

Bulletin 390

October, 1936

COMMERCIAL FERTILIZERS
REPORT FOR 1936



Connecticut
Agricultural Experiment Station
New Haven

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Connecticut
Agricultural Experiment Station
New Haven

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COMMERCIAL FERTILIZERS REPORT FOR 1936

STATUTE 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.

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 the 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.

NOTE: Analyses reported in this bulletin were made by Messrs. Nolan, Mathis and Walden; microscopic examinations by Miss Shepard; inspection and sampling by Mr. Churchill; and compilations by Mrs. Vosburgh.

ORGANIC MATERIALS AS SOIL AMENDMENTS

Materials of this class include vegetable matter sold generally under such names as "compost", "humus", "peat" or muck. Such materials do not supply any considerable amount of plant food but they enhance the moisture-holding capacity of the soil and serve as a medium favorable for the action of soil bacteria.

No regulation has been made to require these materials to be registered as "fertilizers". They are soil supplements or amendments; but since they generally do not contain plant food in excess of 1 per cent of nitrogen, phosphoric acid or potash, they are not recognized as fertilizers subject to registration. In nitrogen content they sometimes exceed 1 per cent, but when such nitrogen comes from peat or similar sources, and has resisted transformation over long periods of soil decomposition, its availability as plant food is limited or negligible and it may be doubted if it is within the intent of the fertilizer law to recognize it as a registrable item of composition.

DEFINITIONS OF FERTILIZER MATERIALS AND INTERPRETATION OF TERMS USED IN FERTILIZER CONTROL

For the purpose of bringing about a better understanding among control officials and the fertilizer industry as to the identity of fertilizer materials and the significance of terms used in interpreting results of analysis, a special committee of the Association of Official Agricultural Chemists was appointed in 1921 to consider this question, and from time to time pronouncements have been made.

The following definitions and interpretations are now official.¹

DEFINITIONS

ACIDULATED FISH TANKAGE, ACIDULATED FISH SCRAP

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

ACTIVATED SEWAGE PRODUCTS

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, filtrated with or without the aid of coagulants, dried, ground, and screened.

AMMONIATED SUPERPHOSPHATE

Ammoniated superphosphate is a product containing superphosphate and/or dissolved bone and nitrogenous compounds, but without the addition of potash.

ANALYSIS

Analysis, as applied to fertilizers, designates the percentage composition of the product expressed in terms of nitrogen, phosphoric acid, and potash in their various forms.

¹Official and Tentative Methods of Analysis, A.O.A.C., 1930, page 490.

ASHES FROM LEACHED WOOD

Ashes from leached wood are unleached ashes resulting from the burning of 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.

BASIC PHOSPHATE SLAG

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 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. Any other phosphate slag not conforming to this definition shall be designated low grade.

BRAND AND BRAND NAME

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.

CRUDE, INERT, OR SLOW-ACTING NITROGENOUS MATERIALS

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 fifty per cent (50%) and eighty per cent (80%) respectively.

DISSOLVED BONE

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

DRIED BLOOD

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

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

FERTILIZER GRADE

Fertilizer grade shall represent only the minimum guarantee 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, FISH MEAL FERTILIZER GRADE

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

GARBAGE TANKAGE

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

GROUND RAW BONE

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

GROUND STEAMED BONE

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

HOOF AND HORN MEAL

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

KAINIT

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

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.

MANURE SALTS

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 is discontinued.

MURIATE OF POTASH (COMMERCIAL POTASSIUM CHLORIDE)

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

NITRATE OF POTASH (COMMERCIAL POTASSIUM NITRATE)

Nitrate of potash 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)

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

PRODUCTS SECURED BY HEATING CALCIUM PHOSPHATE WITH ALKALI SALTS CONTAINING POTASH

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

SULFATE OF POTASH (COMMERCIAL POTASSIUM SULFATE)

Sulfate of potash 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.

SULPHATE OF POTASH-MAGNESIA

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 (2.5%) of chlorine.

SUPERPHOSPHATE

Superphosphate is a cured mixture of rock phosphate and sulfuric acid and/or phosphoric acid. The grade shall always be used as a prefix to the name. Example: 16% Superphosphate. The use of the term Acid Phosphate is discontinued.

TANKAGE

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

UNIT OF PLANT FOOD

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

UNLEACHED WOOD ASHES

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).

INTERPRETATIONS

ACTIVITY OF WATER-INSOLUBLE NITROGEN IN FERTILIZERS

The alkaline and neutral permanganate methods distinguish between the better and the poorer sources of water-insoluble nitrogen; they do not show the percentage availability of the material. The available nitrogen of any product is measured only by carefully conducted vegetation experiments.

(a) The methods shall be used on mixed fertilizers containing water-insoluble nitrogen amounting to three-tenths of one per cent (0.3%) or more of the weight of the material. If a total nitrogen exceeds the minimum guarantee and is accompanied by a low activity of the insoluble nitrogen, the over-run shall be taken into consideration in determining the classification of the water-insoluble nitrogen.

(b) The water-insoluble nitrogen in mixed fertilizers showing an activity below fifty per cent (50%) by the alkaline method, and also below eighty per cent (80%) by the neutral method, shall be classed as inferior. This necessitates the use of both methods, also the provision as to over-run in (a), before classifying as inferior.

AMOUNT OF CHLORINE PERMISSIBLE IN FERTILIZERS IN WHICH THE POTASH IS CLAIMED AS SULFATE

Chlorine in mixed fertilizers in which the potash is claimed as sulfate shall not exceed one-half of one per cent (0.5%) more than what is called for in the minimum potash content based on the definition for sulfate of potash formulated by the committee. Calculate as follows: 0.05 times the percentage of potash found plus 0.5.

BRAND NAME TO INCLUDE ANALYSIS OR GRADE OF FERTILIZER

The analysis or grade of a fertilizer should be included with its brand name, and so used by the manufacturer on sacks and in printed literature and by the control official in his reports and publications.

FERTILIZER FORMULA

A fertilizer formula shall express the quantity and grade of the crude stock materials used in making a fertilizer mixture. For example: 800 pounds of 16 per cent superphosphate, 800 pounds of tankage (7.40 nitrogen and 9.15 total phosphoric acid), and 400 pounds of sulphate of potash-magnesia (twenty-six per cent (26%) potash).

FINELY GROUND AS APPLIED TO BASIC PHOSPHATE SLAG

Finely ground in the definition of basic phosphate slag shall refer to actual size of particles as determined by the use of standard sieves, as follows: seventy per cent (70%) or more shall pass a 100-mesh, and ninety per cent (90%) or more shall pass a 50-mesh sieve.

FORM OF NITROGEN IN CALCIUM CYANAMIDE

The nitrogen in calcium cyanamide shall be considered as being of organic nature.

THE TERM LIME AS APPLIED TO FERTILIZERS

The term lime shall not be used in the registration, labelling, or guaranteeing of fertilizers or fertilizing materials, unless the lime is in a form to neutralize soil acidity, such as the oxide, hydroxide, or carbonate, or equivalent magnesia compounds.

ORDER OF TERMS

The order of terms in mixed fertilizers shall be nitrogen first, phosphoric acid second, and potash third.

NAME OF A FERTILIZER MATERIAL USED AS THE BRAND NAME OR PART OF THE BRAND NAME OF A MIXED FERTILIZER

When the name of a fertilizer material is used as part of the brand name of a mixed fertilizer, as for example blood, bone or fish, the nitrogen or phosphoric acid shall be derived from or supplied entirely by the material named. When the name of a fertilizer material is used as a brand or as part of a brand and the nitrogen and phosphoric acid is not supplied by the material named, the word brand shall follow the name of the material. Example: Fish Brand Fertilizer.

STATEMENT OF GUARANTEE

The statement of guarantee of mixed fertilizers shall be given in whole numbers.

REGISTRATIONS

LATE REGISTRATIONS FOR 1935

To the brands registered for 1935 in our last report should be added:

E. T. Allen Co., Atlanta, Ga.
Empire 41% Protein Cottonseed Meal
Prime Quality

L. B. Lovitt & Co., Memphis, Tenn.
"Lovit Brand" 41% Protein Cottonseed Meal

Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.
Pinkerton Bell Brand 4-8-4
Pinkerton Bell Brand 5-8-7
Standard U. S. 4-8-7
Standard U. S. 4-8-8

REGISTRATIONS FOR 1936

For 1936, 55 firms and individuals registered 319 brands of fertilizers at this Station for sale in this State. As required by statute, the brands so registered are listed as follows:

Acme Guano Co., 416 Munsey Bldg., Baltimore, Md.
Acme 2-12-2
Acme 3-10-6
Acme 4-8-4
Acme 5-8-7

American Agricultural Chemical Co., North Weymouth, Mass.

