidated Rendering Co., 178 Atlantic Ave., Boston 10, Mass.—Cont.

Corenco 4-12-16 Ladino Special
Corenco 5-8-7 Potato and General Crop
Corenco 5-10-5 Home Garden
Corenco 5-10-5 Onion Special—Super Truck
Corenco 5-10-10 Peerless Potato
Corenco 6-3-6 Special Tobacco Grower
Corenco 7-7-7 Complete Fruit and Top Dressing
Corenco 8-6-4 Landscape
Corenco Ground Bone
Corenco Sheep Manure
Corenco Superphosphate 20%
Ground Tankage
Muriate of Potash
Spurz-on

The Davey Tree Expert Co., Inc., Kent, Ohio

Davey Shredded Manure
Davey Tree Food 12-4-4

The Davison Chemical Corp., 20 Hopkins Place, Baltimore 3, Md.

Davco Granulated Fertilizer 0-14-7
Davco Granulated Fertilizer 0-14-14
Davco Granulated Fertilizer 0-20-20
Davco Granulated Fertilizer 3-12-6
Davco Granulated Fertilizer 4-12-4
Davco Granulated Fertilizer 5-8-7
Davco Granulated Fertilizer 5-10-5
Davco Granulated Fertilizer For the Home 5-10-5
Davco Granulated Fertilizer 5-10-10
Davco Granulated Fertilizer 7-7-7
Davco Granulated Fertilizer 8-16-16
Davco Granulated Potato Special 5-10-10 (2% MgO)
Davco Granulated Superphosphate 20%
Greenway Brand Bone Meal (*Registered for Scarlett & Co.*)

The Doughten Seed Co., 151 Twelfth St., Jersey City, N. J.

Faith Lawn Diet 8-6-4
Faith Soil Food with Insect Control 5-9-4

E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

DU PONT NU GREEN Fertilizer Compound
DU PONT URAMON Fertilizer Compound

Eastern States Farmers' Exchange, Inc., West Springfield, Mass.

Castor Pomace
Eastern States 0-19-19 W/Borax
Eastern States 0-20-20
Eastern States 5-10-5 Garden
Eastern States 5-10-10
Eastern States 5-15-10
Eastern States 5-15-15
Eastern States 8-4-8 Tobacco
Eastern States 8-12-16 LCS
Eastern States 8-16-16
Eastern States 8-16-16 SM
Eastern States 10-10-10
Eastern States Muriate of Potash
Eastern States Plant Starter
Eastern States 20% Superphosphate—Granulated and Pulverized

Faesy & Besthoff, Inc., 220 E. 42nd St., New York 17, N. Y.

Dried Blood
Pure Bone Meal
Rose Food 8-10-4

- Ford Motor Co., 3000 Schaefer Road, Dearborn, Mich.**
Ford Ammonium Sulphate
- Frank's Market Garden, 1398 Allen St., Springfield, Mass.**
For More Growth
- Goulard & Olena, Inc., Skillman, N. J.**
G & O Ground Bone
G & O 10-6-4 High Organic No-Filler Fairway & Lawn Dressing
G & O Raw Bone
G & O Rose Food 7-8-5
- A. H. Hoffman, Inc., Landisville, Lancaster County, Pa.**
Hoffman Cow Manure (Dehydrated)
Hoffman Sheep Manure (Kiln-Dried)
- Humphreys-Godwin Co., Memphis, Tenn.**
Dixie Brand 41% Cottonseed Meal
- International Minerals & Chemical Corp., Woburn, Mass.**
International 5-10-10-1
International Muriate of Potash 60%
International Potato 5-10-10-2
International 20% Superphosphate
International Tobacco 6-3-6
- Spencer Kellogg & Sons, Inc., 98 Delaware Ave., Buffalo 5, N. Y.**
Castor Pomace
Spencer Kellogg's 34% Protein Old Process Linseed Oil Meal
Spencer Kellogg's 44% Protein Toasted Soybean Oil Meal Solvent Extracted
- L. B. Lovitt & Co., Memphis, Tenn.**
"Lovit Brand" 41% Protein Cottonseed Meal
- Marianna Sales Co., 510 Cotton Exchange Bldg., Memphis, Tenn.**
"White Mule Brand" 41% Protein Cottonseed Meal
- McArdle's Seed Store, 388 Greenwich Ave., Greenwich, Conn.**
Baugh's Raw Bone Meal
- McCormick & Co., Inc., Baltimore 2, Md.**
Hy-Gro 13-26-13
- "Na-Churs" Plant Food Co., 121-127 Garden St., Marion, Ohio**
"Na-Churs" Plant Food 5-5-10
"Na-Churs" Plant Food 5-10-5
- Norwood Brand Fertilizer Co., No. Reading, Mass.**
Norwood Brand Sheep Manure
- Old Deerfield Fertilizer Co., Inc., So. Deerfield, Mass.**
Double Sulphate of Potash Magnesia
Old Deerfield Castor Pomace
Old Deerfield Cotton Hull Ash 30%
Old Deerfield Cotton Hull Ash 35%
Old Deerfield Dry Ground Fish
Old Deerfield High Grade Sulfate of Potash
Old Deerfield Muriate of Potash
Old Deerfield Nitrate of Potash
Old Deerfield Sulphate of Ammonia
Old Deerfield 20% Superphosphate
Old Deerfield 5-5-15 Tobacco Starter
Old Deerfield 5-8-7
Old Deerfield 5-10-10
Old Deerfield 6-3-6 Complete Tobacco

Old Deerfield Fertilizer Co., Inc., So. Deerfield, Mass.—Cont.

Old Deerfield 7-7-7 Fertilizer
Precipitated Bone
Triple Superphosphate

Olds & Whipple, Inc., 168 State St., Hartford, Conn.

Horn and Hoof Meal
Nitrate of Potash
O & W Bone Meal
O & W Castor Pomace
O & W Cotton Hull Ash
O & W Luxura 5-8-6
O & W Menhaden Dry Ground Fish
O & W Sulphate of Potash
O & W Superphosphate
O & W Triple Superphosphate
O & W Uramon Fertilizer Compound
O & W 0-14-14 Fertilizer
O & W 4-8-4 Complete Lawn Grass Fertilizer
O & W 4-12-4 Market Garden Fertilizer
O & W 5-3-5 Complete Tobacco Fertilizer
O & W 5-3-5 Complete Tobacco Fertilizer Potash derived from Cotton Hull Ash
O & W 5-5-15 High Grade Tobacco Starter and Potash
O & W 5-8-7 Potato and General Purpose Fertilizer
O & W 5-8-7 Potato and General Purpose Fertilizer with Sulphate of Potash
O & W 5-10-5 Fertilizer
O & W 5-10-10 Potato Fertilizer
O & W 5-10-10 Potato Fertilizer 2% MgO
O & W 6-3-6 Blue Label Tobacco Fertilizer
O & W 6-3-6 Blue Label Tobacco Fertilizer Potash derived from Cotton Hull Ash
O & W 6-3-6 Pomace Base Fertilizer
O & W 6-3-6 Pomace Base Fertilizer Potash derived from Cotton Hull Ash
O & W 7-7-7 Top Dressing and Grass Fertilizer
Precipitated Bone Phosphate
Sheep Manure
Sulphate of Potash and Magnesia

Plantspur Products Co., 1072 West Side Ave., Jersey City 6, N. J.

Plantspur Turf-Builder & Fertilizer 4-4-2

The Frank S. Platt Co., Inc., 450 State St., New Haven, Conn.

Platt's Special 10-5-5 Lawn Fertilizer

Premier Peat Moss Corp., 535 Fifth Ave., New York 17, N. Y.

Premier-Nure

The Pulverized Manure Co., 503 Exchange Bldg., Chicago 9, Ill.

Wizard Brand Cow Manure
Wizard Brand Pulverized Sheep Manure

Ralston Purina Co., St. Louis 2, Mo.

Purina Plant Food 5-10-5

Ra-Pid-Gro Corp., Dansville, N. Y.

Ra-Pid-Gro

Ray & King, P. O. Box 696, Lubbock, Tex.

Bulk, Cotton Bur Ashes containing water soluble K_2O

The Rogers & Hubbard Co., Portland, Conn.

Alfalfa Fertilizer
Castor Pomace
Corn Fertilizer
Cotton Hull Ash
Double Strength Fertilizer
Dry Ground Fish

The Rogers & Hubbard Co., Portland, Conn.—Cont.

Garden Fertilizer
General Crop Fertilizer
Gro-Fast Bone Meal
Gro-Fast Cow Manure
Gro-Fast Plant Food
Gro-Fast Sheep Manure
High Potash Fertilizer
Hubbard Golf Course Fertilizer
Muriate of Potash
Potato Fertilizer
Seeding Fertilizer
Superphosphate
Tobacco Grower
Top Dressing
Vegetable Fertilizer

Ruhm Phosphate & Chemical Co., Mt. Pleasant, Tenn.

Red Seal Brand Ruhm's Phosphate Rock 30%

Saratoga Laboratories, Inc., Saratoga Springs, N. Y.

TraceL

O. M. Scott & Sons Co., Marysville, Ohio

Scott's Turfbuilder 9-7-4
Scott's Weed & Feed 7-11-5

Sears, Roebuck and Co., 925 S. Homan Ave., Chicago 7, Ill.

Cross Country Sheep Manure

Sewerage Commission of the City of Milwaukee, P. O. Box 2079, Milwaukee, Wis.

Milorganite

M. L. Shoemaker, Div. Wilson & Co., Inc., Philadelphia 34, Pa.

M. L. Shoemaker's "Swift-Sure" Tobacco Starter

Smith Agricultural Chemical Co., P. O. Box 1379, Columbus 16, Ohio

Greens and Fairway Mixture 10-6-4
Sacco Plant Food 4-12-4
Wedo Lawn Fertilizer with 2,4-D, 6-10-4

Smith-Douglass Co., Inc., Norfolk, Va.

Smith 5-8-7 Fertilizer
Smith Square Deal Guano 5-10-10

Stump & Walter Co., 132 Church St., New York 8, N. Y.

Sawco Acidulous Fertilizer 4-12-4
Sawco Bone Fertilizer 2.47-22.00
Sawco Bulb Fertilizer 5-10-5
Sawco Economy Fertilizer 5-10-5
Sawco Emerald Grass Fertilizer 4-12-4
Sawco General Garden Fertilizer 4-12-4
Sawco Prize Winner Fertilizer 6-12-4
Sawco Rose Food 4-12-4
Sawco Superior Sulphate of Ammonia
Sawco Superphosphate 0-20-0
Sawco Treewiz 8-6-2
Sawconure 2-1-1

Swift & Co., 25 Faneuil Hall Sq., Boston 9, Mass.

Blenn 5-10-5
Brimm 5-10-10
Red Steer 5-8-7
Red Steer 10-6-4

Swift and Co., 25 Faneuil Hall Sq., Boston 9, Mass.—Cont.

Swift's 41% Protein Cottonseed Meal
Vigoro 4-12-4

Tennessee Corp., Lockland, Cincinnati 15, Ohio

Loma 5-10-5
Loma 8-8-8 Mineralized

I. P. Thomas & Son Co., 721 Market St., Camden, N. J.

Castor Pomace
I. P. Thomas 5-8-7
I. P. Thomas 5-10-5
I. P. Thomas 5-10-10
I. P. Thomas 7-7-7
Superphosphate 20%

Van Iderstine Co., Railroad & Greenpoint Ave., Long Island City, N. Y.

Vico Steamed Bone Meal—Fertilizer

Walker-Gordon Laboratory Co., Plainsboro, N. J.

