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COMMERCIAL FERTILIZERS

Report for 1948



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CONNECTICUT AGRICULTURAL EXPERIMENT
STATION, NEW HAVEN, CONNECTICUT

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REPORT ON INSPECTION AND ANALYSIS OF COMMERCIAL FERTILIZERS, 1948

H. J. FISHER, *Chemist in Charge*¹

CONNECTICUT LAW AND REGULATIONS REGARDING COMMERCIAL FERTILIZERS

The term "commercial fertilizers" as used in the Connecticut fertilizer statute includes any and every substance imported, manufactured, prepared or sold for fertilizing or manuring or soil amendment purposes, except barnyard manure and stable manure that have not been artificially treated or manipulated, marl and lime. But no commercial fertilizer containing less than 0.82 per cent of nitrogen, or less than 1 per cent of phosphoric acid, or less than 1 per cent of potash is acceptable for registration.

The seller is responsible for the proper labelling of each package of fertilizer, for the registration of each brand sold or offered for sale, for the payment of the required analysis fee and for the payment of the tonnage tax. If, however, proper labelling, registration and payments of analysis fees and of tonnage tax have been provided for by the manufacturer or by another responsible person, all sellers of such brands are released from the above-mentioned requirements. The retailer, therefore, should assure himself that the requirements of the law have been met by the manufacturer of the brands which he handles, or himself be prepared to meet all these requirements.

It frequently happens that a manufacturer or jobber sells fertilizer materials which are the products of, and which are registered by, another firm or individual. Distributors in such cases should sell such materials by the exact brand names under which they are registered in order that there may be no mistake as to the identity of brands. Any change in the brand names, or failure to make the identity of the brand and its manufacturer clear, makes the distributor liable for the registration of the product as his own brand.

The law exempts from registration, and from other requirements referred to, only (1) fertilizers passing through the State in transit; (2) fertilizers and fertilizer materials shipped to regular fertilizer factories to be used for manufacturing purposes, and (3) fertilizers and fertilizer chemicals sold to the Connecticut Agricultural Experiment Station for experimental purposes.

Cottonseed, linseed and soybean meals, when sold or used for fertilizer purposes, must be registered as fertilizers and the specified fees paid thereon. For such products the registration fee is \$10.00 for each brand, payable annually, and six cents per ton tonnage fee, payable semi-annually.

These fees are entirely apart from those required by the feeding stuffs statute.

¹ Analyses were made by Messrs. O. L. Nolan and L. G. Keirstead and Miss Helen Kocaba; inspection and sampling by Mr. Richard Nichols; and compilations by Mr. Nolan and Mrs. Marion C. Thorpe.

Because manufacturers or jobbers do not know how much, if any, of their vegetable meal tonnage is sold or used as fertilizer, local dealers and purchasers report their sales or purchases to this Station. The information is not for publication but is used to inform manufacturers of the total sales of their meal as fertilizer in this state. It is expected that the fees provided for by statute will be paid by the manufacturer or other party responsible for the brands.

Official Definitions of Fertilizer Terms and Materials¹

An *acid-forming fertilizer* is one that is capable of increasing the residual acidity of soil.

A *non-acid-forming fertilizer* is one that is not capable of increasing the residual acidity of the soil.

Acidulated fish tankage or acidulated fish scrap is the rendered product derived from fish and treated with sulfuric acid.

Activated sewage products are those made from sewage freed from grit and coarse solids and aerated after being inoculated with micro-organisms. The resulting flocculated organic matter is withdrawn from the tanks, filtered with or without the aid of coagulants, dried, ground and screened.

Agricultural liming material is material whose calcium and magnesium content is capable of neutralizing soil acidity.

Air-slaked lime is a product composed of varying proportions of the oxide, hydroxide and carbonate of calcium, or of calcium and magnesium, and derived from exposure of quicklime.

Ammoniated superphosphate is the product obtained when superphosphate is treated with ammonia or with a solution containing free ammonia and other forms of nitrogen dissolved therein.

The word *analysis*, as applied to fertilizers, shall designate the percentage composition of the product expressed in those terms that the law requires and permits.

Ashes from leached wood are unleached ashes resulting from burning wood that has been exposed to or digested in water or other liquid solvent, as in the extraction of dyes, so that a part of the plant food has been dissolved and removed.

Available phosphoric acid is the sum of the water-soluble and the citrate-soluble phosphoric acid.

"Basic" lime phosphate (lime-based superphosphate) is a superphosphate to which liming materials have been added in a quantity at least six per cent (6%) calcium carbonate equivalents in excess of the quantity required to convert all water-soluble phosphate to the citrate-soluble form.

Basic phosphate slag is a by-product in the manufacture of steel from phosphatic iron ores. The product shall be finely ground and shall contain no admixture of materials other than what results in the original process of manufacture. It shall contain not less than twelve per cent (12%) of total

¹ Association of Official Agricultural Chemists, as of October 13, 1948.

phosphoric acid (P_2O_5), not less than eighty per cent (80%) of which shall be soluble in two per cent (2%) citric acid solution according to the Wagner method of analysis, **2.19** or **2.20**. Any phosphate slag not conforming to this definition shall be designated *low grade*.

Bat guano is partially decomposed bat manure.

Bat manure is the dry excrement from bats.

A *brand* is a term, design or trademark used in connection with one or several grades of fertilizers.

A *brand name* is a specific designation applied to an individual fertilizer.

Calcium nitrate (nitrate of lime) is a commercial product consisting chiefly of calcium nitrate, and it shall contain not less than fifteen per cent (15%) of nitrogen.

Calcium metaphosphate is a product composed chiefly of the vitreous compound indicated by the formula $Ca(PO_3)_2$. Its fineness and its content of available phosphoric acid (P_2O_5) shall be stipulated. Example: Calcium metaphosphate—sixty per cent (60%) available phosphoric acid (P_2O_5).

Citrate-soluble ("reverted") phosphoric acid is that part of the total phosphoric acid in fertilizer that is insoluble in water but soluble in a solution of citrate of ammonia according to the method adopted by the Association of Official Agricultural Chemists.

Crude, inert, or slow-acting nitrogenous materials are unprocessed organic substances relatively high in nitrogen but having a very low value as plant food and showing a low activity by both the alkaline and neutral permanganate methods (below 50% and 80%, respectively).

Cyanamid is a commercial product composed chiefly of calcium cyanamide ($CaCN_2$), and it shall contain not less than twenty-one per cent (21%) of nitrogen.

Dicalcium phosphate is a manufactured product consisting chiefly of a dicalcic salt of phosphoric acid.

Dissolved bone is ground bone or bone meal that has been treated with sulfuric acid.

Dolomite is a mineral composed chiefly of carbonates of magnesium and calcium in substantially unimolal (1-1.19) proportions.

Double sulfate of potash and magnesia (Langbeinite). Double sulfate of potash and magnesia (langbeinite) is a commercial product containing not less than twenty-one per cent (21%) of potash (K_2O), nor less than fifty-three per cent (53%) of sulfate of magnesia and not more than two and one-half per cent (2.5%) of chlorine.

Dried blood is the collected blood of slaughtered animals, dried and ground and containing not less than twelve per cent (12%) of nitrogen in organic forms.

Dried, pulverized, or shredded manures are what the name indicates, and not mixtures of manures and other materials.

Fertilizer grade shall represent the minimum guaranty of its plant food expressed in terms of *nitrogen (not ammonia)*, *available phosphoric acid*, and *water-soluble potash*.

Fish tankage, fish scrap, dry ground fish or fish meal fertilizer grade, is the dried ground product derived from rendered or unrendered fish.

Fused tricalcium phosphate is a product composed chiefly of the alpha form of the compound represented by the formula $\text{Ca}_3(\text{PO}_4)_2$. Its fineness and content of available phosphoric acid (P_2O_5) shall be stipulated. Example: Fused tricalcium phosphate—twenty-five per cent (25%) available phosphoric acid (P_2O_5).

Garbage tankage is the rendered, dried and ground product derived from waste household food materials.

Pulverized limestone (fine-ground limestone) is the product obtained by grinding either calcitic or dolomitic limestone so that all the material will pass a 20-mesh sieve, and at least seventy-five per cent (75%) will pass a 100-mesh sieve.

Ground limestone (coarse-ground limestone) is the product obtained by grinding either calcitic or dolomitic limestone so that all the material will pass a 10-mesh sieve, and at least fifty per cent (50%) will pass a 100-mesh sieve.

Ground shells is the product obtained by grinding the shells of mollusks so that not less than fifty per cent (50%) shall pass a 100-mesh sieve. The product shall also carry the name of the mollusk from which said product is made.

Ground shell marl is the product obtained by grinding natural deposits of shell marl so that at least seventy-five per cent (75%) shall pass a 100-mesh sieve.

Ground raw bone is dried ground animal bones that have not been steamed previously under pressure.

Ground steamed bone is ground animal bones that have been steamed previously under pressure.

Gypsum, land plaster or crude calcium sulfate is a product consisting chiefly of calcium sulfate. It may contain twenty per cent (20%) of combined water. (It does not neutralize acid soils.)

High calcic products are materials of which ninety per cent (90%) or more of the total calcium and magnesium content consists of calcium oxide.

High magnesian products are materials in which more than ten per cent (10%) of the total calcium and magnesium oxide consists of magnesium oxide.

Hoof and horn meal is processed, dried, ground hoofs and horns.

Hydrated or slaked lime is a dry product consisting chiefly of the hydroxide of calcium and oxide-hydroxide of magnesium.

Kainit is a potash salt containing potassium and sodium chlorides and sometimes sulfate of magnesia with not less than twelve per cent (12%) of potash (K_2O).

Leached wood ashes are ashes from burned unleached wood with part of their plant food removed by artificial means or by exposure to rains, snows, or other solvent.

The word *lime* when applied to liming materials means either calcium oxide or calcium and magnesium oxides.

Magnesia (magnesium oxide) is a product consisting chiefly of the oxide of magnesium. Its grade shall be stipulated. Example: Magnesia—75 per cent MgO.

Manganese. The water-soluble (or available) manganese in fertilizers shall be expressed as manganese (Mn).

Manganese sulfate. The term manganese sulfate, when applied to an ingredient of a mixed fertilizer, shall designate anhydrous manganous sulfate (MnSO_4).

Manure salts are potash salts containing high percentages of chloride and from twenty per cent (20%) to thirty per cent (30%) of potash (K_2O). The term *double manure salts* should be discontinued.

Monoammonium phosphate (fertilizer grade) is a commercial salt made by combining phosphoric acid with ammonia. It shall contain not less than ten per cent (10%) of nitrogen and not less than forty-six per cent (46%) of available phosphoric acid.

Muriate of potash (commercial potassium chloride) is a potash salt containing not less than forty-eight per cent (48%) of potash (K_2O), chiefly as chlorides.

Nitrate of ammonia (ammonium nitrate) is a product composed chiefly of nitrate of ammonium. Its nitrogen content shall be stipulated. Example: Ammonium nitrate—30 per cent N.