AA Complete Manure 10% Potash 4-8-10
AA General Crop Fertilizer 2-10-2
AA Monarch Fertilizer 4-8-4
AA Peerless Fertilizer 4-8-7
AA Potato and Vegetable Fertilizer 5-8-7
AA Prolific 10% Potash Fertilizer 2-8-10
AA Tobacco Starter 5-5-15
AA Top Dresser 7-6-6
AA 16% Superphosphate
Agrico for Corn 3-10-6
Agrico for Gardens 5-8-7
Agrico for Lawns, Trees and Shrubs 7-6-6
Agrico for New England 4-8-10
Agrico for Pastures and Top Dressing 7-6-6
Agrico for Potatoes and Vegetables 5-8-7
Agrico for Tobacco 6-3-6
Agrico for Truck 5-10-5
Bradley's XL Fertilizer 3-10-4
Castor Pomace
Double A Tobacco Fertilizer 5-3-5
Dry Ground Menhaden Fish
Fine Ground Bone
Fish Meal
High Grade Sulphate of Potash
Muriate of Potash
Pulverized Sheep and Goat Manure
Sanderson's Formula B 4-8-7
Sulphate of Ammonia

American Cyanamid Co., 30 Rockefeller Plaza, New York City

21% 'Aero' Cyanamid-Granular
'Ammono-Phos' 11-48-0
'Ammono-Phos' 16-20-0

Apothecaries Hall Co., 8-24 Benedict St., Waterbury, Conn.

Bone Meal 2.47-23.00%
Bone Meal 3.70-21.00%

Bone and Meat Tankage 3.70-21.00%
Castor Pomace
Cotton Hull Ashes
Domestic Sheep Manure
Dry Ground Fish
Liberty Corn 2-10-2
Liberty Fish, Bone and Potash 3-10-4
Liberty High Grade Corn 2-12-4
Liberty High Grade Market Gardeners 5-8-7
Liberty High Grade Tobacco Manure 6-3-7
Liberty High Grade Tobacco Manure 7-3-7
Liberty Market Gardeners Special 4-8-4
Liberty Onion Special (Potash as Sulphate) 4-8-7
Liberty Potato and General Crops 4-8-10
Liberty Potato and Market Gardeners (Potash as Muriate) 4-8-7
Liberty Pulverized Sheep & Goat Manure
Liberty Special Fertilizer for Fruit 7-8-6
Liberty Special Fertilizer for Lawns, Gardens, etc. 4-4-0
Liberty Tobacco Fertilizer 6-3-6
Liberty Tobacco Special 5-3-5
Liberty Tobacco Starter 4-10-0
Liberty Tobacco Starter (with Potash) 5-4-15
Liberty Top Dresser for Grass and Grain 8-8-8
Liberty Tree and Shrub Food 10-8-8
Muriate of Potash
Nitrate of Potash
Precipitated Bone
Sulphate of Ammonia
Sulphate of Potash
Super Phosphate 16%
Tankage

Armour Fertilizer Works, 120 Broadway, New York City

Armour's Big Crop Fertilizer 2-10-2
Armour's Big Crop Fertilizer 3-12-6
Armour's Big Crop Fertilizer 4-8-4
Armour's Big Crop Fertilizer 4-8-7
Armour's Big Crop Fertilizer 4-8-10
Armour's Big Crop Fertilizer 4-16-4
Armour's Big Crop Fertilizer 5-8-7
Armour's Big Crop Fertilizer 7-6-6
Armour's Big Crop Fertilizer 8-16-20

- Armour's Big Crop Superphosphate 16%
 Armour's Big Crop Tobacco Special 5-3-5
 Armour's Big Crop Tobacco Special 6-3-6
 Armour's Bone Meal Fertilizer
 Castor Pomace
 Sheep and Goat Manure
- Ashcraft-Wilkinson Co., Atlanta, Ga.**
 Cow-Eta Brand Prime Cottonseed Meal 36%
 Cow-Eta Brand Cottonseed Meal 41%
- Associated Seed Growers, Inc., 205 Church St., New Haven, Conn.**
 Clark's Hygrade 4-8-10
 Clark's Mixture for General Use 4-8-4
 Clark's Standard 4-8-7
 Clark's 16% Superphosphate
 Clark's Tip Top Brand 5-8-7
 Clark's Top Dressing 6-6-5
 Nitrate of Soda, Champion Brand 16%
- Atkins & Durbrow Co. Inc., 165 John St., New York City**
 Driconure
 Henure
- Baker Castor Oil Co. of Delaware, 120 Broadway, New York City**
 Castor Pomace
- Barrett Co., 40 Rector St., New York City**
 Arcadian the American Nitrate of Soda
 Arcadian Sulphate of Ammonia
 Sulphate of Ammonia
- F. A. Bartlett Tree Expert Co., 60 Canal St., Stamford, Conn.**
 Bartlett Green Tree Food 6-7-4
- Baugh & Sons Co., Baltimore, Md.**
 Baugh's Animal Base and Potash Compound 2-10-2
 Baugh's Complete Animal Base Fertilizer 3-8-4
 Baugh's Fish, Bone and Potash 4-8-4
 Baugh's Half Century Perfection Brand 4-8-7
 Baugh's Peruvian Guano Substitute 5-8-7
 Baugh's Pure Steamed Bone Meal
 Baugh's Raw Bone Meal
 Baugh's Special Top Dresser 7-6-6
 Baugh's 3/4 Century Perfection Brand 3-10-6
 Baugh's Trucker's Favorite 5-10-5
- Baughphos, The Ideal 16% Superphosphate
 Castor Pomace
 Ground Tankage
 Japanese Sardine Meal
 Muriate of Potash
 Sulphate of Ammonia
- Berkshire Chemical Co., Bridgeport, Conn.**
 Berkshire Castor Pomace
 Berkshire Complete Fertilizer 2-12-2
 Berkshire Complete Tobacco Fertilizer 5-3-5
 Berkshire Dry Ground Menhaden Fish
 Berkshire Farmers Favorite 5-10-5
 Berkshire Fine Ground Bone
 Berkshire Golf Green Fertilizer 8-5-2
 Berkshire Grass Special Fertilizer 6-6-5
 Berkshire Ground Tankage
 Berkshire High Grade Tobacco Fertilizer 6-3-6
 Berkshire Long Island Special Fertilizer 4-8-7
 Berkshire Market Garden Fertilizer 4-8-4
 Berkshire Potato and Garden Special Fertilizer 5-8-7
 Berkshire 7-6-6 Fertilizer
 Berkshire Superphosphate 16%
 Berkshire 3-10-6 Fertilizer
 Berkshire Tobacco Special Fertilizer 7-3-7
 Berkshire Truck Fertilizer 4-8-5
- Bisbee Linseed Co., 2100 Lincoln-Liberty Bldg., Philadelphia, Pa.**
 Bisbee 34% Protein Old Process Linseed Meal
- Chilean Nitrate Sales Corp., 120 Broadway, New York City**
 Champion Brand Chilean Nitrate of Soda
 Chilean Nitrate of Soda Containing Potash
 Standard Chilean Nitrate of Soda
- Consolidated Rendering Co., 178 Atlantic Ave., Boston, Mass.**
 Corenco 2-10-2 Bone Brand
 Corenco 3-10-4 Animal Brand
 Corenco 4-8-4 Corn and Vegetable
 Corenco 4-8-7 Market Garden
 Corenco 4-8-10 Potato Grower
 Corenco 5-5-5 Lawn and Shrub Fertilizer
 Corenco 5-8-7 General Crop Manure
 Corenco 5-8-10 Peerless Potato
 Corenco 5-10-5 Super Truck

- Corenco 6-3-6 Special Tobacco Grower
 Corenco 7-3-7 Super Tobacco Grower
 Corenco 7-6-6 Complete Fruit and Top Dressing
 Corenco 8-16-14 Two in One
 Corenco Ground Bone
 Corenco Sheep Manure
 Ground Tankage
 Muriate of Potash
 Sulphate of Ammonia
 Sulphate of Potash
 Superphosphate 16%

- Davey Tree Expert Co., Kent, Ohio**
 Davey Shredded Cattle Manure
 Davey Tree Food 10-3-3

- Davison Chemical Corp., Baltimore, Md.**
 Davco Homogeneous Granulated Fertilizer 4-8-4
 Davco Homogeneous Granulated Fertilizer 5-8-7

- E. I. du Pont de Nemours & Co. Inc., Wilmington, Del.**
 Crystal Urea

- Eastern States Farmers' Exchange, Springfield, Mass.**
 Eastern States 0-14-6
 Eastern States 4-8-8
 Eastern States 4-12-4
 Eastern States 4-16-20
 Eastern States 5-5-15 Tobacco
 Eastern States 6-8-6
 Eastern States 8-4-8 Tobacco
 Eastern States 8-12-20
 Eastern States 8-16-16
 Eastern States 8-16-16 Low Chlorine Special
 Eastern States 8-20-12
 Eastern States 8-24-8
 Eastern States 10-5-10 Tobacco
 Eastern States 12-4-4
 Eastern States 12-16-12
 Eastern States Calnitro
 Eastern States Castor Pomace
 Eastern States Cottonseed Meal-Castor Pomace Mixture
 Eastern States Dry Ground Fish
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 Eastern States Sulphate of Ammonia, Special Dried
 Eastern States Sulphate of Potash

- Eastern States Sulphate of Potash-Magnesia
 Eastern States 20% Superphosphate
 Eastern States 40% Double Superphosphate
 Eastern States Urea

- Faes & Besthoff, Inc., 22 E. 40th St., New York City**
 Bone Meal

- Ford Motor Co., Dearborn, Mich.**
 Ford Ammonium Sulphate

- Paul M. Hubbard & Co., Bristol, Conn.**
 Hubbard's Special Lawn Food 10-6-4

- Humphreys-Godwin Co., Memphis, Tenn.**
 Dixie Brand 41% Protein Cottonseed Meal