Bovung

F. H. Woodruff & Sons, Inc., Milford, Conn.

Gro-Sod 10-6-4

Woodruff Fertilizer Works, Inc., No. Haven, Conn.

Baker's Castor Pomace
Woodruff's 0-14-14 Fertilizer
Woodruff's 5-8-7 Fertilizer
Woodruff's 5-8-10 Fertilizer
Woodruff's 5-10-5 Fertilizer
Woodruff's 5-10-10 Fertilizer
Woodruff's 7-7-7 Fertilizer
Woodruff's 8-16-16 Fertilizer
Woodruff's 10-6-4 Lawn & Tree Food
Woodruff's Tobacco Fertilizer 6-3-6
Woodruff's Tobacco Starter 5-5-15

FERTILIZER INSPECTION FOR 1949

The Connecticut fertilizer law does not provide for compulsory limitation of the grades of fertilizers that may be sold in this State, nor does any other New England state have such legal restrictions. The New England agronomists have, however, from time to time compiled lists of recommended fertilizer ratios and minimum grades that, in their opinion, would meet all the requirements of New England agriculture. To a large extent manufacturers supplying the Connecticut market have abided by these suggestions, as is shown by the fact that in recent years about 86 per cent of the mixed fertilizer tonnage sold in Connecticut has been of approved grades.

At a conference of agronomists, representing the Storrs Agricultural Experiment Station and the soils department and tobacco laboratory of the Connecticut Agricultural Experiment Station, held at New Haven on January 12, 1949, to consider suggested changes in the fertilizer law, it was agreed that the following fertilizer ratios and minimum grades were sufficient to meet the needs of Connecticut agriculture:

<i>Ratio</i>	<i>Minimum Grade</i>
0-1-1	0-14-14
0-1-2	0-10-20
1-1-1	7- 7- 7
1-1-3	5- 5-15 (Tobacco)
1-2-1	5-10- 5
1-2-2	5-10-10
2-1-2	6- 3- 6 (Tobacco)
3-2-3	6- 4- 6 (Tobacco)
3-4-4	6- 8- 8
5-8-7	5- 8- 7

During the season the Station agent has collected samples of all registered brands that could be found on the market. Certain registered fertilizer materials, particularly vegetable meals, are purchased almost wholly by tobacco growers for their own use from sources outside the State. Most tobacco growers submit samples of their purchases to this Station for analysis but, because such samples are not officially taken, the results of their analyses are not included in this report. The following tabulation does, however, list the total number of samples analyzed, both official and unofficial, of each class of fertilizer, as well as the tonnage sold in the period between July 1, 1948 and June 30, 1949. These tonnage figures do not include fertilizer distributed under the Federal Agricultural Adjustment Program.

CLASSIFICATION OF FERTILIZER MATERIALS AND FERTILIZER TONNAGE

(Tonnage is for the period July 1, 1948 to June 30, 1949)

	Page	No. of samples	Tonnage	
I. Containing chiefly nitrogen:				
Nitrate of ammonia	25	2	30	
Nitrate of soda	25	10	2,044	
Sulphate of ammonia	25	2	30	
Cyanamid and urea	25, 26	8	208	
Castor pomace	26	9	4,860	
Cottonseed meal	26	149	11,712	
Horn and hoof meal	27	3	81	
Linseed meal	27	12	960	
Peanut meal	27	4	.....
Soybean meal .....	.....	10	345	20,270
II. Containing chiefly phosphoric acid:				
Superphosphate 18%	28	1	1,959	
20%	28	14	4,549	
47%	28	3	66	
Precipitated bone	28	10	551	7,125
III. Containing chiefly potash:				
Muriate of potash	29	7	925	
Sulphate of potash	29	6	227	
Sulphate of potash-magnesia .....	.....	2	96	
Cottonhull ashes	29	22	1,097	2,345
IV. Containing nitrogen and phosphoric acid:				
Dry ground fish	30	17	1,518	
Ground bone	30	15	838	
Other materials	31	2	778	3,134
V. Containing nitrogen and potash:				
Nitrate of potash	29	4	228	228
VI. Mixed fertilizers:				
Commercial mixtures	32	181	54,959 ¹	
Special and home mixtures .....	.....	118	356	55,315
VII. Miscellaneous:				
Sheep manure, etc.	42	15	314	
Limestone and similar materials	44	5	.....
Fertilizers sold in small packages	45	34	.....
Other miscellaneous materials	46	25	.....
Check meals and fertilizers .....	.....	60	.....
		.....	.....	314
Totals		750		88,731

¹ For distribution of this tonnage see next page.

Mixed Fertilizer Tonnage

Grades Approved for Connecticut

Grade	Tons	Grade	Tons
0-14-14	1,691	6- 3- 6	14,580
0-19-19	421	7- 7- 7	3,511
0-20-20	602	8- 4- 8	1,016
5- 5-15	887	8- 8- 8	3
5- 8- 7	10,749	8-16-16	1,269
5-10- 5	1,301	10-10-10	518
5-10-10	9,820		
		Total	46,368

Other Grades (Over 50 tons)

2- 1- 1	401	5-15-10	791
3-12- 6	495	5-15-15	264
3-12-12	251	6- 7- 4	103
4- 8- 4	604	6- 8- 6	129
4-10- 0	56	6-10- 4	310
4-12- 4	2,569	8- 6- 2	383
4-12-16	170	8- 6- 4	494
5- 3- 5	521	8-12-16	275
5- 8- 5	172	9- 7- 4	140
5- 8-10	143	10- 6- 4	135
		Total	8,406

(Less than 50 tons)

0.9-0.9-0.9	2	8- 7- 3	25
3.5-3.5-1.5	24	8-10- 4	1
4- 4- 2	17	10- 5- 5	29
5- 8- 6	14	10-20- 0	10
5- 9- 4	1	12- 4- 4	7
7- 8- 5	10	23-21-17	1
7-11- 5	44		
		Total	185

Grand Total 54,959

I. Raw Materials Chiefly Valuable for Nitrogen

Sulphate of ammonia is the cheapest source of nitrogen, and probably supplies a large proportion of the nitrogen in ordinary commercial mixed fertilizers. However, tobacco growers are much the largest consumers of fertilizer in Connecticut, and these growers demand that their nitrogen be in organic form, and the unit value of their crop is so high that they can afford to pay the price. This explains why, even though the wholesale value of a ton of sulphate of ammonia is only \$2.32 for each unit of nitrogen, while a ton of cottonseed meal costs \$9.94 per unit of nitrogen, 17,877 tons of vegetable meals were sold in Connecticut for fertilizer use during 1949, as against only 30 tons of sulphate of ammonia.

Analyses of the 42 official samples of nitrogenous fertilizers are given in Table 1. Ninety per cent of these substantially met their guaranties. The total number of cottonseed meal samples analyzed was 149, but 90 per cent of these were samples taken by the growers themselves from carload lots shipped to them directly from sources outside the State.

II. Raw Materials Chiefly Valuable for Phosphoric Acid

Analyses of 11 official samples of 20 per cent superphosphate, and one each of the 18 per cent grade and the "triple" superphosphate, are given in Table 2. All samples exceeded their guaranties, as did the three samples of precipitated bone.

III. Raw Materials Chiefly Valuable for Potash

Of seven official samples of muriate of potash, four substantially met or exceeded their guaranties of 60 per cent potash and three were deficient. Three official samples of sulphate of potash and four of cottonhull ashes all exceeded their guaranties.

Analyses are given in Table 3.

IV. Raw Materials Supplying Nitrogen and Phosphoric Acid

This group comprises chiefly dry ground fish and ground bone. Five official samples of dry ground fish all considerably exceeded their guaranties for both nitrogen and phosphoric acid; of 12 samples of ground bone, nine met all guaranties. One sample of "Milorganite", a treated sewage sludge, met its guaranties, while one sample of ground tankage was deficient in nitrogen.

Analyses are given in Table 4.

V. Raw Materials Supplying Nitrogen and Potash

There is only one fertilizer material on the market falling in this class, namely, nitrate of potash. Analyses of two official samples, both of which substantially exceeded their guaranties of 44 per cent potash, are given in Table 3.

VI. Mixed Fertilizers

Commercial Mixtures

Analyses of 171 official samples of mixed fertilizers are given in Table 5. Results are summarized as follows:

Total number of samples	171
Samples deficient in:	
one item	53
two items	6
three items	1
	60
Percentage of samples meeting guaranties	65
Total guaranties made	497 ¹
Guaranties not met:	
nitrogen	32
phosphoric acid	19
potash	17
	68
Percentage met	86

Eighty-six per cent of all guaranties were substantially met or exceeded, which is only slightly less than the percentage found in 1948.

¹ Sixteen samples with only two guaranties.

Special and Home Mixtures

One hundred and eighteen samples of special and home mixtures were analyzed during the year, the great majority for tobacco growers. Because the composition of these samples is not a matter of public interest, their analyses are not tabulated in this bulletin.

State Purchases of Fertilizer

Raw materials and mixed goods supplied to State institutions on State purchase orders are regularly included in our usual inspection. Fertilizers so supplied are subject to registration and tonnage tax.

Samples representing State purchases are indicated in the several tables. They are summarized as follows:

<i>Materials</i>	<i>No. of Samples</i>	<i>Reference</i>
Supplying nitrogen	8	Table 1
Supplying phosphoric acid	4	Table 2
Supplying potash	4	Table 3
Supplying nitrogen and phosphoric acid	1	Table 4
Mixed fertilizers	20	Table 5
Total	37	

VII. Miscellaneous

Sheep and other cattle manures. Thirteen official samples of sheep manure and other dried manures were analyzed; 11 equalled or exceeded their guaranties. Analyses are given in Table 6.

Limestone and similar materials. The Connecticut fertilizer law specifically exempts "marl and lime" from its registration and other requirements, and consequently no regular inspection of liming materials is made. Occasional samples are analyzed for farmers or federal agencies, and analyses of five such samples are given in Table 7.

Fertilizers sold in small packages. Fertilizers sold only in packages of 10 pounds or less are not required to be registered. No attempt, therefore, is made to analyze all brands of such fertilizers on the market. Such of these small package fertilizers as come to the attention of our agent are sampled and analyzed as a matter of interest. During the 1948-1949 season, 34 samples were analyzed, of which 29, or 85 per cent, met their guaranties; this is substantially the same percentage found for bulk mixed fertilizers. Analyses are given in Table 8.

Other miscellaneous materials. Twenty-six other miscellaneous products were examined. Analyses are given in Table 9.

Check meals and fertilizers. Collaboration was continued with the check analysis programs sponsored by the American Oil Chemists' Society and the F. S. Royster Guano Company. Eighteen samples were analyzed in connection with a collaborative study of the Association of Official Agricultural Chemists.

MAINTENANCE OF GUARANTIES

The maintenance of guaranties as compiled from analyses of official samples of ingredient materials and mixed goods (Tables 1-6 and 8) is shown in the following tabulation. Deficiencies of 0.1 per cent or less in nitrogen or 0.2 per cent or less in phosphoric acid and potash are not considered. The proportion of guaranties substantially met was 89 per cent.