Nitrate of potash (commercial potassium nitrate) is a salt containing not less than twelve per cent (12%) of nitrogen and forty-four per cent (44%) of potash (K_2O).

Nitrate of soda (commercial sodium nitrate) is commercial sodium nitrate containing not less than fifteen per cent (15%) of nitrogen, chiefly as sodium nitrate.

Nitrate of soda and potash is a commercial product containing nitrates of sodium and potassium, and it shall contain not less than fourteen per cent (14%) of nitrogen (N) and fourteen per cent (14%) of potash (K_2O).

Peat is a partly decayed vegetable matter of natural occurrence. It is composed chiefly of organic matter that contains some nitrogen of low activity.

Charred peat is peat artificially dried at a temperature that causes partial decomposition.

Phosphate rock is a natural rock containing one or more calcium phosphate minerals of sufficient purity and quantity to permit its use, either directly or after concentration, in the manufacture of commercial products.

The term *phosphoric acid* designates phosphorus pentoxide (P_2O_5).

The term *potash* designates potassium oxide (K_2O).

Potassium metaphosphate is a product composed chiefly of the crystalline compound represented by the formula KPO_3 . Its fineness and content of phosphoric acid (P_2O_5) and of potash (K_2O) shall be stipulated. Example: Potassium metaphosphate—fifty-five per cent (55%) available phosphoric acid (P_2O_5), thirty-seven per cent (37%) potash (K_2O).

Precipitated bone phosphate is a by-product from the manufacture of glue from bones and is obtained by neutralizing the hydrochloric acid solution of processed bone with calcium hydroxide. The phosphoric acid is chiefly present as dicalcium phosphate.

Precipitated phosphate is a product consisting mainly of dicalcium phosphate obtained by neutralizing with calcium hydroxide the acid solution of either phosphate rock or processed bone.

Primary fertilizer components are those at present generally recognized by law as necessary to be guaranteed in fertilizers, namely: nitrogen, phosphoric acid (P_2O_5), and potash (K_2O).

Secondary fertilizer components are those other than the "primary fertilizer components" that are essential to the proper growth of plants and that may be needed by some soils. Some of these components are calcium, magnesium, sulfur, manganese, copper, zinc and boron.

Process tankages are products made under steam pressure from crude inert nitrogenous materials, with or without the use of acids, for the purpose of increasing the activity of the nitrogen. These products shall be called "Process Tankages" with or without further qualification. The water-insoluble nitrogen in these products shall test at least fifty per cent (50%) active by the alkaline, or eighty per cent (80%) by the neutral, permanganate method.

Products secured by heating calcium phosphate with alkali salts containing potash are non-acid phosphates with potash. They are *not* potassium phosphate.

Quick lime, burned lime, caustic lime, lump lime, unslaked lime. These designations shall apply to calcined materials, the major part of which is calcium oxide, in natural association with a lesser amount of magnesium oxide, and which is capable of slaking with water.

Sheep manure—wool waste is the by-product from wool-carding establishments consisting chiefly of sheep manure, seeds, and wool fiber.

Soft phosphate with colloidal clay is a very finely divided low-analysis by-product from mining Florida rock phosphate by a hydraulic process in which the colloidal materials settle at points in artificial ponds and basins farthest from the washer, and are later removed after the natural evaporation of the water.

Sulfate of ammonia (commercial ammonium sulfate) is a commercial product composed chiefly of ammonium sulfate. It shall contain not less than twenty and five-tenths per cent (20.5%) of nitrogen.

Sulfate of potash-magnesia is a potash salt containing not less than twenty-five per cent (25%) of potash (K_2O), nor less than twenty-five per

cent (25%) of sulfate of magnesia, and not more than two and one-half per cent (2.5%) of chlorine.

Sulfate of potash (commercial potassium sulfate) is a potash salt containing not less than forty-eight per cent (48%) of potash (K_2O) chiefly as sulfate, and not more than two and one-half per cent (2.5%) of chlorine.

Superphosphate is a commercial phosphate, the phosphoric acid (P_2O_5) content of which is due chiefly to monocalcium phosphate. (The grade that shows the available phosphoric acid should always be used as a prefix to the name. Example: 16 per cent superphosphate.)

Tankage (without qualification) is the rendered, dried and ground by-product, largely meat and bone from animals (slaughtered or that have died otherwise).

A unit of plant food is twenty (20) pounds, or one per cent (1%) of a ton.

Unleached wood ashes are ashes from burned unleached wood that have had no part of their plant food removed and that contain four per cent (4%) or more of water-soluble potash (K_2O).

Waste lime, by-product lime, is any industrial waste or by-product containing calcium or calcium and magnesium in forms that will neutralize acids. It may be designated by prefixing the name of the industry or process by which it is produced, i.e., gas-house lime, tanners' lime, acetylene lime-waste, lime-kiln ashes, calcium silicate, etc.

REGISTRATIONS

Late Registrations for 1947

To the brands registered for 1947 in our last report should be added the following:

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

34% Protein Old Process Linseed Oil Meal

Blatchley & Ballard, Inc., Middletown, Conn.

41% Soya Bean Meal

Brown Oil & Chemical Corp., New York 5, N. Y.

34% O. P. Linseed Meal

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

Old Process Linseed Meal

Shelco Milling Co., 602 Cotton Exchange Bldg., Memphis, Tenn.

41% Protein Cottonseed Meal

Woodruff Fertilizer Works, North Haven, Conn.

Ecuadorian Cotton Seed Meal Blended with 5% Castor Pomace

Registrations for 1948

For 1948, 55 firms and individuals registered 244 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

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

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
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
Aero-prills Ammonium Nitrate Fertilizer Compound

Apothecaries Hall Co., Waterbury, Conn.

Bone Meal
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
Liberty Fertilizer 5-10-10 with 2% Magnesium
Liberty Fertilizer Special for Fruit and Grass 7-7-7
Liberty Green Gro Fertilizer 6-7-4
Liberty High Grade Market Gardeners 5-8-7
Liberty High Grade Market Gardeners with Sulphate of Potash 5-8-7
Liberty Tobacco Mixture 5-3-5
Liberty Tobacco Mixture 6-3-6
Liberty Tobacco Mixture (Castor Pomace Base)
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
Sulphate of Potash and Magnesium
Superphosphate

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

Armour's Big Crop Fertilizer 0-14-14
Armour's Big Crop Fertilizer 4-12-4
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 8-16-16
Armour's Big Crop Superphosphate 20%
Armour's Big Crop Tobacco Special 6-3-6
Armour's Bone Meal Fertilizer
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 Prime Quality
Gilt Edge Brand Old Process Soybean Oil Meal
(registered for Central Oil & Milling Co.)

Associated Seed Growers, Inc., Milford, Conn.

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

Atkins & Durbrow, Inc., 165 John St., New York 7, N. Y.

DRICONURE

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

Bartlett Green Tree Food 6-8-6

F. W. Berk & Co., Inc., New York 17, N. Y.

Nitrate of Potash

Buckeye Cotton Oil Co., Cincinnati, Ohio

Buckeye 41% Cottonseed Meal

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

Chilean Nitrate of Soda—Champion Brand

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

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

Davey Tree Expert Co., Kent, Ohio

Davey Shredded Manure
Davey Tree Food 12-4-4

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

Davco Granulated Fertilizer 0-14-14
Davco Granulated Fertilizer 5-8-7
Davco Granulated Fertilizer 5-10-5
Davco Granulated Fertilizer 5-10-10
Davco Granulated Fertilizer 7-7-7
Davco Granulated Superphosphate 20%

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

DUPONT URAMON Fertilizer Compound

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

Castor Pomace (registered for Baker Castor Oil Co.)
Eastern States 0-14-14
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 LC
Eastern States 8-16-16
Eastern States 8-16-16 SM
Eastern States 10-10-10
Eastern States 10-20-0
Eastern States Muriate of Potash
Eastern States 20% Superphosphate Granulated and Pulverized

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

Dried Blood
Pure Bone Meal 2.25
Pure Bone Meal 2.47
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.

Green Thumb

Goulard & Olena, Inc., Skillman, N. J.

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% Protein Prime Cottonseed Meal

International Minerals & Chemical Corp., Woburn, Mass.

International Caribee 5-10-10-2
International Fruit 7-7-7-3
International Potato 5-10-10-2
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

A. L. Koster, 1121 Farmington Ave., West Hartford, Conn.

Dry Mix Plant Food 5-8-7
Dry Mix Plant Food 7-7-7

L. B. Lovitt & Co., Memphis, Tenn.

"Lovit Brand" 36% Cottonseed Meal
"Lovit Brand" 41% Protein Cottonseed Meal

McArdle's Seed Store, Greenwich, Conn.

Baugh's Raw Bone Meal

McCormick & Co., Inc., Baltimore 2, Md.

Hy-Gro

Miller Chemical & Fertilizer Corp., Baltimore 31, Md.

Soluble Fertilizer (VHPF)

"Na-Churs" Plant Food Co., 121-127 Garden St., Marion, Ohio

"Na-Churs" Plant Food 5-5-10

Norwood Brand Fertilizer Co., No. Reading, Mass.

Norwood Brand Sheep Manure

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

Double Sulphate of Potash Magnesia
Granulated 20% Superphosphate
Old Deerfield Castor Pomace
Old Deerfield Cotton Hull Ash 35%
Old Deerfield Dry Ground Fish
Old Deerfield Muriate of Potash
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 7-7-7 Fertilizer
Triple Superphosphate

Olds & Whipple, Inc., Hartford, Conn.

Horn and Hoof Meal
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 Ammonia
O & W Sulphate of Potash

O & W Sulphate of Potash and Magnesia
 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 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 Potash derived from Cotton Hull Ash
 O & W 7-7-7 Top Dressing and Grass Fertilizer
 Precipitated Bone Phosphate

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

Plantspur

Frank S. Platt Co., 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.

Premiurnure

The Pulverized Manure Co., 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

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

Bulk, Cotton Bur Ashes

Riverside Oil Mill, Marks, Miss.

Expello Brand Cottonseed Meal (41%)

The Rogers & Hubbard Co., Portland, Conn.

Cotton Hull Ash

Dry Ground Fish

Gro-Fast Bone Meal

Gro-Fast Cow Manure

Gro-Fast Plant Food

Gro-Fast Sheep Manure

Hubbard Castor Pomace

Hubbard Golf Course Fertilizer

Hubbard High Potash Fertilizer

Hubbard Muriate of Potash

Hubbard Potato Fertilizer

Hubbard Tobacco Grower

Red H 0-14-14

Red H 4-12-4

Red H 4-12-8

Red H 5-8-7

Red H 5-10-5

Red H 5-10-10

Red H 7-7-7

Red H 8-16-16

Superphosphate

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

Linseed Meal

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

Red Seal Brand Ruhm's Phosphate Rock 30%

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

Scott's Lawn Food Plus Weed Control 7-11-5
Turf Builder

Sears, Roebuck & Co., Chicago 7, Ill.