- International Agricultural Corp., 38 Chauncy St., Boston, Mass.**
 Caribee Market Garden Fertilizer 5-10-10
 International 4-8-4
 International 5-8-7
 International 7-6-6
 International 8-16-14
 International 16% Superphosphate

- Spencer Kellogg & Sons, Inc., Buffalo, N. Y.**
 Castor Pomace
 Kellogg's 32% Protein Pure Old Process Linseed Meal

- Kelloggs & Miller, Inc., Amsterdam, N. Y.**
 "K & M" Brand Old Process Linseed Meal, 34% Protein

- Leary The Florist, Waterbury, Conn.**
 All-Grow 4-8-5

- L. B. Lovitt & Co., Memphis, Tenn.**
 "Lovit Brand" 41% Protein Cottonseed Meal

- Natural Guano Co., Aurora, Ill.**
 Sheep's Head Pulverized Sheep Manure

- New England Chemical Industries, Inc., 500 Fifth Ave., New York City**
 Steamed Bone Meal

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

Old Deerfield 5-8-12 (Tobacco Starter)
 Old Deerfield 6-3-7 (Complete Tobacco)
 Old Deerfield 7-6-6
 Old Deerfield Cotton Hull Ashes
 Old Deerfield Dry Ground Fish
 Old Deerfield Superphosphate 16% Pulverized Sheep and Goat Manure
 Valley Brand 2-10-2
 Valley Brand 4-8-4
 Valley Brand 4-8-7
 Valley Brand 5-8-7

Olds & Whipple, Inc., Hartford, Conn.

Luxura 5-8-6
 O&W Blue Label Tobacco Fertilizer 6-3-6
 O&W Blue Label Tobacco Fertilizer (Potash derived from Cottonhull Ashes) 6-3-5
 O&W Blue Label Tobacco Fertilizer (Potash derived from Cottonhull Ashes) 6-3-6
 O&W Bone Meal
 O&W Castor Pomace
 O&W Complete Tobacco Fertilizer 5-3-5
 O&W Corn Special Fertilizer 3-10-4
 O&W Cotton Hull Ashes
 O&W Dry Ground Fish
 O&W High Grade Tobacco Starter and Potash Compound 5-4-15
 O&W Market Garden Fertilizer 4-8-4
 O&W Nitrate of Potash
 O&W Potato and General Purpose Fertilizer 4-8-7
 O&W Potato and General Purpose 5-8-7
 O&W Precipitated Bone Phosphate
 O&W Superphosphate
 O&W Top Dressing and Grass Fertilizer 8-6-6
 Sulphate of Potash
 Wilcox Corn Special 3-10-4
 Wilcox Market Garden Fertilizer 4-8-4
 Wilcox Potato and General Purpose Fertilizer 4-8-7
 Wilcox Potato and General Purpose Fertilizer 5-8-7

Outpost Nurseries, Inc., Ridgefield, Conn.

Outpost Plant Food 8-5-2

Pacific Manure & Fertilizer Co., 108-110 Davis St., San Francisco, Calif.

Groz-It Brand Pulverized Sheep Manure

Plantspur Products Co., Ridgefield, N. J.

Plantspur Fertilizer 3-3-2

Frank S. Platt Co., New Haven, Conn.

Platco Special 5-8-7
 Platt's Special Lawn Fertilizer 10-5-5

Premier Poultry Manure Co., 327 So. LaSalle St., Chicago, Ill.

Premier Brand Pulverized Poultry Manure

Pulverized Manure Co., 503 Exchange Bldg., Union Stock Yards, Chicago, Ill.

Wizard Brand Cow Manure
 Wizard Brand Pulverized Sheep Manure

The Rogers & Hubbard Co., Portland, Conn.

"Bone Base" Oats and Top Dressing
 "Bone Base" Seeding Down Fertilizer
 "Bone Base" Soluble Corn and Market Garden Manure
 "Bone Base" Soluble Potato and Tobacco Manure
 Fine Ground Bone
 Gro Fast Plant Food 5-6-6
 Hubbard's All Soils All Crops 4-8-4
 Hubbard's Climax Tobacco Brand 5-3-5
 Hubbard's Corn and Grain 2-12-4
 Hubbard's Golf Course Fertilizer 8-6-2
 Hubbard's High Potash 2-8-10
 Hubbard's Potato Fertilizer 5-8-7
 Hubbard's Pure Raw Knuckle Bone Flour
 Hubbard's Superphosphate 16%
 Hubbard's Tobacco Grower-Vegetable Formula, Cottonseed Base 6-3-6
 Red H Brand 4-8-4
 Red H Brand 4-8-7
 Red H Brand 5-8-7
 Red H Brand 7-6-6
 Red H Brand 8-16-14
 Sheep and Goat Manure
 Strictly Pure Fine Bone

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

Scott's Turf Builder 10-6-4

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

Milorganite

M. L. Shoemaker & Co. Inc., Philadelphia, Pa.

Shoemaker's "Swift Sure" Fine Ground Bone
 Shoemaker's "Swift Sure" 4-10-0 Tobacco Starter

Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.

Standard 4-8-4 Fertilizer
 Standard 5-8-7 Fertilizer
 Standard 7-6-6 Fertilizer

Stumpp & Walter Co., 132 Church St., New York City.

Sawco Bone Fertilizer
 Sawco Emerald Grass Fertilizer 5-7-3
 Sawco General Garden Fertilizer 5-10-5
 Sawco Pulverized Sheep Manure
 Sawconite
 Sawconure

Summers Fertilizer Co. Inc., Baltimore, Md.

4-8-7 Fertilizer
 5-8-7 Fertilizer
 16% Superphosphate

Swift & Co. Fertilizer Works, Baltimore, Md.

Bone Meal Fertilizer
 Swift's Special Golf Fertilizer 12-6-4
 Vigoro 4-12-4

Synthetic Nitrogen Products Corp., 285 Madison Ave., New York City

Calcium Nitrate (Nitrate of Lime)
 Nitrophoska 15-30-15
 Urea

Tennessee Corp., Lockland, Ohio

Loma 5-10-4
 Soil-Prep 4-2-2

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

I. P. Thomas 4-8-7
 I. P. Thomas 5-8-7
 I. P. Thomas 8-16-14
 Muriate of Potash 48% K₂O
 Pure Ground Bone 2.45% Nit., 23% T. P. A.
 16% Superphosphate
 20% Superphosphate
 Tip Top Fertilizer 3-10-6
 Truckers High Grade Guano 4-8-4

Virginia-Carolina Chemical Corp., Carteret, N. J., Richmond, Va.

Bloom Aid (New Process) 4-10-3
 Sulphate of Ammonia
 V-C Fairway Fertilizer (New Process) 6-6-4
 V-C Fertilizer 2-10-2
 V-C Fertilizer 4-8-4
 V-C Fertilizer 4-8-5
 V-C Fertilizer 4-8-10
 V-C Fertilizer 5-8-7
 V-C Fertilizer 8-6-6
 V-C Fertilizer 16%

The Vita-Vim Co., Baltimore, Md.

Vita-Vim 6-10-4

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

Bovung

Thomas Wood & Sons, Inc., 12-14 Midland Ave., Montclair, N. J.

Woodgro Pure Cow Manure Dehydrated

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

Gro-Sod Lawn Food 10-6-4

INSPECTION OF 1936

The Station Agent has visited 72 towns and villages in the State and has drawn 345 official samples of fertilizer, including all the registered brands that could be found. The classification of these and of other samples is given in the summary.

CLASSIFICATION OF FERTILIZER MATERIALS, 1936

	Number of samples	Page
I. Containing Chiefly Nitrogen		
Nitrate of Soda	2	17
Calcium nitrate	3	18
Cyanamid	2	17
Urea	3	17
Ammonium sulfate	9	18
Castor pomace	11	17
Cottonseed meal	140	17
Linseed meal	9	17
Soybean oil meal	7	17
Sawconite	1	17
II. Containing Chiefly Phosphoric Acid		
Superphosphate	17	20
Precipitated bone	3	20
III. Containing Chiefly Potash		
Muriate of potash	5	23
Sulfate of potash	7	23
Cottonhull ashes	46	23
Wood ashes	1	23
IV. Containing Nitrogen and Potash		
Nitrate of potash	14	25
Nitrate of potash and soda	1	25
V. Containing Nitrogen and Phosphoric Acid		
Dry ground fish	24	27
Tankage	6	27
Ground bone	27	27
VI. Mixed Fertilizers		
Commercial mixtures	215	32
Special and home mixtures	24	33
VII. Miscellaneous		
Sheep manure	15	53
Lime	15	53
Other miscellaneous	70	58
Check meals and fertilizers	42	59
Total	719	

I. RAW MATERIALS CHIEFLY VALUABLE FOR NITROGEN

NITRATE OF SODA, ETC.

Analyses of official samples in this group are given in Table 1. Urea and cyanamid are classed as organic sources of nitrogen. Sawconite is also organic; it contains 1.52 per cent of water-soluble organic nitrogen and 4.56 per cent of water-insoluble organic nitrogen.

VEGETABLE PRODUCTS

Analyses of cottonseed and linseed meals and of castor pomace are given in Table 2.

None of the samples in these two groups showed any notable deficiencies. Samples submitted by purchasers have been examined and the results reported to them. Analyses of these unofficial samples are not included in this report unless they are of special interest.