	<i>No. of samples</i>	<i>No. of guaranties</i>	<i>Deficiencies</i>
Nitrate of ammonia	2	2	0
Nitrate of soda	7	7	1
Sulphate of ammonia	2	2	0
Cyanamid	4	4	1
Urea	2	2	0
Castor pomace	7	7	0
Cottonseed meal	15	15	2
Horn and hoof meal	1	1	0
Linseed oil meal	1	1	0
Soybean oil meal	1	1	0
Superphosphate	13	13	0
Precipitated bone	3	3	0
Muriate of potash	7	7	3
Nitrate of potash	2	4	0
Sulphate of potash	3	3	0
Cottonhull ashes	4	4	0
Dry ground fish	5	10	0
Ground bone	15	30	3
Milorganite	1	2	0
Ground tankage	1	2	1
Mixed fertilizer	195	569	72
Sheep and other cattle manures	20	60	3
Totals	311	749	86
Per cent guaranties met			89

TABLE 1. ANALYSES OF MATERIALS SUPPLYING CHIEFLY NITROGEN¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
Nitrate of Ammonia				
7180	Aeroprills. American Cyanamid Co., New York 20, N. Y.	North Haven: Woodruff Fertilizer Works, Inc.	33.68	33.50
7306 ²	Aeroprills. American Cyanamid Co., New York 20, N. Y.	Mansfield Depot: Mansfield Training School	33.64	33.50
Nitrate of Soda				
7117	Arcadian, The American. Allied Chemical & Dye Corp., New York 6, N. Y.	New Milford: Checkerboard Feed Store	16.28	16.00
7358	Arcadian, The American. Allied Chemical & Dye Corp., New York 6, N. Y.	Norwich: Checkerboard Feed Store	16.06	16.00
7127	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Warehouse Point: C. A. Cowles, Inc.	16.06	16.00
7174	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Stamford: A. E. Bounty	16.04	16.00
7199 ²	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Southbury: Southbury Training School	16.06	16.00
7356 ²	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Norwich: Norwich State Hospital	15.86	16.00
7200	Consolidated Rendering Co., Boston, Mass.	Bethel: Marble & Risso	16.04	16.00
Sulphate of Ammonia				
7431	Old Deerfield. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	20.84	20.50
7447	Sawco Superior. Stumpp & Walter Co., New York 8 N. Y.	Stamford: Stumpp & Walter Co.	20.28	20.00
Cyanamid				
7025 ²	20.6% 'Aero'. American Cyanamid Co., New York 20, N. Y.	Middletown: Conn. State Hospital	20.64	20.60
7044 ²	20.6% 'Aero'. American Cyanamid Co., New York 20, N. Y.	Middletown: Long Lane School	20.68	20.60
7085 ²	20.6% 'Aero'. American Cyanamid Co., New York 20, N. Y.	Newtown: Fairfield State Hospital	20.26	20.60
7307 ²	20.6% 'Aero'. American Cyanamid Co., New York 20, N. Y.	Mansfield Depot: Mansfield Training School	20.62	20.60

¹ Deficiencies are in bold face type.

² State purchase.

TABLE 1. ANALYSES OF MATERIALS SUPPLYING CHIEFLY NITROGEN¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
Urea				
7410	DuPont Uramon Fertilizer Compound. E. I. duPont de Nemours & Co., Inc., Wilmington 98, Del.	North Haven: Woodruff Fertilizer Works, Inc.	43.35	42.00
7382	O & W Uramon Fertilizer Compound. Olds & Whipple, Inc., Hartford, Conn.	Glastonbury: E. J. Bantle	42.30	42.00
Castor Pomace				
7480	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	5.93	4.50
6992	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	West Suffield: H. L. Oppenheimer & Son	5.73	5.55
7425 ²	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	Windsor: Tobacco Laboratory	5.80	5.55
7516	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	5.14	4.50
7423	The Rogers & Hubbard Co., Portland, Conn.	Wilson: Anders Christensen...	5.74	4.50
7543	I. P. Thomas & Son Co., Camden, N. J.	North Haven: Joseph Beach	5.89	5.81
7181	Baker's. Woodruff's Fertilizer Works, Inc., North Haven, Conn.	North Haven: Woodruff's Fertilizer Works, Inc.	5.94	5.50
Cottonseed Meal				
7182	Cow-Eta Brand 36%. Ashcraft-Wilkinson Co., Atlanta, Ga.	North Haven: Woodruff's Fertilizer Works, Inc.	6.00	5.76
6971	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Bloomfield: Hartman Tobacco Co.	6.69	6.56
6972	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Bloomfield: Hartman Tobacco Co.	6.76	6.56
6979	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	East Hartford: Olds & Whipple, Inc.	6.61	6.56
6989	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Scitico: Consolidated Cigar Corp.	6.61	6.56
6999	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Portland: Consolidated Cigar Corp.	6.49	6.56
7000	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Portland: Consolidated Cigar Corp.	6.40	6.56
6978	"Lovitt Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	East Hartford: Olds & Whipple, Inc.	6.92	6.56
6993	"Lovitt Brand" 41%. L. B. Lovitt & Co., Memphis Tenn.	West Suffield: Hatheway-Steane Corp.	6.87	6.56

¹ Deficiencies are in bold face type.

² State purchase.

TABLE 1. ANALYSES OF MATERIALS SUPPLYING CHIEFLY NITROGEN¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
6995	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	West Suffield: Hatheway-Steane Corp.	6.68	6.56
6997	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	West Suffield: A. N. Shepard & Son	6.56	6.56
7133	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	Hazardville: L. B. Haas & Co.	6.56	6.56
6980	White Mule Brand 41%. Marianna Sales Co., Memphis, Tenn.	East Windsor Hill: General Cigar Co., Inc.	6.48	6.56
6982	White Mule Brand 41%. Marianna Sales Co., Memphis, Tenn.	East Windsor Hill: General Cigar Co., Inc.	6.52	6.56
6974	Swift's 41%. Swift & Co., Augusta, Ga.	Simsbury: Cullman Bros., Inc.	6.29	6.56
Horn & Hoof Meal				
7130	Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	14.76	14.00
Linseed Oil Meal				
6981	Archer Quality 32%. Archer-Daniels-Midland Co., Minneapolis, Minn.	East Windsor Hill: General Cigar Co., Inc.	5.36	5.12
Soybean Oil Meal				
6998	Central 41% Protein Expeller. Central Soya Co., Inc., Fort Wayne, Ind.	Portland: Consolidated Cigar Corp.	7.33	6.56

¹ Deficiencies are in bold face type.

TABLE 2. ANALYSES OF SUPERPHOSPHATE, ETC.¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent phosphoric acid			
			Citrate-insoluble	Total	"Available"	
					Found	Guaranteed
	Superphosphate					
7218	18% Normal. The American Agricultural Chemical Co., No. Weymouth, Mass.	Manchester: Little & McKinney, Inc.	1.25	20.34	19.09	18.00
7136 ²	20%. Apothecaries Hall Co., Waterbury, Conn.	Somers: Osborn Prison Farm	1.17	22.30	21.13	20.00
7024 ²	Corenco. Consolidated Rendering Co., Boston 10, Mass.	Middletown: Connecticut State Hospital	0.51	20.67	20.16	20.00
7083 ²	Corenco. Consolidated Rendering Co., Boston 10, Mass.	Newtown: Fairfield State Hospital	0.31	21.38	21.07	20.00
7091	Davco Granulated 20%. The Davison Chemical Corp., Baltimore 3, Md.	New Milford: Checkerboard Feed Store	0.53	21.33	20.80	20.00
7202	Granulated 20%. Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	Bethel: Eastern States Farmers' Exchange, Inc.	1.48	21.74	20.26	20.00
7430	International 20%. International Minerals & Chemical Corp., Woburn, Mass.	West Suffield: H. L. Oppenheimer & Son....	1.27	22.26	20.99	20.00
7365	O & W. Olds & Whipple, Inc., Hartford, Conn.	Glastonbury: E. J. Bantle	1.27	21.86	20.59	20.00
7509	O & W Triple. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	0.98	48.02	47.04	47.00
7064	Superphosphate. The Rogers & Hubbard Co., Portland Conn.	Guilford: Fred C. Morse & Son	0.12	20.55	20.43	20.00
7209	Superphosphate. The Rogers & Hubbard Co., Portland Conn.	Danbury: Benjamin Grain Co.	0.40	21.92	21.52	20.00
7441	Sawco 20%. Stumpp & Walter Co., New York 8, N. Y.	Stamford: Stumpp & Walter Co.	0.35	21.40	21.05	20.00
7015	20%. I. P. Thomas & Son Co., Camden, N. J.	North Haven: Joseph Beach	0.63	21.20	20.57	20.00
	Precipitated Bone Phosphate					
6996	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: A. N. Shepard & Son	0.35	40.05	39.70	38.00
7428 ²	Apothecaries Hall Co., Waterbury, Conn.	Windsor: Tobacco Laboratory	1.32	43.66	42.34	38.00
7131	Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	1.79	40.92	39.13	38.00

¹ Deficiencies are in bold face type.

² State purchase.

**Erratum—Bulletin 534, Commercial
Fertilizers, Report for 1949**

Page 38, Table 5: Sample 7341, listed as Gro-Fast Plant Food 5-8-5 manufactured by The Rogers & Hubbard Company, Portland, Conn., was actually Vegetable Fertilizer 5-8-7 manufactured by the same company. Gro-Fast Plant Food contains a substantial proportion of its nitrogen in the organic form, as is shown by the analysis of Sample 7336 on page 47.

TABLE 3. ANALYSES OF POTASH SALTS, ETC.¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent potash	
			Found	Guaranteed
Muriate of Potash				
7361	Apothecaries Hall Co., Waterbury, Conn.	Norwich: Yantic Grain & Products Co.	60.24	60.00
7354	Consolidated Rendering Co., Boston 10, Mass.	Pawcatuck: The C. W. Campbell Co.	59.92	60.00
7204	Eastern States Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	Bethel: Eastern States Farmers' Exchange, Inc.	60.16	60.00
7436	International Minerals & Chemical Corp., Woburn, Mass.	West Suffield: H. L. Oppenheimer* & Son	58.96	60.00
7006 ²	The Rogers & Hubbard Co., Portland, Conn.	Cheshire: Connecticut Reformatory	59.92	60.00
7026 ²	The Rogers & Hubbard Co., Portland, Conn.	Middletown: Connecticut State Hospital	59.36	60.00
7082 ²	The Rogers & Hubbard Co., Portland, Conn.	Newtown: Fairfield State Hospital	58.96	60.00
Nitrate of Potash				
7384 ³	Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	Glastonbury: E. J. Bantle	46.16	44.00
7515 ⁴	Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	46.12	44.00
Sulphate of Potash				
7364	Old Deerfield High Grade Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	Glastonbury: E. J. Bantle	48.16	48.00
7427 ²	O & W. Olds & Whipple, Inc., Hartford, Conn.	Windsor: Tobacco Laboratory	49.76	48.00
7383	O & W. Olds & Whipple, Inc., Hartford, Conn.	Glastonbury: E. J. Bantle	48.28	48.00
Cottonhull Ashes				
7481	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	41.32	unit basis
6990	Old Deerfield Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	Scitico: Consolidated Cigar Co., Inc.	42.48	41.00
7432	Old Deerfield 35% Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	35.02	35.00
7132	O & W. Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	38.92	35.00

¹ Deficiencies are in bold face type.
² State purchase.

³ Nitrogen guaranteed 13.0%, found 13.86%.
⁴ Nitrogen guaranteed 13.0%, found 13.72%.