Cross Country Bulb Food 4-12-8
Cross Country Plant Food 4-12-4
Cross Country Sheep Manure 1.5-1.0-2.0
Garden Master Sheep Manure

Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.

Milorganite

Shelco Milling Co., 602 Cotton Exchange Bldg., Memphis, Tenn.

41% Cottonseed Meal

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

M. L. Shoemaker's "Swift-Sure" 4-10-0
Tobacco Starter

The Southern Cotton Oil Co., Memphis, Tenn.

Sco-Co Brand 41% Protein Cottonseed Meal

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

Sawco Acidulous Fertilizer 5-10-5
Sawco Bone Fertilizer 2.47-22.00
Sawco Cow Manure 1.5-1-1
Sawco Emerald Grass Fertilizer 5-10-5
Sawco General Garden Fertilizer 5-10-5
Sawco Rose Food 5-10-5
Sawco 20% Superphosphate 0-20-0
Sawconure 2-1-1

Summers Fertilizer Co., Inc., Baltimore 2, Md.

"Summers Best on Earth" 0-20-20
"Summers Best on Earth" 8-16-16

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

Blenn
Brimm
Sheep Manure
Swift's 41% Protein Cottonseed Meal
Vigoro

Tennessee Corp., Lockland, Ohio

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

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

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

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-Plant Food 5-10-5

Gro-Sod Lawn Food 10-6-4

Woodruff Fertilizer Works, No. Haven, Conn.

Castor Pomace

Tobacco Fertilizer 6-3-6

Woodruff's 0-14-14 Fertilizer

Woodruff's 5-8-7 Fertilizer

Woodruff's 5-8-10 Fertilizer

Woodruff's 7-7-7 Fertilizer

Woodruff's 10-6-4 Lawn & Tree Food

FERTILIZER INSPECTION FOR 1948

During the war, under War Food Order No. 5, the sale of fertilizers throughout the United States was limited to the grades specified by the order for each district. This order was revoked as of September 30, 1945. Since that time some states have restricted by law or regulation the number of grades that may be sold, but the present Connecticut law contains no provision that confers authority on this Station to limit the number of grades that may be registered or to require a minimum percentage of plant food. The law of no other New England state authorizes such 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. It has been hoped that manufacturers would voluntarily confine their mixtures to these grades since this voluntary limitation would be to the advantage of both manufacturers and farmers.

The latest list was adopted for the 1947-1948 season and has not been changed for 1948-1949. The southern New England agronomists would prefer a 3-4-4 ratio (presumably with a minimum grade of 6-8-8) to the 5-8-7 for potatoes, but this change has not been formally recommended because of the shortage of nitrogen. The list is as follows:

<i>Ratio</i>	<i>Minimum Grade</i>
0-1-1	0-14-14
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
1-3-2	4-12- 8
1-3-3	4-12-12 (New Hampshire potato)
1-3-4	4-12-16
2-1-2	6- 3- 6 (Tobacco)
2-3-3	6- 9- 9 (Maine potato)
2-3-4	5- 7-10 (Maine potato)
2-3-5	6- 9-15 (Maine potato)
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 direct from sources outside the State. Most 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, 1947 and June 30, 1948. 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, 1947 to June 30, 1948)

	<i>Page</i>	<i>No. of samples</i>	<i>Tonnage</i>
I. Containing chiefly nitrogen:			
Nitrate of ammonia	25	2	43
Nitrate of soda	25	6	1,861
Sulphate of ammonia	25	1	38
Cyanamid and urea	25	8	192
Castor pomace	26	13	3,029
Cottonseed meal	26	160	7,457
Horn and hoof meal	27	2	62
Linseed meal	27	10	1,045
Peanut meal	27	4	.....
Soybean meal	27	6	170
			13,897
II. Containing chiefly phosphoric acid:			
Superphosphate 18%	28	1	885
20%	28	13	5,980
47%		2	13
Precipitated bone	28	5	325
			7,203
III. Containing chiefly potash:			
Muriate of potash	29	4	451
Sulphate of potash	29	4	339
Sulphate of potash-magnesia	29	3	85
Cottonhull ashes	29	23	1,828
			2,703
IV. Containing nitrogen and phosphoric acid:			
Phosphate of ammonia		2	.....
Dry ground fish	30	21	1,280
Ground bone	30	20	1,068
Other materials	31	2	5
			2,353
V. Containing nitrogen and potash:			
Nitrate of potash	29	2	90
			90
VI. Mixed fertilizers:			
Commercial mixtures	32	143	54,834 ¹
Special and home mixtures		124	73
			54,907
VII. Miscellaneous:			
Sheep manure, etc.	40	19	402
Limestone and similar materials	42	6	.....
Fertilizers sold in small packages	43	22	.....
Other miscellaneous materials	45	12	.....
Check meals and fertilizers		42	.....
			402
Totals		682	81,555

¹ For distribution of this tonnage see next page.

Mixed Fertilizer Tonnage

Grades Approved for Connecticut

<i>Grade</i>	<i>Tons</i>	<i>Grade</i>	<i>Tons</i>
0-14-14	959	5-10-10	10,152
0-19-19	159	5-15-10	948
0-20-20	336	6- 3- 6	15,371
4-12- 8	54	7- 7- 7	3,803
5- 5-15	660	8- 4- 8	981
5- 8- 7	10,504	8-16-16	1,255
5-10- 5	1,222	10-10-10	546
		Total	46,950

Other Grades

(Over 50 tons)

2- 1- 1	567	6- 2- 0	490
3-12- 6	396	6- 7- 4	152
3-12-12	193	6- 8- 6	130
4-10- 0	548	6-10- 4	324
4-12- 4	2,484	8- 6- 2	353
5- 3- 5	625	8- 6- 4	213
5- 8- 5	198	8- 7- 3	148
5- 8-10	397	8-12-16	145
5-15-15	233	10- 6- 4	64
		Total	7,660

(Less than 50 tons)

0-14- 7	10	7-11- 5	28
3.5-3.5-1.5	16	8-10- 4	1
4- 4- 2	19	8-24- 8	7
4- 8- 4	37	10- 5- 5	24
4-12-16	28	10-20- 0	8
5- 8- 6	20	12- 4- 4	11
6- 6- 4	8	13-30- 0	7
		Total	224
		Grand Total	54,834

I. Raw Materials Chiefly Valuable for Nitrogen

Sulphate of ammonia may still be the cheapest source of nitrogen and supply a large proportion of the nitrogen in commercial mixed fertilizers, but very little of it is sold in this State for use as such. A fair amount of nitrate of soda is sold, but 84 per cent of the primarily nitrogenous fertilizer materials consumed by Connecticut farmers are vegetable meals; 64 per cent of this vegetable meal tonnage is cottonseed meal. This large consumption of expensive organic fertilizers (the present wholesale value of cottonseed meal is about \$61.00 per ton) is strong evidence of the predominance of tobacco growing in Connecticut agriculture.

Analyses of official samples of nitrogenous fertilizers are given in Table 1. The total number of cottonseed meal samples actually exceeded the official samples of mixed fertilizers, but 89 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, one of the 18 per cent grade and two triple superphosphates are given in Table 2. All samples except the two "triple" superphosphates and two of the 20 per cent grade exceeded their guaranties.

Of three samples of precipitated bone, two exceeded their guaranties of 38 per cent.

III. Raw Materials Chiefly Valuable for Potash

Four official samples of muriate of potash, two of sulphate of potash and two of sulphate of potash-magnesia all met their guaranties. Of nine samples of cottonhull ashes, three were sold on a unit basis; four of the six sold with definite potash guaranties met these guaranties and two were deficient.

Analyses of official samples are given in Table 3.

IV. Raw Materials Supplying Nitrogen and Phosphoric Acid

This group comprises chiefly dry ground fish and ground bone; two samples of phosphate of ammonia were analyzed for a tobacco grower, but no reports were received of any tonnage of this material being used for fertilizer.

Five official samples of dry ground fish all exceeded their guaranties; of thirteen samples of ground bone, all were passed except one which failed to meet its guaranty of 2 per cent nitrogen. One sample of "Milorganite", a treated sewage sludge, met its guaranties and one sample of ground tankage was deficient in phosphoric acid.

Analyses of official samples 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 exceeded their guaranties for nitrogen and potash, are given in Table 3.

VI. Mixed Fertilizers

Commercial Mixtures

Analyses of 142 official samples of mixed fertilizers are given in Table 5. Results are summarized as follows:

Total number of samples	143
Samples deficient in:	
one item	35
two items	6
Percentage of samples meeting guaranties	71
Total guaranties made	414 ¹
Guaranties not met:	
nitrogen	21
phosphoric acid	11
potash	15
Percentage met	89

¹ Fifteen samples with only two guaranties.

Eighty-nine per cent of all guaranties were substantially met or exceeded; this is practically the same percentage found in 1947.

Special and Home Mixtures

One hundred and twenty-four 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	4	Table 1
Supplying phosphoric acid	3	Table 2
Supplying nitrogen and phosphoric acid	2	Table 4
Mixed fertilizers	24	Table 5
Total	33	

VII. Miscellaneous

Sheep and other cattle manures. Nineteen official samples of sheep manure and other dried manures were analyzed; 17 equalled or exceeded their guaranties. Analyses are given in Table 6.

Limestone and similar materials. The Connecticut fertilizer law specifically exempts "marl and lime". No regular inspection of liming materials is made, therefore, but occasional samples are analyzed for purchasers. Analyses of six 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 and, consequently, no attempt is made to survey such materials systematically. Our agent does, however, sample those small package fertilizers that come to his attention. In the 1947-1948 season 22 samples were analyzed; 17, or 77 per cent, equalled or exceeded all guaranties; this percentage slightly exceeds that found for bulk mixed fertilizers. Analyses are given in Table 8.

Other miscellaneous materials. Twelve 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.