Unofficial samples of soybean oil meal have been examined as follows:

No.	Moisture %	Nitrogen %	P ₂ O ₅ %	K ₂ O %	CaO %	MgO %
406	7.07	7.18	1.51	2.57	.....	.....
1364	7.78	6.85	.....	.....	.....	.....
1272	6.14	6.81	.....	2.49	.....	.....
1314	.....	7.07	1.59	2.49	0.41	0.59
1315	.....	6.92	1.62	2.46	0.44	0.56
1313	.....	6.74	1.69	2.46	0.44	0.57
1967	8.00	6.84	.....	.....	.....	.....

The character of the nitrogen in soybean oil meal is shown by an analysis made in this laboratory in 1930 as follows:

Total nitrogen	8.22%
Water insoluble organic	3.31
"Activity" of water-insol. (alkaline method)	54.4

Both total nitrogen and the "activity" of the water-insoluble organic are of about the same order as found in cottonseed meal. The amount of water-insoluble organic nitrogen in cottonseed meal is higher than that shown in the analysis here given. Adequate comparisons, however, are not possible on the basis of a single analysis.

TABLE 1. ANALYSES OF NITRATE OF SODA AND OTHER NITROGENOUS MATERIALS

Station No.	Manufacturer or Jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
Nitrate of Soda				
2074	Arcadian, the American. Barrett Co., New York City ..	State Farmers' Co-op., Plainville	16.08	16.00
1951	Champion Brand Chilean. Chilean Nitrate Sales Corp., New York City	Knowles-Lombard Co., Guilford	15.94	16.00
Calcium Nitrate (Nitrate of Lime)				
2327	Eastern States Calnitro. Eastern States Farmers' Exchange, Springfield, Mass. ..	Eastern States Branch, East Hartford	20.56	20.50
2362	Synthetic Nitrogen Products Corp., New York City	Olds & Whipple, Inc., Hartford	15.10	15.00
Urea				
2509	Crystal. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.	John M. Herr, East Hartford	46.64	46.00
2325	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	Eastern States Branch, East Hartford	46.32	46.00
2489	Synthetic Nitrogen Products Corp., New York City	Frank S. Platt Co., New Haven	46.40	46.00
Cyanamid				
1982	21% "Aero" Granular. American Cyanamid Co., New York City	Berkman Grain Co., Lebanon	21.54	21.00
Sulphate of Ammonia				
2118	American Agricultural Chemical Co., North Weymouth, Mass.	American Agricultural Chemical Co., West Haven	20.80	20.50
2003	Apothecaries Hall Co., Waterbury, Conn.	H. D. Peters, Hamden	20.92	20.50
1990	Baugh & Sons Co., Baltimore, Md.	T. W. Ryan, Stratford	20.32	20.57
2323	Arcadian. Barrett Co., New York City	Cadwell and Jones, Hartford	21.00	20.50
2127	Barrett Co., New York City ..	Berkshire Chemical Co., Bridgeport	20.63	20.56
2116	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	20.88	20.50
2326	Eastern States Special Dried. Eastern States Farmers' Exchange, Springfield, Mass. ..	Eastern States Branch, East Hartford	20.68	20.50
2520	Ford Motor Co., Dearborn, Mich.	New Haven Motor Sales, New Haven	20.92	20.80
2392	Virginia-Carolina Chemical Co., Carteret, N. J.	Litchfield County Co-op., Torrington	20.84	20.50
Sawconite				
2526	Stumpp & Walter Co., New York City, N. Y.	Stumpp & Walter Co., Stamford	6.18	6.00

TABLE 2. ANALYSES OF CASTOR POMACE, COTTONSEED MEAL, ETC.

Station No.	Manufacturer or Jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
Castor Pomace				
2120	American Agricultural Chemical Co., North Weymouth, Mass.	American Agricultural Chemical Co., West Haven	5.67	4.50
2361	American Agricultural Chemical Co., North Weymouth, Mass.	Spencer Bros., Suffield	5.68	4.50
2274	Apothecaries Hall Co., Waterbury, Conn.	Factory, East Windsor	5.65	4.52
2542	Baker Castor Oil Co., New York City	Olds & Whipple, Inc., East Hartford	5.57	4.50
1989	Baugh & Sons Co., Baltimore, Md.	T. W. Ryan, Stratford	4.80	4.50
2005	Berkshire. Berkshire Chemical Co., Bridgeport, Conn. ..	J. A. Smith, Hamden	4.90	4.50
2260	Eastern States Farmers' Exchange, Springfield, Mass. ..	H. H. McKnight, Ellington	5.64	4.50
2519	Spencer Kellogg & Sons, Buffalo, N. Y.	Apothecaries Hall Co., East Windsor	5.68	4.52
2227	O&W. Olds & Whipple, Inc. Hartford, Conn.	E. J. Bantle, Glastonbury...	5.82	4.50
Cottonseed Meal				
8743	Empire Brand 41%. E. T. Allen Co., Atlanta, Ga.	H. H. McKnight, Ellington	6.57	6.56
2095	Cow-Eta Brand. Ashcraft-Wilkinson Co., Atlanta, Ga.	Lightbourn & Pond Co., New Haven	5.78	5.76
2228	Cow-Eta Brand. Ashcraft-Wilkinson Co., Atlanta, Ga.	E. J. Bantle, Glastonbury..	6.59	6.58
2358	Dixie Brand 41%. Humphreys-Godwin Co., Memphis, Tenn.	Spencer Bros., Suffield	6.47	6.58
2504	Dixie Brand 41%. Humphreys-Godwin Co., Memphis, Tenn.	Steve Cybulski, Somers ...	6.59	6.58
2231	"Lovitt Brand" 41%. L. B. Lovitt & Co., Memphis, Tenn.	E. J. Bantle, Glastonbury..	6.53	6.56
Linseed Meal				
2232	"K&M" Brand 34%. Kelloggs & Miller, Amsterdam, N. Y.	E. J. Bantle, Glastonbury..	5.84	5.44
2506	Bisbee Brand 34%. Bisbee Linseed Co., Philadelphia, Pa.	John M. Herr, East Hartford	5.34	5.00

II. RAW MATERIALS CHIEFLY VALUABLE FOR PHOSPHORIC ACID

SUPERPHOSPHATE, ETC.

This raw material is one of basic importance in the fertilizer industry. It is made in this country by treating phosphate rock with sulphuric acid. The finished product contains 16 per cent of available phosphoric acid and a considerable amount of calcium sulphate (gypsum). If the gypsum is largely or entirely removed, the percentage of available phosphoric acid is correspondingly higher. Thus there are so-called "double" and "triple" superphosphates on the market which are products of the process just described. They contain from 40 to 50 per cent of available phosphoric acid.

The official (A. O. A. C.) definition of superphosphate is "the cured product obtained by mixing rock phosphate with sulphuric or phosphoric acid or with both". The grade should always be designated, as, for example, "16 per cent superphosphate", "32 per cent superphosphate", etc.

Precipitated bone phosphate, generally called "precipitated bone", is a by-product obtained in the manufacture of glue from bones. It contains about 40 per cent of "available" phosphoric acid. Three official samples were examined. They were guaranteed 38 per cent available phosphoric acid, and all substantially met or exceeded that claim.

Analyses of official samples of this group of materials are given in Table 3, p. 21. Guaranties were exceeded in all cases.

TABLE 3. ANALYSES OF SUPERPHOSPHATE, ETC.

Station No.	Manufacturer or wholesale dealer	Dealer or purchaser	Phosphoric acid		
			Citrate insoluble	Total	"Available"
			%	%	Guaranteed
2340	Superphosphate				
2273	AA 16% American Agricultural Chemical Co., North Weymouth, Mass.	C. W. Campbell Co., Groton	0.86	18.49	16.00
2166	Apothecaries Hall Co., Waterbury, Conn.	Factory, East Windsor	0.87	17.94	16.00
2346	Apothecaries Hall Co., Waterbury, Conn.	Camp Groton, Groton.	0.94	17.69	16.00
	Armour's Big Crop 16% Armour Fertilizer Co., New York City				
2101	Clark's 16% Associated Seed Growers, Inc., New Haven, Conn.	C. W. Campbell & Co., Westerly	0.25	17.83	16.00
1991	Baughphos, The Ideal, 16% The Baugh & Sons Co., Baltimore, Md.	Associated Seed Growers, Inc., Milford. .	0.92	17.00	16.00
1731	Berkshire 16% Berkshire Chemical Co., Bridgeport, Conn.	T. W. Ryan, Stratford	0.91	17.24	16.00
1958	16% Consolidated Rendering Co., Boston, Mass.	Newtown State Hospital, Newtown	0.39	17.18	16.00
2072	Eastern States 20% Eastern States Farmers' Exchange, Springfield, Mass.	Knowles-Lombard Co., Guilford	0.41	17.49	16.00
2277	Eastern States 40% Double Eastern States Farmers' Exchange, Springfield, Mass.	J. B. Lewis, Southington	2.02	22.22	20.00
2522	International 16% International Agricultural Corp., Boston, Mass.	Eastern States Branch, East Hartford ..	0.65	41.68	40.00
		H. E. Anderson, Danielson	0.51	17.70	16.00

TABLE 3. ANALYSES OF SUPERPHOSPHATE, ETC.—(Continued)

Station No.	Manufacturer or wholesale dealer	Dealer or purchaser	Phosphoric acid		
			Citrate Insoluble	Total	"Available"
			%	%	%
	Superphosphate—Continued				
2256	Old Deerfield 16% Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Rockville Grain & Coal Co., Rockville	1.14	17.54	16.00
2226	O&W. Olds & Whipple, Inc., Hartford, Conn.	Bloomfield Farmers' Exchange, Bloomfield	0.85	18.04	16.00
1972	Hubbard's, The Rogers & Hubbard Co., Portland, Conn.	Clinton Grain Co., Clinton	0.36	16.76	16.00
1995	16% I. P. Thomas & Son Co., Camden, N. J.	H. D. Peters, Hamden	1.02	17.69	16.00
1994	20% I. P. Thomas & Son Co., Camden, N. J.	H. D. Peters, Hamden	0.85	21.52	20.00
2379	V-C. Virginia-Carolina Chemical Co., Carteret, N. J.	Thomaston Supply Co., Thomaston	1.00	17.85	16.00
	Precipitated Bone				
2699	Apothecaries Hall Co., Waterbury, Conn.	Factory, East Windsor	1.63	42.10	38.00
2258	Eastern States, Eastern States Farmers Exchange, Springfield, Mass.	H. H. McKnight, Ellington	0.94	41.30	38.00
2512	O&W. Olds & Whipple, Inc., Hartford, Conn.	John M. Herr, East Hartford	1.40	42.12	38.00

III. RAW MATERIALS CHIEFLY VALUABLE FOR POTASH

Analyses of official samples of potash salts and of cottonhull ashes are given in Table 4, p. 24.