TABLE 4. ANALYSES OF GROUND FISH, BONE, ETC.¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen		Per cent phosphoric acid		Mechanical analysis (in percentage)	
			Total found	Total guaranteed	Total found	Total guaranteed	Finer than 1/50 inch	Coarser than 1/50 inch
- Dry Ground Fish								
6987 ²	Apothecaries Hall Co., Waterbury, Conn.	East Windsor Hill: General Cigar Co., Inc.	10.28	9.00	7.68	5.00	.....	.....
6994 ³	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: Hatheway-Steane Corp.	10.29	9.00	7.64	5.00	.....	.....
6988 ⁴	Old Deerfield. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	East Windsor Hill: General Cigar Co., Inc.	9.30	9.00	7.28	5.00	.....	.....
7128	O & W Menhaden. Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	10.42	9.00	7.17	5.00	.....	.....
7487 ⁵	The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	10.21	9.45	7.51	5.00	.....	.....
Ground Bone								
7216 ⁶	Bone Meal. Apothecaries Hall Co., Waterbury, Conn.	Danbury: Heyman Hardware Co.	2.73	2.25	24.42	22.00	57.0	43.0
7479	Bone Meal. Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	2.78	2.25	23.35	22.00	66.0	34.0
7391	Corenco. Consolidated Rendering Co., Boston 10, Mass.	New Haven: New Haven Rendering Co.	3.55	3.70	23.40	20.00	29.5	70.5
7119 ⁷	Greenway Brand Bone Meal. The Davison Chemical Corp., Baltimore, Md.	New Milford: Checkerboard Feed Store	3.74	1.65	20.38	23.00	17.5	82.5
7215 ⁸	G & O. Goulard & Olena, Inc., Skillman, N. J.	Danbury: Heyman Hardware Co.	2.93	2.40	24.44	22.75	37.0	63.0
7150	G & O Raw Bone. Goulard & Olena, Inc., Skillman, N. J.	Greenwich: McArdle's Seed Store	3.92	3.00	20.73	15.00	40.3	59.7
7417	O & W Bone Meal. Olds & Whipple, Inc., Hartford, Conn.	Bloomfield: Bloomfield Farmers Exchange	2.80	2.47	28.20	22.00	72.5	27.5

7045 ⁹	Gro-Fast Bone Meal. The Rogers & Hubbard Co., Portland, Conn.	Middletown: Long Lane School.....	3.08	2.00	26.90	23.00	58.0	42.0
7210	Gro-Fast Bone Meal. The Rogers & Hubbard Co., Portland, Conn.	Danbury: H. E. Meeker	2.82	2.00	27.80	23.00	61.0	39.0
7439 ¹⁰	Sawco Bone. Stumpp & Walter Co., New York 8, N. Y.	Stamford: Stumpp & Walter Co.	2.32	2.47	26.64	23.00	69.5	30.5
7442 ¹¹	Sawco Bone. Stumpp & Walter Co., New York 8, N. Y.	Stamford: Stumpp & Walter Co.	2.60	2.47	26.50	22.00	66.0	34.0
7141 ¹²	Vico Steamed Bone Meal. Van Iderstine Co., Long Island City, N. Y.	Greenwich: McArdle's Seed Store	2.92	2.47	26.82	23.00	61.5	38.5
Milorganite								
7392	Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.	New Haven: Jackson-Marvin Co.	5.96 ¹³	6.00	3.48 ¹⁴	2.00	.....	.....
Ground Tankage								
7521	Consolidated Rendering Co., Boston 10, Mass.	Ridgefield: The J. E. Ryan Co.....	7.11	7.40	9.36	9.15	59.0	41.0

¹ Deficiencies are in bold face type.² Chlorine 0.26%.³ Chlorine 0.28%.⁴ Chlorine 0.22%.⁵ Chlorine 0.23%.⁶ Nitrogen in ammonia 0.06%.⁷ Nitrogen in ammonia 0.02%.⁸ Nitrogen in ammonia 0.20%.⁹ State purchase.¹⁰ Nitrogen in ammonia 0.09%.¹¹ Nitrogen in ammonia 0.09%.¹² Nitrogen in ammonia 0.01%.¹³ Found: Nitrogen in ammonia 0.02%; nitrogen organic water-soluble 0.65%; nitrogen organic insoluble 5.29%.¹⁴ Guaranteed "available" phosphoric acid 2.00%; found 2.78%.

TABLE 5. ANALYSES OF MIXED FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling
	Agricultural Supply Co., West Haven, Conn.	
7021	Yale Special Mixture 8-6-2	New Haven
7522	Yale Special Mixture 8-6-2	Norwalk
	American Agricultural Chemical Co., North Weymouth 91, Mass.	
7005 ²	A. A. Quality Fertilizer 5-8-7	Cheshire
7333	A. A. Quality Fertilizer 5-8-7	Essex
7488	A. A. Quality Fertilizer 5-8-7	West Haven
7490	A. A. Quality Fertilizer 5-10-10	West Haven
7148	Agrico Broadleaf Evergreens 6-10-4	Greenwich
7489	Agrico Country Club Fertilizer 6-10-4	West Haven
7300	Agrico Country Club Fertilizer 8-6-2	Manchester
7070	Agrico for Corn 3-12-6	New London
7048	Agrico for Gardens 5-10-5	Branford
7047	Agrico for Lawns, Trees and Shrubs 6-10-4	Branford
7219	Agrico for New England 5-8-7	Manchester
7344	Agrico for Potatoes 5-10-10	Pawcatuck
7355	Agrico for Seeding Down 3-12-12	Pawcatuck
7499	Agrico for Tobacco 6-3-6	East Hartford
7311	Agrico for Top Dressing 7-7-7	Essex
7491	Agrico for Phosphate and Potash 0-14-14	West Haven
	Apothecaries Hall Co., Waterbury, Conn.	
7360	Liberty Fertilizer 0-14-14	Norwich
7359	Liberty Fertilizer 4-12-4	Norwich
7147	Liberty Fertilizer 5-10-5	Greenwich
7068	Liberty Fertilizer 5-10-10	New London
7475	Liberty Fertilizer 5-10-10 with 2% Magnesium	East Windsor
7008 ²	Liberty Fertilizer Special for Fruit and Grass 7-7-7	Cheshire
7029	Liberty Fertilizer Special for Fruit and Grass 7-7-7	Portland
7067 ²	Liberty Fertilizer Special for Fruit and Grass 7-7-7	New London
7086 ²	Liberty Fertilizer Special for Fruit and Grass 7-7-7	Newtown
7039	Liberty Green Gro Fertilizer 6-7-4	Middletown
7038	Liberty High Grade Market Gardeners 5-8-7	Middletown
7474	Liberty High Grade Market Gardeners with 2% Magnesium 5-8-7	East Windsor
7426	Liberty Tobacco Mixture 6-3-6	Windsor
7476	Liberty Tobacco Mixture 6-3-6	East Windsor
7482	Liberty Tobacco Mixture (with Castor Pomace— Sulphate Potash) 6-3-6	East Windsor
7217	Liberty Tobacco Mixture (with Cottonhull Ashes) 6-3-6	Buckland
7477	Liberty Tobacco Mixture (with Cottonhull Ashes) 6-3-6	East Windsor
7478	Liberty Tobacco Starter 4-10-0	East Windsor
	Armour Fertilizer Works, New York 5, N. Y.	
7472	Armour's Big Crop Fertilizer 0-14-14	East Windsor Hill
7138	Armour's Big Crop Fertilizer 5-8-7	Somers
7437	Armour's Big Crop Fertilizer 5-10-10	Windsor
7301	Armour's Big Crop Fertilizer 7-7-7	Bolton Notch

¹ Deficiencies are in bold face type.

² State purchase.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH¹

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
0.58	4.88	1.96	0.44	7.86	0.36	7.79	7.43	3.12	4.28	7021
0.15	5.00	2.14	0.76	8.05	1.08	7.12	6.04	2.12	2.80	7522
0.52	3.72	0.24	0.26	4.74	0.43	11.21	10.78	5.31	7.16	7005
0.50	3.96	0.04	0.45	4.95	0.79	9.38	8.59	5.83	7.10	7333
0.40	3.84	0.24	0.43	4.91	1.15	10.49	9.34	6.46	7.00	7488
0.39	3.92	0.30	0.32	4.93	0.90	11.54	10.64	9.72	10.00	7490
0.53	4.46	0.38	0.71	6.08	0.51	11.38	10.87	2.66	4.26	7148
0.76	4.28	0.34	0.71	6.09	0.77	11.64	10.87	3.87	4.28	7489
0.37	5.22	0.42	1.75	7.76	0.60	7.35	6.75	1.94	2.46	7300
0.50	2.00	0.10	0.48	3.08	0.07	13.47	13.40	3.47	5.84	7070
0.45	3.64	0.24	0.58	4.91	0.60	11.56	10.96	4.38	5.12	7048
0.57	4.30	0.44	0.78	6.09	0.17	11.22	11.05	3.72	4.02	7047
0.57	3.50	0.26	0.51	4.84	0.42	9.22	8.80	7.08	7.08	7219
0.56	3.84	0.28	0.40	5.08	0.72	11.11	10.39	9.00	10.02	7344
0.21	1.94	0.66	0.49	3.30	0.60	13.29	12.69	6.62	11.54	7355
0.27	0.96	2.04	2.51	5.78	0.80	4.76	3.96	0.97	6.34	7499
0.34	5.70	0.30	0.50	6.84	0.18	8.21	8.03	4.37	7.00	7311
.....	.....	.....	.....	.....	1.85	16.87	15.02	11.57	13.20	7491
.....
.....
0.00	3.20	0.57	0.51	4.28	0.95	15.18	14.23	5.69	14.80	7360
0.56	3.86	0.06	0.34	4.82	0.33	12.99	12.66	2.89	4.42	7359
0.34	4.30	0.28	0.38	5.30	0.37	11.77	11.40	4.68	5.44	7147
0.13	4.42	0.06	0.42	5.03	0.45	12.19	11.74	5.51	10.02	7068
0.40	6.20	0.12	0.40	7.12	1.52	10.69	9.17	9.03	10.62	7475
0.13	4.00	2.24	0.63	7.00	0.14	8.72	8.58	6.45	7.20	7008
0.41	6.16	0.16	0.52	7.25	0.42	8.75	8.33	3.84	7.90	7029
0.43	5.92	0.00	0.68	7.03	0.04	11.02	10.98	5.83	7.46	7067
0.65	4.60	0.00	0.89	6.14	0.20	8.46	8.26	6.19	7.30	7086
0.00	4.24	0.49	0.67	5.40	1.12	8.62	7.50	3.49	4.72	7039
.....	.....	.....	.....	.....	0.79	8.90	8.11	5.33	7.52	7038
.....
.....
0.25	4.06	0.30	0.45	5.06	1.08	9.12	8.04	1.07	7.64	7474
0.68	1.66	0.70	3.32	6.36	0.15	3.93	3.78	0.20	6.80	7426
0.82	0.00	1.66	3.55	6.03	0.73	4.62	3.89	0.24	6.80	7476
.....
0.78	0.12	2.58	3.05	6.53	0.34	4.31	3.97	0.57	9.08	7482
.....
0.83	0.06	2.24	3.19	6.32	0.61	4.60	3.99	0.00	7.16	7217
.....
0.77	0.10	2.00	3.37	6.24	0.44	5.48	5.04	1.06	7.74	7477
0.58	2.32	0.51	0.75	4.11	0.66	12.11	11.45	.....	.....	7478
.....
.....
.....
0.40	3.70	0.74	0.17	5.01	1.22	16.14	14.92	11.42	11.96	7472
0.34	4.24	0.12	0.24	4.94	0.22	9.78	9.56	4.89	6.72	7138
0.48	6.20	0.06	0.33	7.07	1.15	11.86	10.71	10.02	10.02	7437
.....	.....	.....	.....	.....	0.47	8.27	7.80	5.43	6.90	7301