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 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	3	3	0
Sulphate of ammonia	1	1	0
Cyanamid	4	4	0
Urea	4	4	1
Castor pomace	10	10	1
Cottonseed meal	17	17	3
Horn and hoof meal	1	1	1
Linseed oil meal	2	2	1
Soybean oil meal	1	1	0
Superphosphate	14	14	4
Precipitated bone	3	3	1
Muriate of potash	4	4	0
Nitrate of potash	2	4	0
Sulphate of potash	2	2	0
Sulphate of potash-magnesia	2	2	0
Cottonhull ashes	9	9	2
Dry ground fish	6	12	0
Ground bone	13	26	1
Milorganite	1	2	0
Ground tankage	1	2	1
Mixed fertilizer	143	414	47
Sheep and other cattle manures	19	58	3
Totals	264	597	66
Per cent guaranties met			89

TABLE I. ANALYSES OF MATERIALS SUPPLYING CHIEFLY NITROGEN¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
Nitrate of Ammonia				
3487 ²	"Aeroprills". American Cyanamid Co., New York 20, N. Y.	Mansfield Depot: Mansfield Training School	33.82	33.50
3590	"Aeroprills". American Cyanamid Co., New York 20, N. Y.	East Hartford: Eastern States Farmers' Exchange	33.56	33.50
Nitrate of Soda				
3420	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Torrington: Eastern States Farmers' Exchange	16.12	16.00
3483	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	Middletown: P. Levson & Son	16.00	16.00
3513	Chilean, Champion Brand. Chilean Nitrate Sales Corp., New York 5, N. Y.	North Haven: Joseph Beach	16.12	16.00
Sulphate of Ammonia				
3614	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: A. N. Shepard & Son	20.50	20.50
Cyanamid				
3589	20.6% "Aero". American Cyanamid Co., New York 20, N. Y.	East Hartford: Eastern States Farmers' Exchange	20.94	20.60
3409 ²	20.6% "Aero". American Cyanamid Co., New York 20, N. Y.	Cheshire: Conn. Reformatory	20.62	20.60
3442 ²	20.6% "Aero". American Cyanamid Co., New York 20, N. Y.	Middletown: Conn. State Hospital	20.74	20.60
3485 ²	20.6% "Aero". American Cyanamid Co., New York 20, N. Y.	Middletown: Long Lane School	20.90	20.60
Urea				
3515	Uramon Fertilizer Compound. E. I. duPont de Nemours & Co., Inc., Wilmington 98, Del.	North Haven: Woodruff Fertilizer Works, Inc.	42.56	42.00
3576	Uramon Fertilizer Compound. E. I. duPont de Nemours & Co., Inc., Wilmington 98, Del.	West Suffield: H. L. Oppenheimer & Son	42.08	42.00
3610	Uramon Fertilizer Compound. E. I. duPont de Nemours & Co., Inc., Wilmington 98, Del.	West Suffield: John H. Orr	42.76	42.00
3793	O & W Uramon Fertilizer. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	40.99	42.00

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
Castor Pomace				
3548	Apothecaries Hall Co., Waterbury, Conn.	Yalesville: Barnes Brothers Nursery	5.54	4.50
3597	Baker Castor Oil Co., Jersey City, N. J.	East Hartford: Eastern States Farmers' Exchange	5.75	5.50
3730	Baker Castor Oil Co., Jersey City, N. J.	New Haven: New Haven Rendering Co.	5.51	5.50
3600	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	East Hartford: American Agricultural Chemical Co.	5.45	5.55
2724	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	East Windsor: Apothecaries Hall Co.	5.91	5.55
3575	Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	5.87	5.00
3612	Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: John H. Orr	5.46	5.00
3606	Olds & Whipple, Inc., Hartford, Conn.	West Suffield: Burton K. Holcomb	5.67	4.50
3634	The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	6.00	4.50
3516	Woodruff Fertilizer Works, Inc., North Haven, Conn.	North Haven: Woodruff Fertilizer Works, Inc.	5.31	5.50
Cottonseed Meal				
2725	Cow-Eta Brand 36%. Ashcraft-Wilkinson Co., Atlanta, Ga.	East Windsor: Apothecaries Hall Co.	5.78	5.76
2736	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Simsbury: Cullman Bros., Inc.	6.56	6.56
2743	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Portland: Consolidated Cigar Corp.	6.66	6.56
2853	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	New Haven: New Haven Rendering Co.	6.57	6.56
2851	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Scitico: Consolidated Cigar Corp.	6.82	6.56
2850	Cow-Eta Brand 41%. Ashcraft-Wilkinson Co., Atlanta, Ga.	Scitico: Consolidated Cigar Corp.	6.52	6.56
2727	Dixie Brand 41%. Humphreys-Godwin Co., Memphis, Tenn.	Hazardville: L. B. Haas & Co.	6.66	6.58
2748	Dixie Brand 41%. Humphreys-Godwin Co., Memphis, Tenn.	East Hartford: Olds & Whipple, Inc.	6.55	6.58
2726	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	East Windsor: Apothecaries Hall Co.	6.28	6.56
2729	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	Hazardville: L. B. Haas & Co.	6.88	6.56

¹ Deficiencies are in bold face type.

TABLE 1. ANALYSES OF MATERIALS SUPPLYING CHIEFLY NITROGEN¹

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
2747	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis Tenn.	East Hartford: Olds & Whipple, Inc.	6.56	6.56
2749	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	East Hartford: Kohn Bros. Tobacco Co., Inc.	6.70	6.56
2750	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	East Hartford: Kohn Bros. Tobacco Co., Inc.	6.72	6.56
3583	"Lovit Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	West Suffield: Hathaway-Steane Corp.	6.45	6.56
3748	Expello Brand 41%. Riverside Oil Mill, Marks, Miss.	East Windsor: Apothecaries Hall Co.	5.94	6.56
2734	Swift's 41%. Swift & Co., Augusta, Ga.	Simsbury: Cullman Bros., Inc.	6.46	6.56
3732	Swift's 41%. Swift & Co., Memphis, Tenn.	New Haven: New Haven Rendering Co.	6.48	6.56
Horn & Hoof Meal				
3506	Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	13.84	14.25
Linseed Oil Meal				
3581	Archer Quality 34%. Archer-Daniels-Midland Co., Minneapolis, Minn.	West Suffield: Hathaway-Steane Corp.	5.52	6.00
2733	Spencer Kellogg 34%. Spencer Kellogg & Sons, Inc., Buffalo, N. Y.	Simsbury: Cullman Bros., Inc.	5.83	5.44
Soy Bean Oil Meal				
2742	Gilt Edge Brand. Central Oil & Milling Co., Clayton, N. C.	Portland: Consolidated Cigar Corp.	7.42	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					
3651	18% Normal. The American Agricultural Chemical Co., No. Weymouth, Mass.	Hamden: The American Agricultural Chemical Co.	0.60	19.35	18.75	18.00
3616	20%. Apothecaries Hall Co., Waterbury, Conn.	Suffield: Spencer Bros.	0.58	21.80	21.22	20.00
3525	Corenco, Consolidated Rendering Co., Boston 10, Mass.	Milford: F. H. Woodruff & Sons	0.45	22.10	21.65	20.00
3619	Dayco Granulated 20%. The Davison Chemical Corp., Baltimore 3, Md.	North Haven: Woodruff Fertilizer Works, Inc.	1.03	21.45	20.42	20.00
3603	Eastern States 20%. Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	South Windsor: M. F. Bidwell	0.98	21.90	20.92	20.00
3573	Granulated 20%. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	1.18	22.00	20.82	20.00
3609	Triple. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: John H. Orr	0.28	44.40	44.12	47.00
3791	O & W Triple. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	0.58	28.95	28.37	47.00
3792	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	1.30	23.10	21.80	20.00
3441 ²	Hubbard 20%. The Rogers & Hubbard Co., Portland, Conn.	Middletown: Connecticut State Hospital	0.63	19.65	19.02	20.00
3454 ²	Hubbard 20%. The Rogers & Hubbard Co., Portland, Conn.	Newtown: Fairfield State Hospital	0.70	19.60	18.90	20.00
3472 ²	Hubbard 20%. The Rogers & Hubbard Co., Portland, Conn.	Rocky Hill: Veterans' Home & Hospital	0.50	20.80	20.30	20.00
3754	Sawco 20%. Stumpp & Walter Co., New York 8, N. Y.	Stamford: Stumpp & Walter Co.	0.79	21.40	20.61	20.00
3511	20%. I. P. Thomas & Son Co., Camden, N. J.	North Haven: Joseph Beach	0.73	21.10	20.37	20.00
	Precipitated Bone Phosphate					
3584	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: Hathaway-Steane Corp.	2.10	41.50	39.40	38.00
3615	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: A. N. Shepard & Son	0.73	40.80	40.07	38.00
3507	Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	0.75	38.47	37.72	38.00

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

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				
3542	Consolidated Rendering Co., Boston 10, Mass.	Cos Cob: Belmont Feed Co.	61.52	60.00
3519	Eastern States. Eastern States Farmers' Exchange, Inc., West Springfield, Mass.	North Haven: Eastern States Farmers' Exchange, Inc. ...	60.68	60.00
3569	Old Deerfield. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	60.60	60.00
3424	Hubbard 60%. The Rogers & Hubbard Co., Portland, Conn.	Torrington: Litchfield County Co-operative Assoc.	60.08	60.00
Nitrate of Potash				
3579	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: Hathaway-Steane Corp.	46.80 ²	44.00
2745	F. W. Berk & Co., Inc., New York 17, N. Y.	Portland: Consolidated Cigar Corp.	46.64 ³	44.00
Sulphate of Potash				
2746	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	49.32	48.00
3785	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	48.20	48.00
Sulphate of Potash-Magnesia				
3611	Double Sulphate of Potash Magnesia. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: John H. Orr	22.32	22.00
3508	Sulphate of Potash and Magnesia. Olds and Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	21.68	21.50
Cottonhull Ashes				
3749	Apothecaries Hall Co., Waterbury, Conn.	East Windsor: Apothecaries Hall Co.	23.70	unit basis
2752	Old Deerfield 35%. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	East Windsor: General Cigar Co., Inc.	35.01	35.00
2848	Old Deerfield 35%. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	Scitico: Consolidated Cigar Corp.	35.86	35.00
3572	Old Deerfield 35%. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	33.56	35.00
3613	Old Deerfield 35%. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: John H. Orr	30.32	35.00
2730	O & W. Olds & Whipple, Inc., Hartford, Conn.	Hazardville: L. B. Haas & Co.	32.42	30.00
2753	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Windsor: General Cigar Co., Inc.	36.70	30.00
2735	Cotton Bur Ashes. Ray & King, Lubbock, Tex.	Simsbury: Cullman Bros., Inc.	24.14	unit basis
2852	Cotton Bur Ashes. Ray & King, Lubbock, Tex.	New Haven: New Haven Rendering Co.	29.22	unit basis

¹ Deficiencies are in bold face type.² Nitrogen guaranteed 13.0%, found 13.82%.³ Nitrogen guaranteed 13.0%, found 13.78%.