Guaranties were safely met except in one case, No. 1981.

Cottonhull ashes are used extensively as a source of potash in tobacco mixtures. Forty-three samples have been examined for purchasers.

No official samples of wood ashes were examined this year, but one sample was analyzed for a purchaser.

TABLE 4. ANALYSES OF POTASH SALTS, ETC.

Station No.	Manufacturer or Jobber	Sampled from stock of	Potash	
			Found	Guaranteed
	Muriate of Potash		%	%
2119	American Agricultural Chemical Co., North Weymouth, Mass.	Factory, West Haven	50.40	50.00
1981	Apothecaries Hall Co., Waterbury, Conn.	Yantic Grain Co., Yantic ..	47.73 ¹	50.00
1988	The Baugh & Sons Co., Baltimore, Md.	T. W. Ryan, Stratford	49.75	50.00
2115	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	50.50	50.00
2070	Eastern States Eastern States Farmers' Exchange, Springfield, Mass.	J. B. Lewis, Southington...	60.42	60.00
2001	48% I. P. Thomas & Son Co., Camden, N. J.	H. D. Peters, Hamden	50.12	48.00
	Sulphate of Potash			
2121	High Grade. American Agricultural Chemical Co., North Weymouth, Mass.	Factory, West Haven	49.37	48.00
2272	Apothecaries Hall Co., Waterbury, Conn.	Factory, East Windsor	49.30	48.00
2114	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	49.69	48.00
2328	Eastern States Eastern States Farmers' Exchange, Springfield, Mass.	Eastern States Branch, East Hartford	50.37	48.00
2250	Olds & Whipple, Inc., Hartford, Conn.	E. J. Bantle, Glastonbury..	49.69	48.00
2511	Olds & Whipple, Inc., Hartford, Conn.	John M. Herr, East Hartford	49.86	48.00
	Cottonhull Ashes			
2271	Apothecaries Hall Co., Waterbury, Conn.	Factory, East Windsor	32.86	25.00
2249	O&W. Olds & Whipple, Inc., Hartford, Conn.	E. J. Bantle, Glastonbury..	29.22	20.00
2508	O&W. Olds & Whipple, Inc., Hartford, Conn.	John M. Herr, East Hartford	30.56	20.00

¹Water insoluble material 3.14%

IV. RAW MATERIALS SUPPLYING NITROGEN AND POTASH

Analyses of four official samples of nitrate of potash and of nitrate of potash and soda are given in Table 5, p. 26.

Guaranties for both nitrogen and potash were fully met.
Eleven unofficial samples were examined for purchasers.

TABLE 5. ANALYSES OF NITRATE OF POTASH, ETC.

Station No.	Manufacturer	Sampled from stock of	Nitrogen		Potash	
			Found	Guaranteed	Found	Guaranteed
2257	Nitrate of Potash Eastern States Farmers' Exchange, Springfield, Mass.	H. H. McKnight, Ellington	13.00	13.00	45.13	44.00
2233	O&W. Olds & Whipple, Inc., Hartford, Conn.	E. J. Bantle, Glastonbury	13.16	13.00	44.26	44.00
2510	O&W. Olds & Whipple, Inc., Hartford, Conn.	John M. Herr, East Hartford	13.22	13.00	44.39	44.00
2523	Nitrate of Potash—Soda Chilean, Chilian Nitrate Sales Corp., New York City	Berkshire Chemical Co., Bridgeport	14.70	14.00	14.69	14.00

V. RAW MATERIALS SUPPLYING NITROGEN AND PHOSPHORIC ACID

Analyses of fish, tankage and bone manures are given in Tables 6, 7 and 8 respectively, pp. 28, 29, and 30.

No notable deficiencies were found in samples of dry ground fish. Sample 2409, tankage, was 0.48 per cent below guaranty in nitrogen. Sample of ground bone 2011 was considerably under guaranty in phosphoric acid but it contained nearly twice as much nitrogen as was claimed.

Microscopic examination showed no evidence of mineral sources of nitrogen in any of the materials of this group.

TABLE 6. ANALYSES OF DRY GROUND FISH

Station No.	Manufacturer or wholesale dealer	Sampled from stock of	Nitrogen		Phosphoric acid	
			Total found	Total guaranteed	Total found	Total guaranteed
2230	Menhaden. American Agricultural Chemical Co., North Weymouth, Mass.	E. J. Bantle, Glastonbury	%	%	%	%
2485	American Agricultural Chemical Co., North Weymouth, Mass.	Factory, West Haven	9.34	9.46	7.09	5.00
2270	Apothecaries Hall Co., Waterbury, Conn. . .	Factory, East Windsor	9.50	9.00	5.54	4.00
1992	Japanese Sardine Meal. The Baugh & Sons Co., Baltimore, Md.	T. W. Ryan, Stratford	9.51	9.46	6.36	5.00
2128	Berkshire Menhaden. Berkshire Chemical Co., Bridgeport, Conn.	Factory, Bridgeport	9.22	9.00	6.43	4.00
2069	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	J. B. Lewis, Southington	9.50	9.46	6.81	5.00
2330	O&W. Olds & Whipple, Inc., Hartford, Conn.	Factory, East Hartford	9.38	9.00	5.94	5.00
2507	O&W. Olds & Whipple, Inc., Hartford, Conn.	John M. Herr, East Hartford	9.44	9.00	6.74	5.00
			9.48	9.00	5.80	5.00

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TABLE 7. ANALYSES OF TANKAGE AND SIMILAR MATERIALS

Station No.	Manufacturer or wholesale dealer	Sampled from stock of	Nitrogen		Phosphoric acid		Mechanical analysis		Station No.
			Total found	Total guaranteed	Total found	Total guaranteed	Finer than 1-50 inch	Coarser than 1-50 inch	
2008	Bone and Meat. Apothecaries Hall Co., Waterbury, Conn.	R. W. Hine, Cheshire	%	%	%	%	%	%	
2409	Apothecaries Hall Co., Waterbury, Conn. . .	J. B. McArdle, Greenwich ...	3.70	3.70	23.34	21.00	45.5	54.5	2008
1993	Ground. The Baugh and Sons Co., Baltimore, Md.	T. W. Ryan, Stratford	9.52	10.00	8.56	6.00	34.6	65.4	2409
2129	Berkshire Ground. Berkshire Chemical Co., Bridgeport, Conn.	Factory, Bridgeport	9.85	9.80	6.56	6.00	57.6	42.4	1993
2113	Ground. Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie, New Haven ..	9.66	9.80	8.60	6.00	42.0	58.0	2129
2514	Ground. Consolidated Rendering Co., Boston, Mass.	Rand and Christensen, Wilson	9.14	7.41	10.19	9.15	37.6	62.4	2113
			9.10	7.41	10.59	9.15	40.8	59.2	2514

Tankage and Similar Materials

TABLE 8. ANALYSES OF GROUND BONE

Station No.	Manufacturer and brand	Sampled from stock of	Nitrogen		Phosphoric acid		Mechanical analysis		Station No.
			Total found	Total guaranteed	Total found	Total guaranteed	Finer than 1-50 inch	Coarser than 1-50 inch	
2079	Fine Ground. American Agricultural Chemical Co., North Weymouth, Mass.	Bristol Grain & Supply Co., Bristol	%	%	%	%	%	%	2079
2007	Apothecaries Hall Co., Waterbury, Conn.	R. W. Hine, Cheshire	2.58	2.47	25.64	23.00	53.1	46.9	2007
2440	Apothecaries Hall Co., Waterbury, Conn.	Chas. Templeton, Waterbury	3.86	3.70	22.65	21.00	35.7	64.3	2440
2459	Armour's. Armour Fertilizer Works, New York City	Colt's Dock, Hartford	2.47	2.47	24.58	23.00	58.5	41.5	2459
2153	Baugh's Pure Steamed. The Baugh & Sons Co., Baltimore, Md.	Hamden Lehigh Coal Co., Hamden	2.56	2.47	25.43	23.00	55.4	44.6	2153
2154	Baugh's Raw Bone. The Baugh & Sons Co., Baltimore, Md.	Hamden Lehigh Coal Co., Hamden	2.59	2.47	26.54	23.00	50.8	49.2	2154
1959	Berkshire Fine Ground. Berkshire Chemical Co., Bridgeport, Conn.	Knowles-Lombard Co., Guilford	3.85	3.70	21.99	21.50	36.6	63.4	1959
2011	Corenco Ground. Consolidated Rendering Co., Boston, Mass.	Cheshire Reformatory, Cheshire	2.37	2.05	29.30	25.00	54.6	45.4	2011
2329	Eastern States Ground Steamed. Eastern States Farmers' Exchange, Springfield, Mass.	Eastern States Branch, East Hartford	4.80	2.47	18.88	23.00	35.2	64.8	2329
2404	Facsy and Besthoff, Inc., New York City	Silliman Hardware Co., New Canaan	2.68	2.50	24.32	23.00	59.8	40.2	2404
			2.14	2.25	29.90	27.00	54.6	44.4	