TABLE 5. ANALYSES OF MIXED FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling
7473	Armour's Big Crop Fertilizer Tobacco Plant Bed Special 4-12-4	East Windsor Hill
7471	Armour's Big Crop Fertilizer Tobacco Special 6-3-6	East Windsor Hill
	Associated Seed Growers, Inc., Milford, Conn.	
7537	Asgrow Lawn Food 10-6-4	Milford
7538	Clark's Tip Top 5-8-7	Milford
7536	Japedizer 8-6-4	Milford
	The F. A. Bartlett Tree Expert Co., Stamford, Conn.	
7172	Bartlett Green Tree Food 6-8-6	Stamford
	Consolidated Rendering Co., Boston 10, Mass.	
7390	Corenco 0-14-14 Top Dresser	New Haven
7004 ²	Corenco 0-20-20	Cheshire
7197 ²	Corenco 0-20-20	Southbury
7304 ²	Corenco 0-20-20	Mansfield Depot
7363	Corenco 4-12-4 Complete Manure	Moosup
7389	Corenco 4-12-16 Ladino Special	New Haven
7019	Corenco 5-8-7 Potato and General Crop	New Haven
7140	Corenco 5-8-7 Potato and General Crop	Somers
7155	Corenco 5-10-5 Home Garden	Cos Cob
7201	Corenco 5-10-5 Onion Special—Super Truck	Bethel
7074	Corenco 5-10-10 Peerless Potato	Shelton
7139	Corenco 6-3-6 Special Tobacco Grower	Somers
7362	Corenco 7-7-7 Complete Fruit and Top Dressing	Jewett City
7126	Corenco 8-6-4 Landscape	Warehouse Point
	The Davey Tree Expert Co., Inc., Kent, Ohio	
7157	Davey Tree Food 12-4-4	Old Greenwich
	The Davison Chemical Corp., Baltimore 3, Md.	
7308	Davco Granulated Fertilizer 0-14-14	Willimantic
7357	Davco Granulated Fertilizer 0-20-20	Norwich
7090	Davco Granulated Fertilizer 3-12-6	New Milford
7120	Davco Granulated Fertilizer 4-12-4	New Milford
7518	Davco Granulated Fertilizer 5-8-7	New Milford
7118	Davco Granulated Fertilizer 5-10-5	New Milford
7519	Davco Granulated Fertilizer 5-10-10	New Milford
7520	Davco Granulated Fertilizer 7-7-7	New Milford
	Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	
7009	Eastern States 0-19-19 W/Borax	North Haven
7205	Eastern States 0-20-20	Bethel
7122	Eastern States 5-10-5 Garden	East Hartford
7123	Eastern States 5-10-10	East Hartford
7203	Eastern States 5-15-10	Bethel
7309	Eastern States 5-15-15	Willimantic
7493	Eastern States 8-4-8 Tobacco	East Hartford

¹ Deficiencies are in bold face type.

² State purchase.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH¹

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
0.57	2.52	0.52	0.76	4.37	2.26	12.85	10.59	0.90	4.30	7473
0.81	1.52	2.02	1.74	6.19	0.79	4.89	4.10	1.38	5.92	7471
1.67	6.46	0.63	1.33	10.09	0.54	6.98	6.44	4.54	5.16	7537
0.82	3.38	0.30	0.65	5.15	0.52	8.54	8.02	7.48	8.10	7538
1.15	5.20	0.52	1.01	7.88	1.07	7.15	6.08	4.21	5.32	7536
0.41	4.94	0.22	0.37	5.94	0.42	8.81	8.39	5.25	5.84	7172
.....	.....	.....	.....	.....	0.37	14.24	13.87	10.05	14.72	7390
.....	.....	.....	.....	.....	0.30	20.46	20.16	15.84	20.54	7004
.....	.....	.....	.....	.....	0.51	21.82	21.31	16.63	20.10	7197
.....	.....	.....	.....	.....	0.24	22.68	22.44	13.02	21.64	7304
0.00	1.84	2.28	0.17	4.29	0.40	12.56	12.16	1.01	4.44	7363
0.00	2.56	1.53	0.09	4.18	0.48	12.48	12.00	13.24	15.48	7389
0.00	2.48	2.24	0.17	4.89	0.27	10.11	9.84	4.16	7.08	7019
0.00	3.30	1.66	0.22	5.18	0.35	8.80	8.45	0.65	7.46	7140
0.00	3.32	1.87	0.25	5.44	0.54	10.27	9.73	.....	5.50	7155
0.31	2.76	1.96	0.13	5.16	0.70	11.79	11.09	4.89	5.36	7201
0.00	3.22	2.02	0.16	5.40	0.05	10.91	10.86	6.13	10.80	7074
0.00	0.08	2.64	3.63	6.35	0.47	3.50	3.03	0.17	5.98	7139
0.47	6.06	0.34	0.17	7.04	0.77	8.38	7.61	4.94	7.14	7362
0.00	6.58	1.36	0.43	8.37	0.56	7.30	6.74	2.46	4.32	7126
0.86	10.44	0.36	0.95	12.61	.....	5.52	.....	3.29	4.28	7157
.....	.....	.....	.....	.....	0.76	15.47	14.71	8.60	13.64	7308
.....	.....	.....	.....	.....	0.26	19.06	18.80	14.33	19.76	7357
0.48	2.44	0.24	0.06	3.22	0.52	13.62	13.10	3.65	5.94	7090
0.51	2.14	1.42	0.08	4.15	0.20	13.36	13.16	2.30	3.98	7120
0.32	3.92	0.12	0.77	5.13	0.45	8.97	8.52	4.85	7.54	7518
1.02	2.70	1.02	0.05	4.79	0.31	11.55	11.24	2.91	5.06	7118
0.40	4.44	0.12	0.05	5.01	1.15	11.33	10.18	7.28	9.92	7519
0.40	3.80	2.76	0.08	7.04	0.42	7.83	7.41	6.34	7.36	7520
.....	.....	.....	.....	.....	0.11	22.18	22.07	18.33	21.10	7009
.....	.....	.....	.....	.....	0.26	20.72	20.46	.....	20.76	7205
0.17	2.44	1.84	0.68	5.13	0.23	11.66	11.43	4.30	5.48	7122
1.18	3.60	0.20	0.09	5.07	0.21	12.41	12.20	6.39	9.84	7123
0.48	3.76	0.50	0.27	5.01	1.34	17.58	16.24	8.65	9.28	7203
0.68	3.68	0.68	0.16	5.20	0.81	16.00	15.19	11.74	16.00	7309
0.20	0.68	3.86	3.58	8.32	0.44	4.59	4.15	0.86	8.38	7493

TABLE 5. ANALYSES OF MIXED FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling
7310	Eastern States 8-12-16 L.C.S.	Willimantic
7010	Eastern States 8-16-16	North Haven
7011	Eastern States 8-16-16 SM	North Haven
7121	Eastern States 10-10-10	East Hartford
7546	Eastern States 10-10-10	North Haven
Frank's Market Garden, Springfield, Mass.		
7549	Franks For More Growth 0.9-0.9-0.9	East Hartford
Goulard & Olena, Inc., Skillman, N. J.		
7149	G & O 10-6-4 High Organic No-Filler Fairway Lawn Dressing	Greenwich
International Minerals & Chemical Corp., Woburn, Mass.		
7421	International 5-10-10	Wilson
7424	International Potato 5-10-10-2	Wilson
"Na-Churs" Plant Food Co., Marion, Ohio		
7483	"Na-Churs" Plant Food 5-5-10	Plantsville
Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.		
7465	Old Deerfield 5-5-15 Tobacco Starter	West Suffield
7385	Old Deerfield 5-8-7	Glastonbury
7387	Old Deerfield 5-10-10	Glastonbury
7386	Old Deerfield 6-3-6 Complete Tobacco	Glastonbury
7388	Old Deerfield 7-7-7	Glastonbury
Olds & Whipple, Inc., Hartford, Conn.		
7422	O & W 0-14-14 Fertilizer	Wilson
7507	O & W 4-8-4 Complete Lawn Grass Fertilizer	East Hartford
7419	O & W 4-12-4 Market Garden Fertilizer	Bloomfield
7505	O & W 5-3-5 Complete Tobacco Fertilizer	East Hartford
7506	O & W 5-3-5 Complete Tobacco Fertilizer (Potash derived from Cotton Hull Ash)	East Hartford
7510	O & W 5-5-15 High Grade Tobacco Starter and Potash	East Hartford
7418	O & W 5-8-7 Potato and General Purpose Fertilizer	Bloomfield
7504	O & W 5-10-5 Fertilizer	East Hartford
7023 ²	O & W 5-10-10 Potato Fertilizer	Middletown
7043 ²	O & W 5-10-10 Potato Fertilizer	Middletown
7137	O & W 5-10-10 Potato Fertilizer	Somersville
7414 ²	O & W 5-10-10 Potato Fertilizer	Meriden
7500	O & W 6-3-6 Blue Label Tobacco Fertilizer	East Hartford
7501	O & W 6-3-6 Blue Label Tobacco Fertilizer (Potash derived from Cotton Hull Ash)	East Hartford
7508	O & W 6-3-6 Pomace Base Fertilizer	East Hartford
7514	O & W 6-3-6 Pomace Base Fertilizer (Potash derived from Cotton Hull Ash)	East Hartford
7502	O & W 7-7-7 Top Dressing and Grass Fertilizer	East Hartford

¹ Deficiencies are in bold face type.² State purchase.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH¹

In nitrates	Per cent nitrogen				Per cent phosphoric acid			Per cent potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
1.37	6.00	0.44	0.19	8.00	0.37	13.63	13.26	1.03	15.86	7310
0.73	5.80	1.26	0.23	8.02	0.49	17.71	17.22	14.04	16.04	7010
1.26	5.44	0.80	0.19	7.69	0.39	16.88	16.49	11.64	16.62	7011
2.26	6.76	0.16	0.48	9.66	0.35	11.02	10.67	11.14	11.14	7121
1.30	7.90	0.74	0.16	10.00	0.67	12.68	12.01	9.04	10.12	7546
0.00	0.62	0.00	0.64	1.26	0.35	1.51	1.16	1.23	1.23	7549
0.00	7.00	1.64	1.58	10.22	0.38	7.67	7.29	3.45	4.88	7149
0.77	3.90	0.08	0.28	5.03	0.85	11.77	10.92	7.82	10.18	7421
0.25	3.16	0.84	0.57	4.82	0.42	11.44	11.02	3.35	10.24	7424
2.21	2.44	0.46	0.00	5.11	0.34	4.47	4.13	0.17	5.82	7483
0.20	0.16	3.56	1.12	5.04	2.50	7.58	5.08	1.26	15.74	7465
0.14	3.64	0.96	0.54	5.28	1.23	9.73	8.50	5.20	7.16	7385
0.00	4.46	0.89	0.12	5.47	0.45	11.58	11.13	6.15	10.44	7387
0.43	0.22	3.04	2.62	6.31	0.26	4.40	4.14	0.87	7.10	7386
0.00	6.72	0.44	0.11	7.27	0.43	8.50	8.07	2.36	7.24	7388
0.89	2.24	0.28	0.93	4.34	0.73	14.44	13.71	9.50	14.98	7422
0.58	2.92	0.00	0.91	4.41	0.92	9.02	8.10	4.28	5.42	7507
0.45	0.10	1.48	3.17	5.20	0.63	13.43	12.80	0.40	4.44	7419
0.37	0.04	1.60	3.01	5.02	0.47	4.10	3.63	0.63	6.10	7505
0.48	0.28	3.08	1.12	4.96	0.94	4.15	3.21	0.34	5.28	7506
0.55	3.78	0.22	0.70	5.25	1.33	7.03	5.70	1.09	13.44	7510
0.37	4.26	0.00	0.87	5.50	0.62	9.96	9.34	4.58	7.38	7418
0.22	3.94	0.18	0.74	5.08	0.59	11.39	10.80	5.76	5.76	7504
0.66	4.00	0.12	0.75	5.53	0.47	11.88	11.41	7.54	10.30	7023
0.15	4.06	0.12	0.75	5.08	0.41	10.89	10.48	8.53	11.02	7043
0.67	4.00	0.12	0.71	5.50	0.29	11.50	11.21	7.98	10.50	7137
0.29	0.08	2.30	3.51	6.18	0.42	11.23	10.81	6.02	10.50	7414
0.76	0.16	1.60	3.79	6.31	0.45	4.77	4.32	0.58	6.44	7500
0.87	0.08	2.66	2.87	6.48	0.47	4.53	4.06	0.65	7.08	7501
0.58	0.36	2.38	2.94	6.26	0.56	3.81	3.25	0.49	6.12	7508
0.45	3.80	1.82	1.05	7.12	0.34	3.71	3.37	0.55	5.90	7514
					0.78	8.60	7.82	7.12	7.92	7502