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							
2755 ²	Apothecaries Hall Co., Waterbury, Conn.	Scitico: Consolidated Cigar Corp.	10.06	9.00	7.68	5.00	.....	.....
3580 ³	Apothecaries Hall Co., Waterbury, Conn.	West Suffield: Hathaway-Steane Corp.	10.41	9.00	7.00	5.00	.....	.....
3568 ⁴	Old Deerfield. Old Deerfield Fertilizer Co., Inc., South Deerfield, Mass.	West Suffield: H. L. Oppenheimer & Son	9.83	9.00	7.65	5.00	.....	.....
2751 ⁵	O & W Menhaden. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Kohn Bros. Tobacco Co., Inc.	10.40	9.00	6.98	5.00	.....	.....
2744 ⁶	Hubbard. The Rogers & Hubbard Co., Portland, Conn.	Portland: Consolidated Cigar Corp.	10.28	9.45	7.48	5.00	.....	.....
3632 ⁷	Hubbard. The Rogers & Hubbard Co., Portland, Conn.	Portland: The Rogers & Hubbard Co.	10.42	9.45	6.45	5.00	.....	.....
	Ground Bone							
3649	American Agricultural Chemical Co., North Weymouth, Mass.	Hamden: American Agricultural Chemical Co.	3.00 ⁸	2.00	25.95	23.00	52.0	48.0
3637	Apothecaries Hall Co., Waterbury, Conn.	New London: New London Grain Co.	3.39	2.25	26.45	22.00	42.0	58.0
3737	Armour. Armour Fertilizer Works, Carteret, N. J.	East Windsor: The Farmers' Hardware Co.	2.93 ⁹	2.47	26.20	23.00	46.0	54.0
3538	Baugh's Raw. Baugh & Sons Co., Philadelphia 6, Pa.	Greenwich: McArdle's Seed Store	4.00 ¹⁰	3.70	25.15	20.50	37.5	62.5
2849	Corenco. Consolidated Rendering Co., Boston 10, Mass.	Scitico: Consolidated Cigar Corp.	1.19 ¹¹	2.00	32.83	23.00	58.5	41.5
3555	Corenco. Consolidated Rendering Co., Boston 10, Mass.	Waterbury: H. S. Coe & Co.	2.11 ¹²	2.00	26.65	23.00	56.5	43.5
2754	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Windsor: General Cigar Co., Inc.	3.18 ¹³	2.47	25.90	22.00	42.0	58.0

3788	O & W. Olds & Whipple, Inc., Hartford, Conn.	East Hartford: Olds & Whipple, Inc.	2.87 ¹⁴	2.47	26.50	22.00	43.0	57.0
3432	Gro-Fast. The Rogers & Hubbard Co., Portland, Conn.	New Haven: Roland T. Warner Co.	3.49 ¹⁵	2.00	25.75	23.00	58.5	41.5
3453 ¹⁶	Gro-Fast. The Rogers & Hubbard Co., Portland, Conn.	Newtown: Fairfield State Hospital	3.00 ¹⁷	2.00	26.80	23.00	50.5	49.5
3623 ¹⁶	Gro-Fast. The Rogers & Hubbard Co., Portland, Conn.	Middletown: Long Lane School	3.09 ¹⁸	2.00	25.55	23.00	47.0	53.0
3759	Sawco Bone. Stumpp & Walter Co., New York 8, N. Y.	Stamford: Stumpp & Walter Co.	2.44	2.47	23.70	22.00	51.0	49.0
3523	Vico Steamed. The Van Iderstine Co., Long Island City, N. Y.	Milford: F. H. Woodruff & Sons, Inc.	2.78 ¹⁹	2.47	28.75	23.00	53.5	46.5
	Milorganite							
3750	Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.	Darien: Ring's End Fuel Co.	5.93 ²⁰	6.00	3.29 ²¹	2.75	-----	-----
	Ground Tankage							
3675	Consolidated Rendering Co., Boston, Mass.	New Haven: New Haven Rendering Co.	8.34 ²²	7.40	8.40	9.15	49.0	51.0

¹ Deficiencies are in bold face type.² Chlorine 0.21%.³ Chlorine 0.29%.⁴ Chlorine 0.19%.⁵ Chlorine 0.22%.⁶ Chlorine 0.55%.⁷ Chlorine 0.31%.⁸ Nitrogen in ammonia 0.01%.⁹ Nitrogen in ammonia 0.04%.¹⁰ Nitrogen in ammonia 0.10%.¹¹ Nitrogen in ammonia 0.03%.¹² Nitrogen in ammonia 0.15%.¹³ Nitrogen in ammonia 0.03%.¹⁴ Nitrogen in ammonia 0.07%.¹⁵ Nitrogen in ammonia 0.04%.¹⁶ State purchase¹⁷ Nitrogen in ammonia 0.06%.¹⁸ Nitrogen in ammonia 0.05%.¹⁹ Nitrogen in ammonia 0.02%.²⁰ Found: Nitrogen in nitrates, 0.00%; nitrogen in ammonia, 0.00%; nitrogen organic water-soluble, 0.62%; nitrogen organic insoluble, 5.31%.²¹ Guaranteed "available" phosphoric acid, 2.00%; found, 2.31%.²² Nitrogen in ammonia 0.42%.

TABLE 5. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and brand	Place of sampling
	Agricultural Supply Co., West Haven, Conn.	
3414	Yale Special Mixture 8-6-2	New Haven
	American Agricultural Chemical Co., North Weymouth 91, Mass.	
3473	Agrico for Broadleaf Evergreens 6-10-4	Rocky Hill
3601	Agrico for Corn 3-12-6	East Hartford
3599	Agrico Country Club Fertilizer 6-10-4	East Hartford
3598	Agrico Country Club Fertilizer 8-6-2	East Hartford
3447	Agrico for Gardens 5-10-5	Hartford
3445	Agrico for Lawns, Trees and Shrubs 6-10-4	Hartford
3566	Agrico for New England 5-8-7	Windsor Locks
3642	Agrico for Potatoes 5-10-10	Groton
3650	Agrico for Seeding Down 3-12-12	Hamden
3774	Agrico for Tobacco 6-3-6	East Hartford
3775	Agrico for Top Dressing 7-7-7	East Hartford
3489	Agrico Phosphate and Potash 0-14-14	Stafford Springs
	Apothecaries Hall Co., Waterbury, Conn.	
3741	Liberty Fertilizer 0-14-14	East Windsor
3466	Liberty Fertilizer 4-12-4	Danbury
3534	Liberty Fertilizer 5-10-5	Greenwich
3617	Liberty Fertilizer 5-10-10	Suffield
3547	Liberty Fertilizer Special for Fruit and Grass 7-7-7 ..	Yalesville
3655 ²	Liberty Fertilizer Special for Fruit and Grass 7-7-7 ..	Southbury
3533	Liberty Green Gro Fertilizer 6-7-4	Greenwich
3467	Liberty High Grade Market Gardeners (with sulphate potash) 5-8-7	Danbury
3743	Liberty High Grade Market Gardeners (with sulphate potash) 5-8-7	East Windsor
3618	Liberty Tobacco Mixture 6-3-6	Suffield
3745	Liberty Tobacco Mixture (castor pomace base) 6-3-6	East Windsor
3656	Liberty Tobacco Mixture (with cottonhull ashes) 6-3-6	New Milford
3744	Liberty Tobacco Starter 4-10-0	East Windsor
3746	Liberty Tobacco Starter 5-5-15	East Windsor
	Armour Fertilizer Works, New York 5, N. Y.	
3739	Armour's Big Crop Fertilizer 0-14-14	East Windsor Hill
3738	Armour's Big Crop Fertilizer 4-12-4	East Windsor Hill
3736	Armour's Big Crop Fertilizer 5-8-7	East Windsor Hill
3491	Armour's Big Crop Fertilizer 5-10-10	Somers
3740	Armour's Big Crop Fertilizer 7-7-7	East Windsor Hill
3607	Armour's Big Crop Tobacco Special 6-3-6	West Suffield
3529	Armour's Velvetgreen Plant Food 5-10-5	Milford
	Associated Seed Growers, Inc., Milford, Conn.	
3530	Asgrow Lawn Food 10-6-4	Milford
3528	Clark's Tip Top 5-8-7 Fertilizer	Milford
3527	Japedizer 8-6-4	Milford
	The F. A. Bartlett Tree Expert Co., Stamford, Conn.	
3546	Bartlett Green Tree Food 6-8-6	Stamford

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	
0.00	5.56	2.08	0.46	8.10	0.35	6.85	6.50	1.06	2.32	3414
0.00	5.56	0.12	0.52	6.20	0.38	11.18	10.80	4.32	4.32	3473
0.49	2.16	0.24	0.13	3.02	0.88	12.98	12.10	5.50	6.24	3601
0.63	4.94	0.00	0.45	6.02	0.78	10.95	10.17	3.59	4.14	3599
0.00	5.36	0.56	1.90	7.82	0.43	6.90	6.47	2.34	2.34	3598
0.39	4.16	0.30	0.15	5.00	0.83	10.80	9.97	4.11	5.16	3447
0.26	5.16	0.12	0.51	6.05	0.68	13.93	10.25	4.02	4.02	3445
0.10	4.72	0.12	0.17	5.01	0.48	9.00	8.52	5.30	6.62	3566
0.37	4.48	0.19	0.13	5.17	0.75	10.77	10.02	6.78	10.18	3642
0.60	2.20	0.18	0.12	3.10	0.95	13.03	12.08	9.25	11.78	3650
0.40	0.68	2.19	2.53	5.80	0.48	4.25	3.77	0.56	6.18	3774
0.32	6.22	0.36	0.10	7.00	0.55	8.55	8.00	5.59	6.82	3775
-----	-----	-----	-----	-----	0.73	14.03	13.30	5.50	14.96	3489
-----	-----	-----	-----	-----	0.75	14.75	14.00	8.77	12.12	3741
0.71	2.92	0.08	0.65	4.36	0.75	13.20	12.45	3.95	4.68	3466
0.93	4.00	0.28	0.68	5.89	0.48	11.05	10.57	4.78	5.48	3534
0.95	3.64	0.08	0.70	5.37	0.55	10.83	10.28	9.41	10.28	3617
0.42	6.24	0.06	0.48	7.20	0.40	7.55	7.15	6.11	7.30	3547
0.25	5.68	0.32	0.78	7.03	0.58	8.38	7.80	6.90	8.22	3655
0.11	5.08	0.24	1.07	6.50	0.60	7.73	7.13	3.99	4.62	3533
0.00	4.00	0.55	0.76	5.31	0.23	9.78	9.55	7.18	7.18	3467
0.12	4.06	0.74	0.49	5.41	0.28	10.00	9.72	0.48	7.00	3743
1.89	0.14	1.14	3.20	6.37	0.43	4.20	3.77	7.14	7.14	3618
1.49	0.56	1.86	2.56	6.47	0.30	5.10	4.80	0.69	7.22	3745
1.37	0.20	2.68	2.07	6.32	0.55	4.75	4.20	0.47	6.96	3656
0.42	2.32	0.72	0.68	4.14	0.65	11.45	10.80	-----	-----	3744
1.08	0.14	1.86	2.28	5.36	0.65	6.43	5.78	0.84	15.12	3746
-----	-----	-----	-----	-----	0.75	14.90	14.15	10.85	14.52	3739
0.41	3.00	0.26	0.39	4.06	0.95	14.18	13.23	3.39	4.40	3738
0.35	4.04	0.14	0.23	4.76	0.80	9.70	8.90	6.10	7.00	3736
0.43	4.40	0.00	0.21	5.00	0.58	10.65	10.07	10.00	10.00	3491
0.39	5.60	0.46	0.19	6.64	0.58	8.45	7.87	6.08	7.24	3740
0.21	1.76	1.92	1.96	5.85	0.70	4.43	3.73	0.72	5.32	3607
0.22	4.52	0.00	0.27	5.01	0.40	10.40	10.00	2.19	5.38	3529
0.00	2.32	5.29	1.89	9.50	0.60	6.98	6.38	4.03	5.26	3530
0.74	3.46	0.58	0.38	5.16	0.45	8.25	7.80	6.80	6.80	3528
0.05	2.26	3.30	2.11	7.72	0.30	6.93	6.63	3.11	4.62	3527
0.82	4.20	0.42	0.48	5.92	0.65	12.60	11.95	5.38	6.48	3546