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TABLE 8. ANALYSES OF GROUND BONE—(Concluded)

Station No.	Manufacturer and brand	Sampled from stock of	Nitrogen		Phosphoric acid		Mechanical analysis		Station No.
			Total found	Total guaranteed	Total found	Total guaranteed	Finer than 1-50 inch	Coarser than 1-50 inch	
2223	O&W. Olds & Whipple, Inc., Hartford, Conn.	Bloomfield Farmers' Exchange, Bloomfield	%	%	%	%	%	%	2223
2068	Fine Ground. The Rogers and Hubbard Co., Portland, Conn.	C. A. Cowles, Plantsville	2.55	2.47	27.20	22.00	60.7	39.3	2068
2390	Hubbard's Pure Raw Knuckle Bone Flour. The Rogers and Hubbard Co., Portland, Conn.	The Wadhams Co., Litchfield	2.86	2.47	26.75	23.00	49.1	50.9	2390
2351	Strictly Pure Fine. The Rogers and Hubbard Co., Portland, Conn.	Norwich Grain Co., Norwich	3.98	3.70	26.12	24.70	89.4	10.6	2351
2229	Shoemaker's "Swift-Sure" Fine Ground. M. L. Shoemaker and Co., Philadelphia, Pa.	E. J. Bantle, Glastonbury ...	4.40	3.70	23.46	20.00	42.6	57.4	2229
2135	Sawco Bone Fertilizer. Stumpp and Walter Co., New York City	Stumpp and Walter Co., Stamford	2.74	2.47	24.00	23.00	42.5	57.5	2135
2254	Swift and Co., Fertilizer Works, Baltimore, Md.	F. T. Blish Hardware Co., Manchester	2.57	2.47	28.24	24.00	35.3	64.7	2254
2002	Pure Ground. I. P. Thomas & Son Co., Camden, N. J.	H. D. Peters, Hamden	2.86	2.47	26.00	23.00	66.3	33.7	2002
			2.60	2.45	23.81	23.00	57.0	43.0	

Ground Bone

VI. MIXED FERTILIZERS

Analyses of 201 official samples of mixed fertilizers are given in Table 9, pp. 34 to 49.

In summary this table shows the following facts:

Total number of samples	201
Samples deficient in:	
one item	37
two items	6
three items	43
Percentage of samples meeting guaranties in all respects	71
Total guaranties made	600
Guaranties not met:	
nitrogen	27
phosphoric acid	5
potash	17
Percentage of guaranties met	92

There are only two samples in which deficiencies represented more than \$1.00 per ton in commercial value. These were:

Baugh's Special Top Dresser 7-6-6, No. 2472
Swift's Special Golf Fertilizer 12-6-4, No. 2521

Two other samples of Baugh's Special Top Dresser 7-6-6 were analyzed. One showed a deficiency in nitrogen only, and the other met the guaranty in all respects. No second sample of Swift's 12-6-4 could be secured.

Failure to meet guaranties in nitrogen was the most common deficiency. The recently modified method for potash was employed as a regular procedure this year, and used in all doubtful cases last year. As compared with the inspections of 1933 and 1934, deficiencies in potash are in about the same proportion by the new method as by the old. The revised method accounts more accurately for the potash incorporated in mixtures, but apparently mixtures are still formulated with too little allowance for a margin of safety.

The character and quality of the organic nitrogen in fertilizers is judged by laboratory methods that determine the so-called "activity" of the water-insoluble organic nitrogen. There are two methods and both should be applied before pronouncing the organic nitrogen of inferior quality. Values less than 50 per cent by the alkaline permanganate method, and less than 80 per cent by the neutral permanganate method, indicate inferior sources of organic nitrogen. In seven samples, values somewhat less than these have been obtained; however, the water-soluble nitrogen plus the active water-insoluble organic nitrogen has practically equalled or exceeded the guaranty in all cases and no question of quality has been raised.

Water-soluble magnesium has not been claimed in any mixtures registered in this State and therefore this constituent has not been determined as a matter of routine procedure.

The Association of Official Agricultural Chemists has under consideration the question of acid- or non-acid-forming character of fertilizer mixtures. A tentative method has been adopted but certain features of the

procedure are still being investigated. We have collaborated with the A. O. A. C. referee in studies of this method but have not yet adopted it as a part of regular laboratory examination for inspection purposes.

Armour Fertilizer Works called for a portion of our No. 2347, their 5-8-7 mixture, and reported 5.02 per cent nitrogen as compared with our figure of 4.81 per cent. A new sub-sample of our original field sample was prepared and 4.80 per cent of nitrogen was found. This was the highest of several determinations, the spread between which was 0.12 per cent.

Analyses are reported to the manufacturer and to the purchaser whose stock is sampled in all cases; and portions of our laboratory sub-sample are supplied to the manufacturer for checking purposes whenever demanded.

Our law requires that not less than 5 per cent of bags in a lot or shipment be sampled in inspection and it is our practice to sample 10 per cent of the entire lot.

The distribution of chemical deficiencies found this season is given in Table 10, p. 50.

SPECIAL AND HOME MIXTURES

Analyses of home mixtures and mixtures made according to formulas for special purposes are given in Table 11, p. 52. They are largely for tobacco.

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
Acme Guano Co., Baltimore, Md.		
2111	Acme 2-12-2	Milford.....
2104	Acme 3-10-6	Milford.....
2373	Acme 4-8-4	Middletown.....
2374	Acme 5-8-7	Middletown.....
American Agricultural Chemical Co., North Weymouth, Mass.		
2349	AA Complete Manure 10% Potash 4-8-10	Norwich.....
2184	AA General Crop Fertilizer 2-10-2	Meriden.....
1977	AA Monarch Fertilizer 4-8-4	Colchester.....
2360	AA Peerless Fertilizer 4-8-7	Suffield.....
1975	AA Potato and Vegetable Fertilizer 5-8-7	Colchester.....
2473	AA Potato and Vegetable Fertilizer 5-8-7	Eastford.....
2413	AA Prolific 10% Potash Fertilizer 2-8-10	No. Branford.....
2487	AA Tobacco Starter 5-3-15	West Haven.....
1974	AA Top Dresser 7-6-6	Colchester.....
2185	Agrico for Corn 3-10-6	Meriden.....
2397	Agrico for Corn 3-10-6	New Milford.....
2450	Agrico for Gardens 5-8-7	Simsbury.....
1984	Agrico for Lawns, Trees and Shrubs 7-6-6	Norwich.....
2080	Agrico for New England 4-8-10	Bristol.....
2186	Agrico for Pastures and Top Dressing 7-6-6	Meriden.....
2183	Agrico for Potatoes and Vegetables 5-8-7	Meriden.....
2484	Agrico for Tobacco 6-3-6	West Haven.....
2354	Agrico for Truck 5-10-5	Lebanon.....
2353	Bradley's XL Fertilizer 3-10-4	Colchester.....
2486	Double A Tobacco Fertilizer 5-3-5	West Haven.....
2359	Sanderson's Formula B 4-8-7	Suffield.....
American Cyanamid Co., New York City		
2071	"Ammo-Phos" 11-48-0	Southington.....
Apothecaries Hall Co., Waterbury, Conn.		
2164	Liberty Corn 2-10-2	Groton.....
2443	Liberty Fish, Bone and Potash 3-10-4	Waterbury.....
2375	Liberty High Grade Corn 2-12-4	Middlefield Center.....
1976	Liberty High Grade Market Gardeners 5-8-7	Yantic.....
2517	Liberty High Grade Tobacco Manure 6-3-7	East Windsor.....
2502	Liberty High Grade Tobacco Manure 7-3-7	Rockville.....
1979	Liberty Market Gardeners Special 4-8-4	Yantic.....