TABLE 5. ANALYSES OF MIXED FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling
	Plantspur Products Co., Jersey City, N. J.	
7462	Plantspur Turf-Builder and Fertilizer 4-4-2	Norwalk
	The Frank S. Platt Co., New Haven, Conn.	
7018	Platt's Special 10-5-5 Lawn Fertilizer	New Haven
7539	Platt's Special 10-5-5 Lawn Fertilizer	New Haven
	The Rogers & Hubbard Co., Portland, Conn.	
7087	Alfalfa Fertilizer 0-14-14	New Milford
7042 ²	Corn Fertilizer 4-12-4	Middletown
7089	Corn Fertilizer 4-12-4	New Milford
7196 ²	Double Strength Fertilizer 8-16-16	Southbury
7041 ²	Garden Fertilizer 5-10-5	Middletown
7198 ²	Garden Fertilizer 5-10-5	Southbury
7413 ²	Garden Fertilizer 5-10-5	Meriden
7065	General Crop Fertilizer 5-10-10	Guilford
7208	General Crop Fertilizer 5-10-10	Danbury
7341	Gro-Fast Plant Food 5-8-5	New London
7486	High Potash Fertilizer 5-10-10	Portland
7485	Hubbard Golf Course Fertilizer 8-6-2	Portland
7335	Potato Fertilizer 5-8-7	Centerbrook
7088	Tobacco Grower 6-3-6	New Milford
7550	Tobacco Grower 6-3-6	Portland
7028	Top Dressing 7-7-7	Middletown
7020	Vegetable Fertilizer 5-8-7	New Haven
7066	Vegetable Fertilizer 5-8-7	Guilford
	Saratoga Laboratories, Inc. Saratoga Springs, N. Y.	
7547	TraceL 8-16-7	Hartford
	O. M. Scott & Sons Co., Marysville, Ohio	
7071	Scott's Turfbuilder 9-7-4	New London
7523	Scott's Turfbuilder 9-7-4	Norwalk
7151	Scott's Weed & Feed 7-11-5	Greenwich
	M. L. Shoemaker, Div. Wilson & Co., Inc., Philadelphia 34, Pa.	
7429	M. L. Shoemaker's "Swift-Sure" Tobacco Starter 4-10-0	Suffield
	Smith Agricultural Chemical Co., Columbus 16, Ohio	
7525	Sacco Plant Food 4-12-4	Fairfield
7460	Wedo Lawn Fertilizer with 2,4-D, 6-10-4	Darien
	Smith-Douglass Co., Inc., Norfolk, Va.	
7134 ²	Smith 5-8-7 Fertilizer	Somers

¹ Deficiencies are in bold face type.

² State purchase.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH¹

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
0.00	3.96	0.46	0.58	5.00	1.22	3.57	2.35	2.38	2.38	7462
0.19	4.94	3.12	1.27	9.52	0.37	6.66	6.29	3.91	5.24	7018
0.37	5.40	2.60	1.33	9.70	0.27	6.01	5.74	4.62	6.32	7539
0.37	3.22	0.45	0.46	4.50	0.35	14.91	14.56	10.04	14.00	7087
0.75	3.00	0.28	0.37	4.40	0.61	12.74	12.13	3.85	5.02	7042
0.69	6.82	0.18	0.31	8.00	0.40	13.39	12.99	4.64	4.64	7089
0.00	4.00	0.72	0.33	5.05	0.53	15.56	15.03	15.01	16.96	7196
0.41	4.00	0.60	0.34	5.35	0.49	11.79	11.30	3.93	5.38	7041
0.45	4.04	0.52	0.30	5.31	0.56	10.89	10.33	4.97	5.48	7198
0.63	4.18	0.12	0.38	5.31	0.33	11.24	10.91	6.20	5.54	7413
0.76	4.36	0.02	0.36	5.50	0.37	9.05	8.68	8.12	10.22	7065
0.25	4.06	0.44	0.57	5.32	0.30	11.08	10.78	0.00	10.60	7208
0.70	2.60	0.72	1.35	5.37	0.33	8.78	8.45	4.49	6.80	7341
0.88	0.90	4.02	1.83	7.63	0.04	10.30	10.26	10.24	10.52	7486
0.65	3.24	0.56	0.97	5.42	0.08	6.71	6.63	2.67	2.90	7485
0.69	0.16	2.38	2.55	5.78	0.69	8.71	8.02	4.80	7.38	7335
0.69	0.34	2.42	2.65	6.10	0.37	4.36	3.99	1.06	7.12	7088
0.25	6.00	0.46	0.51	7.22	0.58	3.93	3.35	0.62	6.76	7550
0.28	4.34	0.26	0.36	5.24	0.18	8.27	8.09	5.61	7.62	7028
0.32	4.54	0.22	0.42	5.50	0.29	8.34	8.05	5.11	7.10	7020
					0.09	9.85	9.76	5.41	7.30	7066
0.26	7.90	0.00	0.00	8.16	0.53	18.16	17.63	5.09	8.86	7547
0.00	4.62	1.36	2.44	8.42	0.29	7.40	7.11	2.63	5.36	7071
0.00	4.00	1.73	2.75	8.48	0.69	7.70	7.01	4.05	5.26	7523
0.00	2.14	1.28	3.67	7.09	0.35	11.92	11.57	2.99	6.80	7151
0.56	3.06	0.14	0.54	4.30	1.16	12.52	11.36	-----	-----	7429
0.27	3.32	0.06	0.54	4.19	1.47	13.94	12.47	1.86	4.50	7525
0.51	4.80	0.16	1.18	6.65	0.60	12.32	11.72	4.02	4.02	7460
0.62	3.84	0.24	0.59	5.29	0.74	9.28	8.54	5.65	7.04	7134

TABLE 5. ANALYSES OF MIXED FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling
7007 ²	Smith Square Deal Guano 5-10-10	Cheshire
7081 ²	Smith Square Deal Guano 5-10-10	Newtown
7135 ²	Smith Square Deal Guano 5-10-10	Somers
7305 ²	Smith Square Deal Guano 5-10-10	Mansfield Depot
Stump & Walter Co., New York 8, N. Y.		
7443	Sawco Acidulous Fertilizer 4-12-4	Stamford
7455	Sawco Bulb Fertilizer 5-10-5	Stamford
7445	Sawco Economy Fertilizer 5-10-5	Stamford
7440	Sawco Emerald Grass Fertilizer 4-12-4	Stamford
7438	Sawco General Garden Fertilizer 4-12-4	Stamford
7446	Sawco Prize Winner Fertilizer 6-12-4	Stamford
7454	Sawco Rose Food 4-12-4	Stamford
7444	Sawco Treewiz 8-6-2	Stamford
Swift & Co., Boston, Mass.		
7027	Red Steer 5-8-7	Middletown
7069	Vigoro 4-12-4	New London
Tennessee Corp., Lockland, Ohio		
7152	Loma 8-8-8 Mineralized	Greenwich
I. P. Thomas & Son Co., Camden, N. J.		
7012	I. P. Thomas 5-8-7	North Haven
7542	I. P. Thomas 5-8-7	North Haven
7013	I. P. Thomas 5-10-10	North Haven
7544	I. P. Thomas 5-10-10	North Haven
7014	I. P. Thomas 7-7-7	North Haven
7545	I. P. Thomas 7-7-7	North Haven
F. H. Woodruff & Sons, Inc., Milford, Conn.		
7461	Gro-Sod 10-6-4	Darien
Woodruff Fertilizer Works, Inc., North Haven, Conn.		
7195	Woodruff's 0-14-14 Fertilizer	North Haven
7194	Woodruff's Tobacco Starter 5-5-15	North Haven
7412	Woodruff's Tobacco Starter 5-5-15	North Haven
7178	Woodruff's 5-8-7 Fertilizer	North Haven
7177	Woodruff's 5-10-10 Fertilizer	North Haven
7552	Woodruff's 5-10-10 Fertilizer	North Haven
7175	Woodruff's Tobacco Fertilizer 6-3-6	North Haven
7553	Woodruff's Tobacco Fertilizer 6-3-6	North Haven
7176	Woodruff's 7-7-7 Fertilizer	North Haven
7179	Woodruff's 8-16-16 Fertilizer	North Haven
7183	Woodruff's 10-6-4 Lawn & Tree Food	North Haven
7551	Woodruff's 10-6-4 Lawn & Tree Food	North Haven

¹ Deficiencies are in bold face type.

² State purchase.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH¹

Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
0.47	3.64	0.19	0.62	4.92	0.31	11.29	10.98	6.27	10.18	7007
0.62	3.44	0.20	0.67	4.93	0.79	11.08	10.29	7.19	9.98	7081
0.67	3.46	0.14	0.70	4.97	0.60	10.64	10.04	.....	9.88	7135
1.06	3.40	0.00	0.59	5.05	0.58	10.89	10.31	8.61	9.64	7305
0.85	3.64	0.16	0.29	4.94	0.90	12.48	11.58	4.31	4.56	7443
0.48	3.30	0.26	0.46	4.50	0.65	12.54	11.89	6.10	6.10	7455
0.82	3.40	0.04	0.33	4.59	1.16	8.56	8.40	6.02	6.02	7445
0.24	2.10	1.44	0.99	4.77	0.53	10.98	10.45	6.42	7.22	7440
0.66	3.60	0.26	0.39	4.91	1.22	11.88	10.66	8.97	9.94	7438
1.69	4.04	0.03	2.04	7.80	0.83	12.56	11.53	0.77	4.12	7446
0.66	3.62	0.34	0.32	4.94	0.65	12.13	11.48	5.59	5.90	7454
0.00	8.36	0.05	0.09	8.50	0.63	5.65	5.02	2.71	2.92	7444
0.00	4.46	0.27	0.23	4.96	0.80	8.96	8.16	6.34	7.34	7027
0.38	3.26	0.22	0.11	3.97	0.58	13.42	12.84	0.00	4.14	7069
0.68	4.92	2.18	0.35	8.13	0.17	8.66	8.49	2.84	8.08	7152
0.56	3.42	0.42	0.27	4.67	2.83	10.98	8.15	4.87	6.16	7012
0.47	3.40	0.32	0.37	4.56	2.25	11.32	9.07	.....	6.10	7542
1.16	3.62	0.04	0.08	4.90	2.49	12.52	10.03	8.09	9.48	7013
1.03	3.64	0.08	0.14	4.89	0.97	12.09	11.12	8.15	10.38	7544
0.69	5.48	0.32	0.23	6.72	0.25	8.77	8.52	7.11	8.24	7014
0.36	5.74	0.48	0.14	6.72	1.62	9.93	8.31	5.11	7.88	7545
0.60	4.72	3.16	1.75	10.23	0.68	9.89	9.21	4.26	4.58	7461
.....	.....	.....	.....	.....	0.14	14.36	14.22	8.72	15.30	7195
1.96	0.56	1.36	1.12	5.00	0.91	6.66	5.75	0.79	14.18	7194
2.19	0.12	1.48	0.92	4.71	0.22	6.01	5.79	0.48	13.60	7412
0.74	3.36	0.50	0.70	5.30	0.30	8.85	8.55	4.82	7.14	7178
0.70	3.28	0.60	0.70	5.28	0.33	8.60	8.27	9.36	10.18	7177
0.61	3.44	0.56	0.65	5.26	0.49	10.93	10.44	8.67	9.94	7552
1.20	0.24	1.54	1.90	4.88	0.70	2.63	1.93	0.55	7.42	7175
1.97	0.53	0.61	2.47	5.58	0.93	4.17	3.24	0.53	6.70	7553
0.50	5.48	0.36	0.68	7.02	0.40	8.97	8.57	4.73	7.88	7176
1.42	5.08	0.46	0.73	7.69	0.21	15.78	15.57	10.18	14.20	7179
1.56	6.00	0.56	1.35	9.47	0.71	6.96	6.25	3.09	5.32	7183
1.11	6.32	0.68	1.20	9.31	0.40	7.74	7.34	1.03	5.06	7551