TABLE 5. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and brand	Place of sampling
	Consolidated Rendering Co., Boston 10, Mass.	
3668	Corenco 0-14-14 Top Dresser	New Haven
3669	Corenco 4-12-4 Complete Manure	New Haven
3673	Corenco 4-12-16 Ladino Special	New Haven
3427	Corenco 5-8-7 Potato and General Crop	New Haven
3418	Corenco 5-10-5 Home Garden	Torrington
3670	Corenco 5-10-5 Onion Special—Super Truck	New Haven
3457	Corenco 5-10-10 Peerless Potato	Bethel
3570	Corenco 6-3-6 Special Tobacco Grower	West Suffield
3543	Corenco 7-7-7 Complete Fruit and Top Dressing	Cos Cob
3526	Corenco 8-6-4 Landscape	Milford
3492	Spurz-on 3.5-3.5-1.5	Hazardville
	Davey Tree Expert Co., Kent, Ohio	
3544	Davey Tree Food 12-4-4	Old Greenwich
	The Davison Chemical Corp., Baltimore 3, Md.	
3768	Davco Granulated Fertilizer 0-14-14	Willimantic
3767	Davco Granulated Fertilizer 5-8-7	Willimantic
3645	Davco Granulated Fertilizer 5-10-5	Norwich
3641	Davco Granulated Fertilizer 5-10-10	Norwich
3644	Davco Granulated Fertilizer 7-7-7	Norwich
	Eastern States Farmers' Exchange, West Springfield, Mass.	
3586	Eastern States 0-19-19 with Borax	East Hartford
3588	Eastern States 0-20-20	East Hartford
3422	Eastern States 5-10-5 Garden	Torrington
3421	Eastern States 5-10-10	Torrington
3520	Eastern States 5-15-10	North Haven
3602	Eastern States 8-4-8 Tobacco	South Windsor
3456	Eastern States 8-16-16	Bethel
3587	Eastern States 8-16-16	East Hartford
3455	Eastern States 10-10-10	Bethel
	Goulard & Olena, Inc., Skillman, N. J.	
3761	G & O Rose Food 7-8-5	Norwalk
	International Minerals & Chemical Corp., Woburn, Mass.	
3772 ²	International Caribee 5-10-10-2	Wilson
	A. L. Koster, West Hartford, Conn.	
3448	Dry Mix Plant Food 5-8-7	Hartford
3482	Dry Mix Plant Food 7-7-7	Middletown
	"Na-Churs" Plant Food Co., Marion, Ohio	
3604	"Na-Churs" Plant Food 5-5-10	Warehouse Point
	Old Deerfield Fertilizer Co., South Deerfield, Mass.	
3735	Old Deerfield 5-5-15 Tobacco Starter	Glastonbury
3734	Old Deerfield 5-8-7	Glastonbury

¹ Deficiencies are in bold face type.² Guaranteed MgO—2.00.

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	
0.46	3.28	0.20	0.32	4.26	0.39	14.49	14.10	12.37	14.04	3668
0.17	3.40	0.60	0.13	4.30	1.30	13.30	12.00	3.76	4.68	3669
0.50	4.16	0.18	0.22	5.06	0.88	13.08	12.20	12.74	15.60	3673
0.00	3.68	1.16	0.23	5.07	0.33	8.45	8.12	2.35	7.54	3427
0.30	4.36	0.48	0.26	5.40	0.28	10.05	9.77	0.00	5.52	3418
0.36	4.50	0.36	0.18	5.40	0.43	10.63	10.20	4.62	5.68	3670
0.18	0.18	2.38	3.32	6.06	0.45	10.45	10.00	9.45	10.32	3457
0.00	7.00	0.00	0.14	7.14	0.35	4.70	4.35	0.54	6.50	3570
0.00	6.20	1.40	0.56	8.16	0.53	7.40	6.87	7.20	7.20	3543
0.00	0.12	1.61	3.03	4.76	0.45	6.35	5.90	4.28	4.28	3526
					0.80	4.48	3.68	0.44	1.90	3492
0.13	9.00	1.12	1.01	11.26	0.68	5.58	4.90	4.57	5.72	3544
0.23	4.06	0.24	0.06	4.59	0.85	14.95	14.10	8.93	13.80	3768
0.27	4.58	0.18	0.07	5.10	0.43	8.25	7.82	4.18	7.70	3767
0.00	3.66	0.37	0.09	4.12	0.60	10.78	10.18	4.10	5.38	3645
2.72	4.26	0.20	0.05	7.23	0.48	9.35	8.87	11.84	14.88	3641
					0.35	7.68	7.33	4.66	6.54	3644
0.80	3.72	0.42	0.26	5.20	0.55	19.60	19.05	16.35	19.60	3586
0.67	4.00	0.44	0.18	5.29	0.53	19.55	19.02	12.15	22.85	3588
0.60	3.48	0.96	0.21	5.25	0.48	10.53	10.05	5.54	5.56	3422
0.54	0.76	3.52	3.14	7.96	0.40	10.60	10.20	2.90	11.16	3421
1.52	6.40	0.04	0.16	8.12	0.75	17.10	16.35	10.38	10.38	3520
1.41	5.84	0.55	0.22	8.05	0.35	4.50	4.15	0.69	8.12	3602
1.82	7.88	0.12	0.18	10.00	0.43	16.43	16.00	16.00	16.00	3456
					0.43	16.90	16.47	7.16	17.18	3587
					0.45	10.83	10.38	6.59	10.94	3455
0.67	2.80	2.20	1.54	7.21	0.70	9.13	8.43	4.85	5.56	3761
0.63	2.62	1.02	0.55	4.82	0.58	11.00	10.42	7.33	10.58	3772
0.90	3.64	0.46	0.38	5.38	0.48	8.30	7.82	6.10	7.14	3448
0.00	4.14	2.43	0.67	7.24	0.63	7.15	6.52	3.15	7.60	3482
2.01	2.20	0.53	0.03	4.77	0.70	6.20	5.50	7.13	7.13	3604
1.23	0.28	2.24	1.46	5.21	0.38	5.98	5.60	0.80	16.08	3735
0.37	4.46	0.28	0.24	5.35	0.53	8.88	8.35	5.78	7.64	3734

TABLE 5. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and brand	Place of sampling
3733	Old Deerfield 5-10-10 Potato Fertilizer	Glastonbury
3571	Old Deerfield 6-3-6 Complete Tobacco Fertilizer	West Suffield
3574	Old Deerfield 7-7-7 Fertilizer	West Suffield
Olds & Whipple, Inc., Hartford, Conn.		
3773	O & W 0-14-14 Fertilizer	Wilson
3790	O & W 4-8-4 Complete Lawn Grass Fertilizer	East Hartford
3605	O & W 4-12-4 Market Garden Fertilizer	Bloomfield
3777	O & W 5-3-5 Complete Tobacco Fertilizer	East Hartford
3786	O & W 5-3-5 Complete Tobacco Fertilizer-Potash Derived from Cotton Hull Ash	East Hartford
3779	O & W 5-5-15 High Grade Tobacco Starter and Potash	East Hartford
3789	O & W Luxura 5-8-6	East Hartford
3451 ²	O & W 5-8-7 Potato and General Purpose Fertilizer	Newtown
3471 ²	O & W 5-8-7 Potato and General Purpose Fertilizer	Rocky Hill
3476 ²	O & W 5-8-7 Potato and General Purpose Fertilizer	Portland
3585 ²	O & W 5-8-7 Potato and General Purpose Fertilizer	Cheshire
3408 ²	O & W 5-10-5 Fertilizer	Cheshire
3484 ²	O & W 5-10-5 Fertilizer	Middletown
3510 ²	O & W 5-10-5 Fertilizer	Somers
3553 ²	O & W 5-10-5 Fertilizer	Meriden
3636 ²	O & W 5-10-5 Fertilizer	Niantic
3407 ²	O & W 5-10-10 Potato Fertilizer	Cheshire
3440 ²	O & W 5-10-10 Potato Fertilizer	Middletown
3450 ²	O & W 5-10-10 Potato Fertilizer	Newtown
3490	O & W 5-10-10 Potato Fertilizer	Somers
3552 ²	O & W 5-10-10 Potato Fertilizer	Meriden
3635 ²	O & W 5-10-10 Potato Fertilizer	Niantic
3787	O & W 6-3-6 Blue Label Tobacco Fertilizer	East Hartford
3778	O & W 6-3-6 Blue Label Tobacco Fertilizer-Potash Derived from Cotton Hull Ash	East Hartford
3776	O & W 6-3-6 Pomace Base Fertilizer-Potash Derived from Cotton Hull Ash	East Hartford
3452 ²	O & W 7-7-7 Top Dressing and Grass Fertilizer	Newtown
3477 ²	O & W 7-7-7 Top Dressing and Grass Fertilizer	Portland
3654 ²	O & W 7-7-7 Top Dressing and Grass Fertilizer	Southbury
The Frank S. Platt Co., New Haven 10, Conn.		
3426	Platt's Special 10-5-5 Lawn Fertilizer	New Haven
Ralston Purina Co., St. Louis, Mo.		
3643	Purina Plant Food 5-10-5	Norwich
The Rogers & Hubbard Co., Portland, Conn.		
3443	Gro-Fast Plant Food 5-8-5	Hartford
3475	Hubbard Golf Course Fertilizer 8-6-2	Cromwell
3625	Hubbard High Potash Fertilizer 5-10-10	Portland
3766	Hubbard Potato Fertilizer 5-8-7	Portland
3631	Hubbard Tobacco Grower 6-3-6	Portland
3626	Red H 0-14-14	Portland
3630	Red H 4-12-4	Portland