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Station No.	Nitrogen				Phosphoric acid			Potash		Station No.	
	In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Cl rate-i- soluble	Total	So-called Available	As muriate		Total
	%	%	%	%	%	%	%	%	%	%	
	0.00	1.48	0.29	0.25	2.02	0.64	12.76	12.12	1.38	2.48	2111
	0.13	2.60	0.18	0.21	3.12	0.46	10.69	10.23	4.44	5.93	2104
	0.00	3.20	0.37	0.38	3.95	0.25	8.85	8.60	2.47	3.84	2373
	0.19	4.52	0.40	0.26	5.37	0.37	8.66	8.29	4.25	6.80	2374
	0.69	2.68	0.18	0.37	3.92	0.41	8.56	8.15	9.98	9.98	2349
	0.19	1.48	0.16	0.32	2.15	0.56	11.00	10.44	2.35	2.35	2184
	0.29	3.00	0.16	0.33	3.78	0.29	8.32	8.03	3.59	3.59	1977
	0.24	3.06	0.18	0.40	3.88	0.61	8.74	8.13	6.51	6.51	2360
	0.29	4.00	0.24	0.51	5.04	0.48	8.71	8.23	7.00	7.00	1975
	0.42	3.98	0.14	0.48	5.02	0.50	8.82	8.32	7.06	7.06	2473
	0.00	1.76	0.02	0.24	2.02	0.21	8.36	8.15	9.79	9.79	2413
	0.79	2.80	0.80	0.76	5.15	0.54	6.44	5.90	1.14	15.64	2487
	0.00	6.56	0.20	0.34	7.10	0.35	6.65	6.30	6.11	6.11	1974
	0.00	2.36	0.36	0.28	3.00	1.00	11.00	10.00	6.07	6.07	2185
	0.00	2.40	0.31	0.29	3.00	0.99	11.09	10.10	6.09	6.09	2397
	0.44	3.96	0.10	0.46	4.96	0.49	8.66	8.17	6.94	6.94	2450
	0.70	5.76	0.24	0.39	7.09	0.36	6.60	6.24	6.24	6.24	1984
	0.67	2.52	0.28	0.33	3.80	0.46	8.58	8.12	9.86	9.86	2080
	0.83	6.38	0.10	0.33	7.64	0.35	7.09	6.74	6.01	6.01	2186
	0.29	4.00	0.28	0.45	5.02	0.65	8.66	8.01	7.02	7.02	2183
	1.53	1.60	0.56	2.35	6.04	0.19	3.70	3.51	0.60	7.02	2484
	0.75	4.20	0.16	0.07	5.18	0.68	10.95	10.27	5.07	5.07	2354
	0.66	2.68	0.18	0.22	3.74	0.61	11.01	10.40	4.08	4.08	2353
	0.75	1.40	2.37	0.76	5.28	0.06	3.59	3.53	0.43	5.62	2486
	0.32	3.12	0.12	0.44	4.00	0.56	8.72	8.16	0.72	7.29	2359
	0.00	10.44	0.13	0.65	11.22	1.10	51.38	50.28	.....	.....	2071
	0.13	1.12	0.86	0.67	2.78	0.69	12.01	11.32	4.87	4.87	2164
	0.93	1.20	0.44	0.43	3.00	0.73	11.02	10.29	5.45	5.45	2443
	0.00	1.42	0.59	0.49	2.50	1.22	13.80	12.58	5.92	5.92	2375
	1.43	2.16	0.84	0.83	5.25	0.31	9.84	9.53	7.05	7.05	1976
	0.74	0.02	0.80	4.72	6.28	0.24	5.41	5.17	0.96	8.15	2517
	1.45	0.02	0.88	5.13	7.48	0.78	5.89	5.11	0.92	9.29	2502
	1.08	2.20	0.40	0.60	4.28	0.13	9.17	9.04	5.10	5.10	1979

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
2457	Liberty Onion Special (Potash as Sulphate) 4-8-7	East Windsor
1980	Liberty Potato and General Crops 4-8-10	Yantic
2442	Liberty Potato and Market Gardeners (Potash as Muriate) 4-8-7	Waterbury
2444	Liberty Special Fertilizer for Fruit 7-8-6	Waterbury
2269	Liberty Special Fertilizer for Lawns, Gardens, etc., 4-4-0	East Windsor
2408	Liberty Special Fertilizer for Lawns, Gardens, etc., 4-4-0	Greenwich
2518	Liberty Tobacco Fertilizer 6-3-6	East Windsor
2543	Liberty Tobacco Starter 4-10-0	East Windsor
2698	Liberty Tobacco Starter (with potash) 5-4-15	East Windsor
1978	Liberty Top Dresser for Grass and Grain, 8-8-8	Yantic
2445	Liberty Tree and Shrub Food 10-8-8	Waterbury
Armour Fertilizer Works, New York City		
2376	Armour's Big Crop Fertilizer 2-10-2	Plantsville
2447	Armour's Big Crop Fertilizer 3-12-6	Plainville
2266	Armour's Big Crop Fertilizer 4-8-4	Thompsonville
2267	Armour's Big Crop Fertilizer 4-8-7	Thompsonville
2460	Armour's Big Crop Fertilizer 4-8-10	Hartford
2446	Armour's Big Crop Fertilizer 4-16-4	Plainville
2347	Armour's Big Crop Fertilizer 5-8-7	Westerly
2461	Armour's Big Crop Fertilizer 7-6-6	Hartford
2513	Armour's Big Crop Fertilizer 8-16-20	Buckland
2458	Armour's Big Crop Tobacco Special 6-3-6	Hartford
Associated Seed Growers, Inc., New Haven, Conn.		
2112	Clark's Mixture for General Use 4-8-4	Milford
2100	Clark's Standard 4-8-7	Milford
2103	Clark's Tip Top Brand 5-8-7	Milford
F. A. Bartlett Tree Expert Co., Stamford, Conn.		
2146	Bartlett Green Tree Food 6-7-4	Stamford
The Baugh & Sons Co., Baltimore, Md.		
2155	Baugh's Animal Base and Potash Compound 2-10-2	Hamden

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

In nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	
2.11	0.96	0.48	1.22	4.77	0.60	9.74	9.14	0.39	8.24	2457
0.71	2.64	0.54	0.41	4.30	0.60	9.43	8.83	10.71	10.71	1980
0.66	2.56	0.44	0.42	4.08	0.26	8.66	8.40	10.89	10.89	2442
4.22	2.58	0.16	0.38	7.34	0.22	8.57	8.35	5.66	5.66	2444
0.00	0.08	0.24	4.48	4.80	4.46	10.10	5.64	....	....	2269
0.00	0.04	0.32	4.48	4.84	3.46	9.69	6.23	....	....	2408
0.70	0.00	1.44	4.20	6.34	0.24	5.66	5.42	1.06	6.88	2518
1.15	1.20	0.60	1.91	4.86	1.25	12.35	11.10	....	....	2543
2.72	0.00	0.50	2.30	5.52	0.10	5.64	5.54	0.84	15.80	2698
2.13	5.64	0.20	0.19	8.16	0.14	9.10	8.96	10.06	10.06	1978
1.29	8.76	0.25	0.23	10.53	0.07	8.82	8.75	9.78	9.78	2445
Armour Fertilizer Works, New York City										
0.00	1.44	0.16	0.46	2.06	1.23	11.79	10.56	2.09	2.09	2376
0.55	2.00	0.00	0.53	3.08	0.69	12.85	12.16	6.17	6.17	2447
0.47	2.80	0.12	0.55	3.94	0.51	8.41	7.90	4.03	4.03	2266
0.79	2.24	0.16	0.66	3.85	0.67	8.56	7.89	6.47	6.86	2267
0.76	2.28	0.08	0.64	3.76	0.36	8.70	8.34	10.36	10.36	2460
0.49	3.48	0.00	0.21	4.18	0.85	17.29	16.44	4.13	4.13	2446
0.82	3.20	0.12	0.67	4.81	0.77	9.73	8.96	6.76	7.05	2347
0.51	5.52	0.16	0.55	6.74	0.30	6.62	6.32	5.86	6.36	2461
1.02	7.14	0.00	0.16	8.32	0.29	18.50	18.21	18.56	19.21	2513
1.54	0.20	1.08	3.26	6.08	0.15	3.76	3.61	0.23	7.34	2458
Associated Seed Growers, Inc., New Haven, Conn.										
0.11	3.20	0.27	0.45	4.03	0.25	8.85	8.60	2.71	4.02	2112
0.00	3.36	0.48	0.25	4.09	0.21	8.45	8.24	5.04	6.86	2100
0.12	4.44	0.32	0.30	5.18	0.38	9.05	8.67	4.64	6.84	2103
F. A. Bartlett Tree Expert Co., Stamford, Conn.										
0.00	5.22	0.12	1.04	6.38	2.30	10.62	8.32	4.84	4.84	2146
The Baugh & Sons Co., Baltimore, Md.										
0.35	1.04	0.56	0.33	2.28	0.99	11.22	10.23	2.43	2.43	2155