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of Sampling
7334	Pulverized Sheep Manure. American Agricultural Chemical Co., North Weymouth 91, Mass.	Essex
7343	Pulverized Sheep Manure. American Agricultural Chemical Co., North Weymouth 91, Mass.	Pawcatuck
7338	Sheep Manure. Apothecaries Hall Co., Waterbury, Conn.	New London
7092	Armour's Pulverized Sheep Manure. Armour Fertilizer Works, New York 5, N. Y.	New Milford
7072	Corenco Sheep Manure. Consolidated Rendering Co., Boston 10, Mass.	New London
7156	Corenco Sheep Manure. Consolidated Rendering Co., Boston 10, Mass.	Cos Cob
7158	Davey Shredded Manure. The Davey Tree Expert Co., Inc., Kent, Ohio	Old Greenwich
7458	Norwood Brand Sheep Manure. Norwood Brand Fertilizer Co., No. Reading, Mass.	Stamford
7503	Sheep Manure. Olds & Whipple, Inc., Hartford, Conn.	East Hartford
7211	Wizard Brand Cow Manure. The Pulverized Manure Co., Chicago, Ill.	Danbury
7340	Gro-Fast Sheep Manure. The Rogers and Hubbard Co., Portland, Conn.	New London
7416	Gro-Fast Cow Manure. The Rogers and Hubbard Co., Portland, Conn.	Meriden
7212	Bovung. Walker-Gordon Laboratory Co., Plainsboro, N. J.	Danbury

¹ Deficiencies are in bold face type.

SHEEP MANURE, ETC.¹

In ammonia	Per cent nitrogen				Per cent phosphoric acid				Per cent potash		Station No.
	Organic water-soluble	Organic water-insoluble	Total found	Total guaranteed	Citrate-insoluble	Total found	Total guaranteed	So-called "available" found	Total found	Total guaranteed	
0.00	0.19	1.22	1.41	1.25	.....	1.89	1.00	.....	2.34	2.00	7334
0.00	0.22	0.91	1.13	1.25	.....	1.38	1.00	.....	2.37	2.00	7343
0.00	0.34	1.13	1.47	1.00	0.35	1.50	0.50	1.15	4.13	1.00	7338
0.08	0.07	1.12	1.27	1.50	.....	1.47	1.00	.....	2.90	2.00	7092
0.00	0.62	1.45	2.07	1.25	0.25	1.06	1.00	0.81	4.67	2.00	7072
0.08	0.18	1.04	1.30	1.25	.....	1.09	1.00	.....	2.59	2.00	7156
0.38	1.07	1.83	3.28	2.00	.....	2.09	1.00	.....	2.29	1.00	7158
0.06	0.67	1.55	2.28	1.83	.....	1.08	0.89	.....	4.19	1.03	7458
0.04	0.22	1.07	1.33	1.25	0.64	1.65	1.00	1.01	3.01	2.00	7503
0.04	0.37	1.63	2.04	2.00	0.36	1.48	1.00	1.12	1.77	1.00	7211
0.06	0.13	1.07	1.26	1.25	.....	1.34	1.00	.....	3.38	2.00	7340
0.50	.....	1.59	3.00	2.00	.....	2.86	1.00	.....	1.76	1.00	7416
0.10	.....	1.56	2.00	2.00	0.69	1.95	1.00	1.26	2.49	1.00	7212

TABLE 7. ANALYSES OF LIMESTONE AND SIMILAR MATERIALS

Station No.	Manufacturer and brand	Sampled from stock of or sent by	Chemical analysis			Mechanical analysis (in percentage)		Station No.
			Lime, per cent	Magnesia, per cent	Total oxides, per cent	20 mesh	100 mesh	
3800	New England Lime Co., Adams, Mass.							
	Ground Limestone	Hartford: Production and Marketing Ad- ministration	28.90	17.80	46.70	100.0	84.0	3800
6396	Patterson Limestone Products, Inc., New York, N. Y.							
	Lime	Cheshire: Connecticut Reformatory	25.61	.....	.....	.....	.....	6396
6427	Rogers & Hubbard Co., Portland, Conn.							
	Agricultural Gypsum	Simsbury: Cullman Bros., Inc.	32.26	.....	.....	.....	.....	6427
3970	Manufacturer unknown							
	Lime	Danbury: Production and Marketing Ad- ministration	27.80	18.29	46.09	91.5	32.5	3970
6307	Ground Limestone	Darien: H. M. Bowlby, M.D.	45.36	.....	.....	.....	.....	6307

TABLE 8. ANALYSES OF SMALL PACKAGE FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling	Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.
			In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
7492 7063	American Agricultural Chemical Co., No. Weymouth 91, Mass.	West Haven	0.68	3.88	0.24	0.23	5.03	1.34	11.97	10.63	5.82	5.82	7492
	Agrico for Gardens 5-10-5	Branford	0.71	4.94	0.20	0.59	6.44	0.27	10.27	10.00	2.68	4.44	7063
7125	Armour Fertilizer Works, Atlanta, Ga.	East Windsor Hill	0.25	4.58	0.14	0.34	5.31	0.71	11.54	10.83	0.91	5.24	7125
	Armour's Velvet Green Plant Food 5-10-5	East Windsor Hill	0.28	1.26	1.94	3.48	0.84	3.26	2.42	.....	1.82	7124	
7124	Atkins & Durbrow, Inc., New York, N. Y.	Greenwich	0.48	1.18	2.27	3.93	0.35	2.38	2.03	.....	2.20	7154	
7154	Driconure 2-1-1	Stamford	0.19	2.86	0.18	2.08	5.31	1.17	12.53	11.36	3.36	3.36	7459
7459	Daggett-Pfeil Co., Springfield, N. J.	Manchester	0.02	.....	.....	3.36	.....	27.46	.....	.....	.....	7302	
7302 ²	Pure Bone Meal 2.25-27.0	Greenwich	2.38	2.92	0.34	1.86	7.50	0.43	10.39	9.96	2.80	5.54	7153
7153	Rose Food 8-10-4	New Haven	0.22	3.54	0.52	1.78	6.06	0.67	7.60	6.93	14.56	15.20	7408
7408	G & O Dahlia, Lily, Gladiola, Bulb Tuber 5-6-15	Manchester	0.34	5.02	0.48	1.12	6.96	0.58	10.99	10.41	5.21	6.58	7303
7303	G & O Rose Food 7-8-5	Hartford	0.24	4.28	2.50	2.06	9.08	0.79	8.86	8.07	2.03	3.44	7548
7548	G & O Tree & Shrub Food 9-7-3												

¹ Deficiencies are in bold face type.² Mechanical Analysis. Fine 44.5%; Coarse 55.5%.

TABLE 8. ANALYSES OF SMALL PACKAGE FERTILIZERS¹

Station No.	Manufacturer and brand	Place of sampling	Per cent nitrogen					Per cent phosphoric acid			Per cent potash		Station No.	
			In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total		
	A. H. Hoffman, Inc., Landisville, Pa.													
7073 ²	Hoffman Bone Meal 3.7-20.0	New London .....	.....	.....	.....	.....	3.95	.....	23.84	.....	.....	.....	.....	7073
7214	Hoffman Cow Manure (Dehydrated) 2-1-1	Danbury .....	.....	0.04	0.39	1.32	1.75	0.32	2.06	1.74	.....	2.33	.....	7214
7022	Hoffman Sheep Manure (Kiln Dried) 1.5-1.0-2.0	New Haven .....	.....	0.04	0.19	1.48	1.71	.....	1.65	.....	.....	2.86	.....	7022
	The Hy-Trous Corp., Boston, Mass.													
7393	Hy-Trous 4-8-4	New Haven	1.31	2.12	1.62	0.00	5.05	0.27	9.37	9.10	0.00	5.18	.....	7393
	McCormick & Co., Baltimore, Md.													
7541	Hy-Gro 13-26-13	New Haven	2.59	5.48	6.52	0.21	14.80	0.08	27.52	27.44	6.03	16.10	.....	7541
	Miller Chemical & Fertilizer Corp., Baltimore, Md.													
7470	V-H-P-F 5-25-15	Windsor Locks ...	4.76	1.14	0.14	0.00	6.04	0.21	27.54	27.33	0.00	17.36	.....	7470
	"Na-Churs" Plant Food Co., Marion, Ohio													
7484	"Na-Churs" Plant Food 5-5-10	Plantsville	2.35	3.44	1.29	0.00	6.08	0.22	5.38	5.16	0.00	7.70	.....	7484
	Olds & Whipple, Inc. Hartford, Conn.													
7517	O & W 5-8-7 Potato & General Pur- pose Fertilizer	East Hartford	0.55	0.08	3.92	0.77	5.32	0.35	9.20	8.85	6.03	7.76	.....	7517
	Plantspur Products Co., Jersey City, N. J.													
7463	Plantspur Turf Builder & Fertilizer 4-4-2	Norwalk	0.10	4.12	0.10	0.16	4.48	1.55	5.67	4.12	1.34	1.82	.....	7463

	The Frank S. Platt Co., New Haven, Conn.													
7540	Platco Special 5-8-7 Fertilizer	New Haven	0.70	3.72	0.44	0.21	5.07	0.75	9.27	8.52	6.25	7.64	7540	
	The Pulverized Manure Co., Chicago, Ill.													
7213	Wizard Brand Pulverized Sheep Manure 2-1-2	Danbury .....	.....	0.00	0.41	1.49	1.90	0.51	2.13	1.62	.....	2.99	7213
	The Rogers & Hubbard Co., Portland, Conn.													
7415 ²	Gro-Fast Bone Meal 2-23.0	Meriden .....	.....	0.02	.....	.....	2.78	.....	30.74	.....	.....	.....	7415
7336	Gro-Fast Plant Food 5-8-5	Centerbrook	0.29	2.84	0.98	1.34	5.45	0.52	9.67	9.15	5.45	7.08	7336	
	Sears, Roebuck & Co., Chicago, Ill.													
7464	Cross Country Bulb Food 4-12-8	Norwalk	0.12	5.44	0.36	0.72	6.64	1.28	13.77	12.49	8.69	9.78	7464	
7535	Cross Country Rose Food 5-10-5	Bridgeport	0.21	4.42	0.18	0.30	5.11	2.28	12.41	10.13	4.61	5.68	7535	
	Smith Agricultural Chemical Co., Columbus, Ohio													
7524	Sacco Plant Food 4-12-4	Fairfield	0.27	3.46	0.00	0.52	4.25	1.93	14.61	12.68	1.91	4.58	7524	
	Stumpp & Walter Co., New York, N. Y.													
7457	Sawco Emerald Grass Fertilizer 4-12-4	Stamford	0.46	3.00	0.32	0.32	4.10	1.70	12.10	10.40	8.70	8.70	7457	
7456	Sawco Pulverized Sheep Manure 2-1-2	Stamford .....	.....	0.28	0.49	1.83	2.60	.....	2.56	.....	.....	2.89	7456
	Swift & Co., Boston, Mass.													
7342	Swift's Pulverized Sheep Manure 2-1-2	New London .....	.....	0.00	0.44	1.66	2.10	.....	1.54	.....	.....	2.52	7342
7040	Vigoro 4-12-4	Middletown	0.16	3.78	0.10	0.16	4.20	0.29	13.49	13.20	4.48	4.48	7040	
7339	Vigoro 4-12-4	New London	1.05	2.40	0.54	0.13	4.12	0.77	15.76	14.99	1.05	4.58	7339	
7409	Vigoro (Tablets) 4-12-4	New Haven	0.00	4.06	0.14	0.28	4.48	0.62	13.55	12.93	4.88	4.88	7409	
	Tennessee Corp., Lockland, Ohio													
7046	Loma 5-10-5	Greenwich	0.00	4.54	0.27	0.26	5.07	0.21	11.64	11.43	3.96	5.24	7046	

¹ Deficiencies are in bold face type.² Mechanical Analysis. Fine 41.0%; Coarse 59.0%.³ Mechanical Analysis. Fine 66.5%; Coarse 33.5%.