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	4.76	0.54	0.17	5.47	0.60	12.10	11.50	9.26	10.74	3733
0.82	0.72	2.00	2.46	6.00	0.43	4.10	3.67	0.54	7.08	3571
0.00	6.92	0.25	0.23	7.40	0.95	8.18	7.23	5.31	7.46	3574
.....	.....	.....	.....	.....	0.70	14.83	14.13	13.54	14.28	3773
0.39	2.16	0.84	0.86	4.25	0.73	9.45	8.72	0.58	5.11	3790
0.60	2.80	0.10	0.91	4.41	0.68	13.98	13.30	0.54	4.28	3605
1.16	0.12	1.54	2.58	5.40	0.63	3.98	3.35	0.53	6.02	3777
1.12	0.08	1.23	2.58	5.01	0.43	4.10	3.67	0.32	4.18	3786
2.10	0.00	2.00	0.93	5.03	0.80	6.25	5.45	1.04	15.06	3779
0.71	2.08	0.66	1.78	5.23	1.15	11.18	10.03	3.39	6.48	3789
0.59	3.68	0.28	0.76	5.31	0.33	8.65	8.32	6.90	7.64	3451
0.50	4.24	0.14	0.51	5.39	0.53	8.95	8.42	5.33	7.60	3471
0.44	3.72	0.34	0.77	5.27	0.35	9.15	8.80	5.25	7.52	3476
0.46	3.66	0.46	0.70	5.28	0.95	9.83	8.88	5.91	7.36	3585
0.45	4.00	0.36	0.69	5.50	0.23	11.38	11.15	4.11	6.18	3408
0.42	4.12	0.26	0.70	5.50	0.35	11.40	11.05	5.88	5.88	3484
0.51	4.18	0.18	0.69	5.56	0.45	11.35	10.90	0.16	5.90	3510
0.28	4.38	0.42	0.68	5.76	0.58	11.15	10.57	4.20	5.70	3553
0.34	4.66	0.26	0.68	5.94	0.43	11.33	10.90	4.27	5.56	3636
0.40	4.18	0.18	0.57	5.33	0.20	11.22	11.02	7.26	10.42	3407
0.54	4.06	0.24	0.48	5.32	0.55	11.03	10.48	5.62	9.94	3440
0.60	4.00	0.14	0.63	5.37	0.40	10.98	10.58	7.30	10.70	3450
0.00	4.68	0.04	0.59	5.31	0.20	10.85	10.65	1.20	10.98	3490
0.42	4.00	0.34	0.62	5.38	0.38	11.22	10.84	7.42	10.48	3552
0.68	3.86	0.22	0.54	5.30	0.45	11.45	11.00	8.89	10.94	3635
0.31	0.08	2.20	3.38	5.97	0.43	4.08	3.65	0.33	5.36	3787
1.18	0.00	2.26	3.06	6.50	0.43	4.15	3.72	0.62	6.16	3778
1.35	0.18	1.82	2.88	6.23	0.43	3.55	3.12	0.29	6.18	3776
0.00	4.12	2.57	0.84	7.53	0.44	7.17	6.73	5.37	8.08	3452
0.00	3.60	2.65	0.96	7.21	0.28	7.85	7.57	6.42	7.20	3477
0.00	5.86	0.92	0.61	7.39	0.43	7.78	7.35	7.40	7.40	3654
2.15	6.08	0.40	1.23	9.86	0.35	6.55	6.20	2.75	5.66	3426
1.09	3.04	0.40	0.18	4.71	0.90	11.50	10.60	3.47	5.38	3643
0.13	3.44	0.00	1.71	5.28	0.48	8.50	8.02	3.87	5.32	3443
0.00	4.62	2.23	1.55	8.40	0.83	7.08	6.25	2.85	2.90	3475
0.58	2.60	0.72	1.25	5.15	0.71	10.78	10.07	8.81	10.20	3625
0.00	3.04	1.27	1.02	5.33	0.95	9.18	8.23	6.06	7.26	3766
1.28	0.20	2.20	2.65	6.33	0.38	4.10	3.72	0.93	7.08	3631
.....	.....	.....	.....	.....	0.43	15.38	14.95	11.56	12.62	3626
0.85	3.00	0.20	0.26	4.31	1.13	13.25	12.12	3.90	4.92	3630

TABLE 5. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and brand	Place of sampling
3628	Red H 4-12-8	Portland
3413	Red H 5-8-7	New Haven
3460	Red H 5-10-10	Danbury
3488	Red H 7-7-7	Mansfield Depot
3629	Red H 8-16-16	Portland
O. M. Scott & Sons Co., Marysville, Ohio		
3540	Scott's Lawn Food Plus Weed Control 7-11-5	Greenwich
3468	Turf Builder 8-7-3	Danbury
Sears, Roebuck & Co., Chicago 7, Ill.		
3667	Cross Country Plant Food 4-12-4	Danbury
M. L. Shoemaker, Div. Wilson & Co., Inc., Philadelphia 34, Pa.		
3493	M. L. Shoemaker's "Swift-Sure" 4-10-0 Tobacco Starter	Hazardville
3582	M. L. Shoemaker's "Swift-Sure" 4-10-0 Tobacco Starter	West Suffield
Stumpp & Walter Co., New York 8, N. Y.		
3760	Sawco Acidulous Fertilizer 5-10-5	Stamford
3758	Sawco Emerald Grass Fertilizer 5-10-5	Stamford
3757	Sawco General Garden Fertilizer 5-10-5	Stamford
Summers Fertilizer Co., Inc., Baltimore 2, Md.		
3417 ²	Summers Best on Earth 0-20-20	Cheshire
3486 ²	Summers Best on Earth 0-20-20	Mansfield Depot
3509 ²	Summers Best on Earth 0-20-20	Somers
3416 ²	Summers Best on Earth 8-16-16	Cheshire
3478 ²	Summers Best on Earth 8-16-16	Southbury
Swift & Co., Baltimore 9, Md.		
3665	Blenn 5-10-5	Danbury
3549	Brimm 5-10-10	Meriden
3459	Vigoro 4-12-4	Danbury
3624 ²	Vigoro 4-12-4	Middletown
I. P. Thomas & Son Co., Camden, N. J.		
3411	I. P. Thomas 5-8-7	Mount Carmel
3412	I. P. Thomas 5-10-10	Hamden
3647	I. P. Thomas 7-7-7	Norwich
F. H. Woodruff & Sons, Inc., Milford, Conn.		
3524	Gro Plant Food 5-10-5	Milford
3522	Gro Sod Lawn Food 10-6-4	Milford
Woodruff Fertilizer Works, Inc., North Haven, Conn.		
3622	Woodruff's 5-8-7 Fertilizer	North Haven
3621	Woodruff's 5-8-10 Fertilizer	North Haven
3620	Woodruff's Tobacco Fertilizer 6-3-6	North Haven
3410	Woodruff's 7-7-7 Fertilizer	Mount Carmel
3514	Woodruff's 10-6-4 Lawn and Tree Food	North Haven

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	
0.99	3.00	0.06	0.21	4.26	0.98	13.28	12.30	7.69	8.52	3628
0.44	4.36	0.38	0.32	5.50	0.30	8.95	8.65	5.98	7.44	3413
0.82	4.28	0.04	0.24	5.38	0.45	10.73	10.28	10.46	10.46	3460
0.32	6.06	0.24	0.38	7.00	0.40	7.88	7.48	7.38	7.38	3488
0.81	7.00	0.12	0.15	8.08	0.48	16.70	16.22	13.11	15.96	3629
0.00	3.86	0.80	4.84	9.50	0.73	9.75	9.02	4.94	7.08	3540
0.00	5.64	0.37	2.60	8.61	0.73	7.88	7.15	2.92	2.92	3468
0.16	2.82	0.84	0.15	3.97	0.58	12.63	12.05	4.12	4.58	3667
0.00	2.64	0.54	0.82	4.00	0.83	11.85	11.02	-----	-----	3493
0.00	2.60	0.46	0.90	3.96	1.45	11.85	10.40	-----	-----	3582
0.49	5.92	0.30	0.26	6.97	0.70	9.83	9.13	5.49	6.78	3760
0.71	3.56	0.08	0.84	5.19	0.48	10.58	10.10	3.97	4.72	3758
0.43	4.32	0.42	0.23	5.40	0.68	10.63	9.95	6.20	6.95	3757
-----	-----	-----	-----	-----	0.58	19.73	19.15	15.39	19.22	3417
-----	-----	-----	-----	-----	0.44	20.42	19.98	11.44	21.23	3486
-----	-----	-----	-----	-----	0.40	20.30	19.90	4.47	20.94	3509
0.26	2.16	0.76	0.16	3.34	0.33	18.15	17.82	11.84	17.22	3416
0.17	5.10	2.22	0.45	7.94	0.60	16.25	15.65	14.59	15.58	3478
0.31	4.10	0.22	0.21	4.84	1.39	10.74	9.35	4.37	5.14	3665
0.13	4.16	0.22	0.15	4.66	0.63	11.19	10.56	8.40	10.14	3549
0.52	3.60	0.00	0.07	4.19	0.28	12.45	12.17	4.08	4.08	3459
0.00	3.40	0.39	0.11	3.90	0.93	13.07	12.14	3.60	4.36	3624
0.77	3.72	0.04	0.19	4.72	0.53	10.25	9.72	5.30	7.12	3411
0.65	3.88	0.26	0.24	5.03	0.93	11.70	10.77	4.74	9.14	3412
0.52	5.92	0.18	0.14	6.76	0.45	7.98	7.53	5.86	7.04	3647
0.35	1.14	0.82	1.94	4.25	0.38	11.03	10.65	3.60	6.02	3524
0.38	5.42	2.62	1.62	10.04	0.43	6.75	6.32	4.46	4.46	3522
0.26	3.80	0.62	0.57	5.25	0.37	8.55	8.18	6.30	7.36	3622
0.00	3.04	1.72	0.35	5.11	0.46	8.55	8.09	8.75	9.86	3621
0.65	0.08	1.98	3.54	6.25	0.48	3.80	3.32	0.28	5.60	3620
0.23	4.10	2.24	0.58	7.15	0.28	7.35	7.07	3.31	7.26	3410
0.00	2.32	5.27	2.05	9.64	0.55	6.75	6.20	3.55	5.56	3514

TABLE 6. ANALYSES OF

Station No.	Manufacturer and brand	Place of sampling
3648	Pulverized Sheep Manure. The American Agricultural Chemical Co., North Weymouth 91, Mass.	Hamden
3535	Sheep Manure. Apothecaries Hall Co., Waterbury, Conn.	Greenwich
3638	Sheep Manure. Apothecaries Hall Co., Waterbury, Conn.	New London
3470	Armour's Pulverized. Armour Fertilizer Works, New York 5, N. Y.	Danbury
3554	Driconure. Atkins & Durbrow, Inc., New York 7, N. Y.	Meriden
3517	Corenco Sheep Manure. Consolidated Rendering Co., Boston 10, Mass.	North Haven
3545	Davey Shredded Manure. Davey Tree Expert Co., Kent, Ohio	Old Greenwich
3556	Norwood Brand Sheep Manure. Norwood Brand Fertilizer Co., No. Reading, Mass.	Waterbury
3536	Premiurnure. Premier Peat Moss Corp., New York, 17, N. Y.	Greenwich
3666	Wizard Brand Cow Manure. The Pulverized Manure Co., Chicago 9, Ill.	Danbury
3664	Wizard Brand Pulverized Sheep Manure. The Pulverized Manure Co., Chicago 9, Ill.	Danbury
3753	Wizard Brand Pulverized Sheep Manure. The Pulverized Manure Co., Chicago 9, Ill.	Stamford
3550	Gro-Fast Cow Manure. The Rogers and Hubbard Co., Portland, Conn.	Meriden
3415	Gro-Fast Sheep Manure. The Rogers and Hubbard Co., Portland, Conn.	New Haven
3551	Gro-Fast Sheep Manure. The Rogers and Hubbard Co., Portland, Conn.	Meriden
3438	Garden Master Sheep Manure. Sears, Roebuck & Co., Chicago 7, Ill.	Middletown
3751	Sawconure 2-1-1. Stumpp & Walter Co., New York, 8, N. Y.	Stamford
3752	Sawco's Cow Manure 1½-1-1. Stumpp & Walter Co., New York 8, N. Y.	Stamford
3430	Bovung. Walker-Gordon Laboratory Co., Plainsboro, N. J.	New Haven

¹ Deficiencies are in bold face type.² Guaranteed available 0.35.³ Guaranteed 1.00%.

SHEEP MANURE, ETC.¹

In nitrates	Per cent nitrogen					Per cent phosphoric acid				Per cent potash		Station No.
	In ammonia	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	0.00	0.32	1.38	1.70	1.25	.....	1.85	1.00	.....	4.60	2.00	3648*
0.00	0.16	0.38	1.49	2.10	1.00	.....	2.65	0.50	.....	3.82	1.00	3535
0.00	0.20	0.36	1.21	1.77	1.00	.....	1.63	0.50	.....	3.83	1.00	3638
0.00	0.04	0.16	1.30	1.50	1.50	.....	1.78	1.00	.....	3.47	2.00	3470
0.00	0.32	0.35	0.81	1.49	2.00	.....	2.03	1.00	.....	1.13	1.00	3554
0.00	0.00	0.42	1.18	1.63	1.25	0.43	1.45	1.00	1.02	3.47	2.00	3517
0.00	0.30	1.07	1.44	2.88	2.00	0.65	2.68	1.00	2.03	1.93	1.00	3545
0.00	0.10	0.24	0.84	1.18	1.50	0.70	1.18	.....	0.48 ³	3.07	2.75	3556
0.00	0.24	0.97	1.52	2.75	2.00	0.45	3.05	1.00	2.60 ²	1.82	1.00	3536
0.00	0.00	0.41	1.77	2.18	2.00	0.10	1.73	.....	1.63 ²	2.29	1.00	3666
0.00	0.00	0.45	1.83	2.28	2.00	0.25	1.83	.....	1.58 ²	2.74	2.00	3664
0.00	0.12	0.25	1.69	2.06	2.00	0.38	2.13	.....	1.75 ²	2.78	2.00	3753
0.00	0.58	0.96	1.80	3.36	2.00	.....	3.00	1.00	.....	1.91	1.00	3550
0.00	0.00	0.16	1.27	1.43	1.25	.....	1.48	1.00	.....	2.45	2.00	3415
0.00	0.04	0.10	1.36	1.52	1.25	.....	1.50	1.00	.....	2.24	2.00	3551
0.00	0.10	0.47	1.62	2.19	1.75	.....	1.48	0.80	.....	4.14	3.00	3438
0.00	0.60	1.23	1.81	3.64	2.00	0.30	4.18	.....	3.88 ²	2.07	1.00	3751
0.00	0.00	0.29	1.00	1.29	1.50	0.40	1.50	.....	1.10 ²	2.76	1.00	3752
0.00	0.12	0.52	1.54	2.18	2.00	.....	1.88	1.00	.....	2.48	1.00	3430

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	
655	Connecticut Agstone Co., Danbury, Conn. Limestone	Hartford: Production and Marketing Ad- ministration	37.97	6.06	44.03	98.5	66.0	655
3608	New England Lime Co., Adams, Mass. Agricultural Hydrated Lime	West Suffield: Burton K. Holcomb	45.22	30.65	75.87	.....	.....	3608
2479	Agricultural Magnesian Lime	Simsbury: Cullman Bros., Inc.	48.22	32.93	81.15	.....	.....	2479
3068	Manufacturer unknown Lime	Danbury: Production and Marketing Ad- ministration	37.20	7.55	44.75	.....	.....	3068
3069	Lime	Danbury: Production and Marketing Ad- ministration	37.40	6.82	44.22	.....	.....	3069
3070	Lime	Danbury: Production and Marketing Ad- ministration	36.69	8.42	45.11	.....	.....	3070

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 active insoluble	Organic in-active insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total		
	American Agricultural Chemical Co., No. Weymouth 81, Mass.														
3537	Agrico for Broadleaf Evergreens 6-10-4	Greenwich	0.00	5.80	0.16	0.27	0.07	6.30	0.89	12.81	11.92	4.76	4.76	3537	
3521	Agrico for Gardens 5-10-5	Milford	0.44	4.36	0.26	0.19	.....	5.25	0.84	12.07	11.23	5.22	5.22	3521
3444	Agrico for Lawns, Trees and Shrubs 6-10-4	Hartford	0.60	4.92	0.46	0.39	0.25	6.62	0.93	11.83	10.90	4.08	4.08	3444	
	Armour Fertilizer Works Atlanta, Ga.														
3653	Armour's Velvetgreen Plant Food 5-10-5	Waterbury	0.14	4.46	0.18	0.28	.....	5.06	0.72	11.03	10.31	2.01	5.34	3653
	Atkins & Durbrow, Inc., New York, N. Y.														
3437	Driconure	Middletown	0.00	0.28	1.68	0.60	1.16	3.72 ⁹	.....	2.78 ³	.....	0.98	1.69	3437
	Faesy & Besthoff, Inc., New York, N. Y.														
3541	Rose Food 8-10-4	Greenwich	0.86	3.12	0.40	1.94	0.81	7.13	1.90	11.90	10.00	4.08	6.00	3541	
3658	Pure Bone Meal	Danbury .....	.....	.....	.....	.....	.....	3.00 ⁵	.....	27.75 ⁶	.....	.....	.....	3658
	A. H. Hoffman, Inc., Landisville, Pa.														
3640	Poultry Manure	New London	0.00	0.14	1.44	0.78	1.14	3.50 ²	0.70	4.18 ³	3.48	1.01	1.84 ⁴	3640	
3469	Hoffman Bone Meal	Danbury .....	.....	.....	.....	.....	.....	3.91 ⁷	.....	25.90 ⁸	.....	.....	.....	3469
3458	Hoffman Cow Manure (Dehydrated) 2-1-1	Bethel	0.00	0.14	0.24	0.52	1.21	2.11	0.48	1.88	1.40	0.68	2.34	3458	
3425	Hoffman Sheep Manure (Kiln Dried)	New Haven	0.00	0.00	0.28	0.59	1.00	1.87 ⁴	.....	1.85 ³	.....	0.92	3.14 ⁹	3425
	The Hy-Trous Corp., Boston, Mass.														
3439	Hy-Trous Liquid Fertilizer 4-8-4	Middletown	2.76	1.20	1.52	0.00	0.00	5.48	0.85	8.33	7.48	0.00	4.77	3439	

¹ Deficiencies are in bold face type. ² Guaranteed 1.0%.
³ Guaranteed 3.0%. ⁴ Guaranteed 1.5%.

⁵ Guaranteed 2.25%.
⁶ Guaranteed 27.0%.

⁷ Guaranteed 3.7%.
⁸ Guaranteed 20.0%.

⁹ Guaranteed 2.0%.

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 active insoluble	Organic in-active insoluble	Total	Citrate-insoluble	Total	So-called "available"	As muriate	Total	
3428	McCormick & Co., Baltimore, Md. Hy-Gro 13-26-13	New Haven	1.69	6.56	6.84	0.29	.....	15.38	0.63	27.15	26.52	1.53	14.44	3428
3567	Miller Chemical & Fertilizer Corp., Baltimore, Md. V-H-P-F	Windsor Locks ...	5.04	1.16	0.04	0.04	.....	6.28 ²	.....	25.90 ³	.....	17.45	17.45 ⁴	3567
3764	Plantspur Products Co., Jersey City, N. J. Plantspur 4-4-2	Norwalk	0.00	4.04	0.52	0.26	0.21	5.03	0.85	5.83	4.98	1.67	2.48	3764
3429	The Frank S. Platt Co., New Haven, Conn. Bone Meal	New Haven .....	.....	.....	.....	.....	.....	4.08 ⁵	.....	25.10 ⁶	.....	.....	.....	3429
3431	The Rogers & Hubbard Co., Portland, Conn. Gro-Fast Plant Food 5-8-5	New Haven	0.31	3.16	0.84	0.81	0.41	5.33	0.65	8.93	8.28	2.80	6.02	3431
3763	Stump & Walter Co., New York, N. Y. Sawco General Garden Fertilizer 5-10-5	Stamford	0.64	3.74	0.18	0.23	.....	4.79	0.45	12.05	11.60	4.24	6.58	3763
3762	Sawco Rose Food 5-10-5	Stamford	0.52	3.76	0.20	0.24	.....	4.72	0.60	11.78	11.18	5.53	6.48	3762
3423	Swift & Co., Baltimore, Md. Vigoro 4-12-4	Torrington	0.00	3.40	0.54	0.18	.....	4.12	0.28	13.12	12.84	0.39	4.50	3423
3565	Vigoro 4-12-4	Waterbury	0.52	3.54	0.12	0.17	.....	4.35	0.98	13.20	12.22	3.72	4.32	3565
3765	Vigoro Complete Plant Food (Tab- lets) 4-12-4	Norwalk	0.33	3.24	0.22	0.25	.....	4.04	1.80	14.93	13.13	3.51	4.36	3765

¹ Deficiencies are in bold face type.² Guaranteed 5.0%.³ Guaranteed 25.0%.⁴ Guaranteed 15.0%.⁵ Guaranteed 3.7%.⁶ Guaranteed 20.0%.

TABLE 9. ANALYSES OF OTHER MISCELLANEOUS MATERIALS

Station No.	Material	Nitrogen per cent	Total phosphoric acid per cent	Water-soluble potash per cent	Chlorine per cent	Other analytical items per cent
3930	By-product material	3.16	.....	.....	.....	Nitrate N 0.00; ammonia N 0.16; sol. organic N 0.75; organic active insol. N 0.68; organic inactive insol. N 1.57.
3349	Fertilizer	0.56	0.06	0.02	.....	Moisture 69.5; ash 8.17.
1396	Ground Starfish	5.20	1.30	0.76	2.47	CaO 22.05; MgO 1.53; Fe 0.10; Cu 125 p.p.m.; B 40 p.p.m.
2014	Ground Starfish	5.66	1.65	0.75	2.33	CaO 22.05; MgO 1.53.
840	Kittel's Ready Grow	0.04	1.13	0.13	.....	Sulphide present.
1465	Local Windsor manure .....	.....	.....	.....	0.85	
1464	New Jersey manure .....	.....	.....	.....	0.48	
743	Organic tobacco fertilizer	2.51	0.76	3.56	1.02	Nitrate N 0.40; ammonia N 0.29; sol. organic N 0.49; organic active insol. N 0.37; organic inactive insol. N 0.96; available P_2O_5 0.21.
445	Rock from Elgin, Oregon	0.00	trace	0.27	.....	Total K_2O 4.75; SiO_2 91.00.
3742	Sewage sludge	1.07	2.90	0.15	.....	Moisture 50.0.
3877	Sewage sludge 2.75-0.75-0.50	2.66	Nitrate N 0.00; ammonia N 0.00; sol. organic N 0.00; organic active insol. N 1.36; organic inactive insol. N 1.30.
2466	Tobacco stems	1.54	0.75	5.61	Moisture 12.0.

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