TABLE 9. ANALYSES OF OTHER MISCELLANEOUS MATERIALS

Station No.	Material	Nitrogen per cent	Total phosphoric acid per cent	"Available" phosphoric acid per cent	Water-soluble potash per cent	Chlorine per cent	Other analytical items per cent
5195	Basic slag .....	.....	0.00	.....	.....	.....
6338	Basil residue	2.90	0.61	0.37	0.79	.....	Sol. organic N 0.16; organic active insol. N 0.67; organic inactive insol. N 2.07.
6862	Composted leaf mold humus	0.80	1.05	0.67	1.06	0.00	
6663	Cottonhull bran	1.15	.....	.....	.....	.....	Moisture 7.07.
6308	Fertilizer	5.00	11.59	9.62	6.16	.....
6985	Fertilizer	1.92	7.67	7.53	7.18	1.01	Moisture 30.0.
6986	Fertilizer	5.54	11.00	10.80	10.76	7.38	
7142	Fertilizer	8.21	6.78	6.24	2.70	1.21	
7494	Fertilizer	5.75	5.31	4.82	5.62	3.68	Nitrate N 0.33; ammonia N 4.44; sol. organic N 0.26; insol. organic N 0.72.
7495	Fertilizer	8.07	5.91	5.56	5.60	3.67	Nitrate N 0.00; ammonia N 4.84; sol. organic N 1.06; insol. organic N 2.17.
7496	Fertilizer	8.66	3.45	2.68	4.80	3.29	Nitrate N 0.00; ammonia N 6.94; sol. organic N 1.30; insol. organic N 0.42.
7497	Fertilizer	8.14	3.62	3.06	4.76	3.05	Nitrate N 0.00; ammonia N 6.38; sol. organic N 1.37; insol. organic N 0.39.
6834	Granite dust	0.00	0.73	0.26	0.24	.....
5759	Humin	1.81	0.14	.....	0.02	1.53	Moisture 66.6.
8117	Humit	7.51	2.62	2.40	6.84	7.87	Nitrate N 0.93; ammonia N 1.02; sol. organic N 4.72; organic active insol. N 0.42; organic inactive insol. N 0.42.

5060	Oyster shell .....	.....	.....	.....	.....	.....	.....	Fe 100 p.p.m.; Al 100 p.p.m.; Mn 50 p.p.m.; Co less than 2 p.p.m.; Cu, Pb, Zn, Cr, B traces.
3933	Sewage sludge	1.92	5.75	.....	0.15	trace	.....	No nitrate, ammonia or sol. organic N; organic active insol. N 0.99; organic inactive insol. N 0.93.
5814	Tobacco screenings	3.64	0.96	.....	3.32	0.78	.....	.....
5913	Tobacco stems	1.77	0.94	.....	8.77	1.83	.....	Moisture 20.8.
5914	Tobacco stems	1.96	0.78	.....	9.05	1.80	.....	Moisture 20.8.
5921	Tobacco stems	1.91	.....	.....	8.66	1.63	.....	Moisture 20.0.
5922	Tobacco stems	1.50	.....	.....	5.19	1.85	.....	Moisture 22.6.
6793	Turkey manure	0.38	0.75	0.22	0.47	0.08	.....	Moisture 41.8.
6794	Turkey manure	0.35	0.74	0.66	0.39	0.01	.....	Moisture 68.6.
5358	Waste material	1.71	2.00	1.49	1.97	0.23	.....	Moisture 7.84; nitrate N 0.00; ammonia N 0.08; sol. organic N 0.25; organic active insol. N 0.45; organic inactive insol. N 0.93; ash 22.98.
5949	Waste material	0.64	0.44	.....	0.23	0.03	.....	Moisture 71.0; no nitrate or ammonia N; sol. organic N 0.08; insol. organic N 0.56; Ca 0.64; Mg 0.10; Mn 0.006; Fe 0.05; Al 0.03; Cu 0.002; B 0.002.

INDEX

	PAGE
Agricultural Supply Co., West Haven, Conn.	11, 32
Allied Chemical & Dye Corp., New York, N. Y.	11, 25
American Agricultural Chemical Co., No. Weymouth, Mass.	11, 28, 32, 42, 45
American Cyanamid Co., New York, N. Y.	11, 25
Apothecaries Hall Co., Waterbury, Conn.	11, 26, 28, 29, 30, 32, 42
Archer-Daniels-Midland Co., Minneapolis, Minn.	11, 12, 27
Armour Fertilizer Works, New York, N. Y.	12, 32, 42, 45
Ashcraft-Wilkinson Co., Atlanta, Ga.	12, 26
Associated Seed Growers, Inc., Milford, Conn.	12, 34
Atkins & Durbrow, Inc., New York, N. Y.	45
Bartlett, F. A., Tree Expert Co., The, Stamford, Conn.	12, 34
Bone meal, analyses of	30
Buckeye Cotton Oil Co., Cincinnati, Ohio	12
Castor pomace, analyses of	26
Central Soya Co., Inc., Fort Wayne, Ind.	12, 27
Chilean Nitrate Sales Corp., New York, N. Y.	12, 25
Consolidated Chemical Industries, Inc., New York, N. Y.	12
Consolidated Rendering Co., Boston, Mass.	12, 25, 28, 29, 30, 31, 34, 42
Cottonhull ashes, analyses of	29
Cottonseed meal, analyses of	26
Cyanamid, analyses of	25
Daggett-Pfeil Co., Springfield, N. J.	45
Davey Tree Expert Co., The, Kent, Ohio	13, 34, 42
Davison Chemical Corp., The, Baltimore, Md.	13, 28, 30, 34
Dry ground fish, analyses of	30
Doughten Seed Co., The, Jersey City, N. J.	13
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.	13, 26
Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	13, 28, 29, 34
Faesy & Besthoff, Inc., New York, N. Y.	13, 45
Fertilizer, analyses of mixed	32
analyses of small packages	45
classification and tonnage	19, 20
inspection	18
law and regulations	5
terms and materials	10
Ford Motor Co., Dearborn, Mich.	14
Frank's Market Garden, Springfield, Mass.	14, 36
Goulard & Olena, Inc., Skillman, N. J.	14, 30, 36, 45
Hoffman, Inc., A. H., Landisville, Pa.	14, 46
Horn and hoof meal, analysis of	27
Humphreys-Godwin Co., Memphis, Tenn.	14
Hy-Trous Corp., The, Boston, Mass.	46
Imperial Commodities Corp., New York, N. Y.	11
International Minerals & Chemical Corp., Woburn, Mass.	14, 28, 29, 36
Kellogg & Sons, Inc., Spencer, Buffalo, N. Y.	14, 26
Limestone and similar materials	44
Linseed oil meal, analysis of	27
Lovitt, L. B., & Co., Memphis, Tenn.	14, 26
Marianna Sales Co., Memphis, Tenn.	14, 27
McArdle's Seed Store, Greenwich, Conn.	14
McCormick & Co., Inc., Baltimore, Md.	14, 46
Miller Chemical & Fertilizer Corp., Baltimore, Md.	46
Milorganite, analysis of	31
Miscellaneous	48

INDEX—(Continued)

	PAGE
"Na-Churs" Plant Food Co., Marion, Ohio	14, 36, 46
New England Lime Co., Adams, Mass.	44
Nitrate of ammonia, analyses of	25
Nitrate of soda, analyses of	25
Norwood Brand Fertilizer Co., No. Reading, Mass.	14, 42
Old Deerfield Fertilizer Co., Inc., So. Deerfield, Mass.	14, 25, 29, 30, 36
Olds & Whipple, Inc., Hartford, Conn.	15, 26, 27, 28, 29, 30, 36, 42, 46
Patterson Limestone Products, Inc., New York, N. Y.	44
Plantspur Products Co., Jersey City, N. J.	15, 38, 46
Platt, Frank S., Co., New Haven, Conn.	15, 38, 47
Potash salts, analyses of	29
Precipitated bone, analyses of	28
Premier Peat Moss Corp., New York, N. Y.	15
Pulverized Manure Co., The, Chicago, Ill.	15, 42, 47
Ralston Purina Co., St. Louis, Mo.	15
Ra-Pid-Gro Corp., Dansville, N. Y.	15
Ray & King, Lubbock, Tex.	15
Registrations	11
Rogers & Hubbard Co., The, Portland, Conn.	15, 26, 28, 29, 30, 31, 38, 42, 44, 47
Rollins, E. H., & Sons, Granby, Conn.	11
Ruhm Phosphate & Chemical Co., Mt. Pleasant, Tenn.	16
Saratoga Laboratories, Inc., Saratoga Springs, N. Y.	16, 38
Scott, O. M., & Sons Co., Marysville, Ohio	16, 38
Sears, Roebuck & Co., Chicago, Ill.	16, 47
Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.	16, 31
Sheep manure and other materials	42
Shoemaker, M. L., Co., Div. of Wilson & Co., Inc., Philadelphia, Pa.	16, 38
Smith Agricultural Chemical Co., Columbus, Ohio	16, 38, 47
Smith-Douglass Co., Inc., Norfolk, Va.	16, 38
Soybean oil meal, analysis of	27
Special and home mixtures	19
Stumpp & Walter Co., New York, N. Y.	16, 25, 28, 31, 40, 47
Sulphate of ammonia, analyses of	25
Superphosphate (acid phosphate), analyses of	28
Swift & Co., Boston, Mass.	16, 27, 40, 47
Tankage, ground, analysis of	31
Tennessee Corp., Lockland, Ohio	17, 40, 47
Thomas, I. P., & Son Co., Camden, N. J.	17, 26, 28, 40
Uramon Fertilizer Compound	26
Urea, analyses of	26
Van Iderstine Co., Long Island City, N. Y.	17, 31
Walker-Gordon Laboratory Co., Plainsboro, N. J.	17, 42
Woodruff, F. H., & Sons, Inc., Milford, Conn.	17, 40
Woodruff Fertilizer Works, Inc., No. Haven, Conn.	17, 26, 40