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
2150	Baugh's Complete Animal Base Fertilizer 3-8-4	Hamden
2147	Baugh's Fish, Bone and Potash 4-8-4	Hamden
2338	Baugh's Fish, Bone and Potash 4-8-4	Guilford
2881	Baugh's Fish, Bone and Potash 4-8-4	Hamden
2152	Baugh's Half Century Perfection Brand 4-8-7	Hamden
2148	Baugh's Peruvian Guano Substitute 5-8-7	Orange
2149	Baugh's Special Top Dresser 7-6-6	Hamden
2472	Baugh's Special Top Dresser 7-6-6	Eastford
2882	Baugh's Special Top Dresser 7-6-6	Hamden
2151	Baugh's 3/4 Century Perfection Brand 3-10-6	Hamden
2156	Baugh's Truckers Favorite 5-10-5	Hamden
Berkshire Chemical Co., Bridgeport, Conn.		
2004	Berkshire 3-10-6 Fertilizer	Hamden
2131	Berkshire Complete Fertilizer 2-12-2	Norwalk
2524	Berkshire Complete Tobacco Fertilizer 5-3-5	Bridgeport
1730	Berkshire Farmers' Favorite 5-10-5	Newtown
2122	Berkshire Golf Green Fertilizer 8-5-2	Bridgeport
2130	Berkshire Grass Special Fertilizer 6-6-5	Norwalk
2500	Berkshire High Grade Tobacco Fertilizer 6-3-6	Manchester
1954	Berkshire Long Island Special Fertilizer 4-8-7	Guilford
2006	Berkshire Market Garden Fertilizer 4-8-4	Hamden
1953	Berkshire Potato and Garden Special Fertilizer 5-8-7	Guilford
1732	Berkshire 7-6-6 Fertilizer	Newtown
2501	Berkshire Tobacco Special Fertilizer 7-3-7	Manchester
2410	Berkshire Truck Fertilizer 4-8-5	Bridgeport
Consolidated Rendering Co., Boston, Mass.		
2400	Corenco 2-10-2 Bone Brand	Danbury
2355	Corenco 3-10-4 Animal Brand	Lebanon
2449	Corenco 3-10-4 Animal Brand	Unionville
1957	Corenco 4-8-4 Corn and Vegetable	Guilford
2341	Corenco 4-8-4 Corn and Vegetable	Groton
1955	Corenco 4-8-7 Market Garden	Guilford
2181	Corenco 4-8-10 Potato Grower	Wallingford
2357	Corenco 5-5-5 Lawn and Shrub Fertilizer	Thompsonville
1956	Corenco 5-8-7 General Crop Manure	Guilford
2439	Corenco 5-8-10 Peerless Potato	West Cheshire

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Station No.	Nitrogen				Phosphoric acid			Potash		Station No.	
	In its	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Ci rate insoluble	Total	So-called "Available"	As mu late		al
	%	%	%	%	%	%	%	%	%		%
	0.61	1.76	0.44	0.43	3.24	0.61	8.81	8.20	4.06	4.06	2150
	0.78	2.06	0.56	0.52	3.92	0.65	8.80	8.15	3.88	3.88	2147
	0.81	2.17	0.59	0.50	4.07	0.54	8.63	8.09	3.60	3.60	2338
	0.50	2.10	0.73	0.61	3.94	0.66	9.73	9.07	4.30	4.30	2881
	0.63	2.24	0.60	0.75	4.22	0.62	8.97	8.35	7.15	7.15	2152
	0.90	2.68	0.80	0.75	5.13	0.63	8.88	8.25	7.52	7.52	2148
	0.54	4.48	1.04	0.45	6.51	0.53	7.66	7.13	7.26	7.26	2149
	0.87	4.62	0.38	0.35	6.22	0.41	7.32	6.91	5.52	5.52	2472
	0.71	4.56	1.29	0.44	7.00	0.39	6.72	6.33	6.68	6.68	2882
	0.97	1.40	0.24	0.43	3.04	0.64	11.75	11.11	6.14	6.14	2151
	0.63	2.26	1.34	0.77	5.00	0.81	11.10	10.29	5.06	5.30	2156
Berkshire Chemical Co., Bridgeport, Conn.											
	0.29	1.96	0.58	0.51	3.34	0.50	10.51	10.01	7.16	7.16	2004
	0.00	1.18	0.68	0.32	2.18	0.45	13.00	12.55	2.32	2.32	2131
	1.52	0.00	0.64	2.58	4.74	0.25	4.17	3.92	0.54	6.09	2524
	1.03	2.26	0.77	1.20	5.26	0.57	10.41	9.84	....	4.44	1730
	0.00	1.84	0.94	5.15	7.93	1.62	8.00	6.38	2.79	2.79	2122
	0.18	4.70	0.36	0.78	6.02	0.26	7.11	6.85	5.90	6.31	2130
	0.88	0.28	1.40	3.50	6.06	0.36	4.69	4.33	1.13	7.35	2500
	0.39	2.44	0.68	0.75	4.26	0.77	8.83	8.06	6.81	6.81	1954
	0.31	2.24	0.48	0.75	3.78	0.94	9.11	8.17	4.17	4.17	2006
	0.88	2.80	0.40	0.75	4.83	0.35	8.51	8.16	6.96	6.96	1953
	2.79	2.04	0.50	1.62	6.95	0.43	7.30	6.87	....	6.50	1732
	1.01	0.58	1.90	3.28	6.77	0.30	4.61	4.31	0.66	8.93	2501
	0.35	2.26	0.62	0.80	4.03	0.92	9.11	8.19	4.78	4.78	2410
Consolidated Rendering Co., Boston, Mass.											
	0.95	0.08	0.92	0.23	2.18	0.44	11.21	10.77	2.22	2.22	2400
	0.75	1.46	0.60	0.19	3.00	0.41	11.16	10.75	4.32	4.32	2355
	1.06	1.32	0.60	0.18	3.16	0.43	10.95	10.52	3.81	4.18	2449
	0.94	2.08	0.79	0.23	4.04	0.24	8.41	8.17	4.07	4.07	1957
	0.91	2.00	0.74	0.19	3.84	0.26	9.22	8.96	3.93	3.93	2341
	0.90	2.08	0.76	0.18	3.92	0.32	8.76	8.44	6.89	6.89	1955
	0.97	2.08	0.76	0.22	4.03	0.10	8.58	8.48	9.96	9.96	2181
	0.00	2.20	0.94	1.98	5.12	0.79	7.02	6.23	5.04	5.35	2357
	0.97	2.88	0.66	0.45	4.96	0.46	8.90	8.44	6.67	6.67	1956
	1.07	3.20	0.54	0.26	5.07	0.21	8.86	8.65	10.19	10.19	2439

TABLE 9. ANALYSES OF MIXED FERTILIZER

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Station No.	Manufacturer and brand	Place of sampling
2971	Corenco 5-10-5 Super Truck	Ellington.....
2488	Corenco 6-3-6 Special Tobacco Grower	New Haven.....
2503	Corenco 6-3-6 Special Tobacco Grower	Somers.....
2495	Corenco 7-3-7 Super Tobacco Grower	Buckland.....
2009	Corenco 7-6-6 Complete Fruit and Top Dressing	West Cheshire.....
Davey Tree Expert Co., Kent, Ohio		
2406	Davey Tree Food 10-3-3	Old Greenwich..
Eastern States Farmers' Exchange, Springfield, Mass.		
2189	Eastern States 4-8-8	Meriden.....
2276	Eastern States 4-12-4	East Hartford.....
2399	Eastern States 4-16-20	New Milford.....
2493	Eastern States 5-5-15 Tobacco	East Hartford.....
2187	Eastern States 6-8-6	Meriden.....
2494	Eastern States 8-4-8 Tobacco	East Hartford.....
2324	Eastern States 8-12-20	East Hartford.....
2073	Eastern States 8-16-16	Southington.....
2469	Eastern States 8-16-16 Low Chlorine Special	East Hartford.....
2275	Eastern States 8-20-12	East Hartford.....
2188	Eastern States 8-24-8	Meriden.....
2492	Eastern States 10-5-10 Tobacco	East Hartford.....
2398	Eastern States 12-4-4	New Milford.....
2451	Eastern States 12-16-12	Granby.....
Paul M. Hubbard & Co., Bristol, Conn.		
2084	Hubbard's Special Lawn Food 10-6-4	Bristol.....
International Agricultural Corp., Boston, Mass.		
2078	Caribee Market Garden Fertilizer 5-10-10	Plainville.....
2076	International 4-8-4	Plainville.....
2075	International 5-8-7	Plainville.....
2077	International 7-6-6	Plainville.....
2476	International 8-16-14	Norwich.....
Leary, The Florist, Waterbury, Conn.		
2278	All-Grow 4-8-5	Waterbury.....

In nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	
0.89	3.08	0.92	0.18	5.07	0.33	9.90	9.57 ¹	5.05	5.05	2971
1.22	0.24	1.26	3.61	6.33	0.15	4.92	4.77	0.62	7.07	2488
1.14	0.10	1.28	3.54	6.06	0.09	5.05	4.96	0.58	7.36	2503
1.49	0.48	1.62	3.54	7.13	0.10	4.87	4.77	0.43	8.43	2495
0.81	5.04	0.66	0.38	6.89	0.21	6.90	6.69	5.89	6.12	2009
0.96	6.60	0.20	2.32	10.08	0.35	3.95	3.60	1.94	3.65	2406
1.07	2.72	0.06	0.41	4.26	0.34	8.70	8.36	7.74	7.74	2189
1.03	2.94	0.10	0.26	4.33	0.59	13.45	12.86	4.16	4.69	2276
1.10	2.84	0.20	0.26	4.40	0.23	16.75	16.52	21.57	22.20	2399
2.60	0.40	1.14	2.36	6.50	0.16	7.07	6.91	1.01	15.46	2493
1.83	4.14	0.19	0.29	6.45	0.27	9.00	8.73	6.40	6.84	2187
2.45	0.52	2.96	3.01	8.94	0.10	5.55	5.45	0.35	9.96	2494
2.28	6.36	0.12	0.30	9.06	0.05	11.74	11.69	15.44	20.42	2324
1.91	6.12	0.04	0.17	8.24	0.15	15.86	15.71	16.04	18.54	2073
1.72	5.90	0.14	0.28	8.04	0.09	15.57	15.48	0.90	17.85	2469
2.25	5.36	0.22	0.31	8.14	0.26	20.63	20.37	9.57	12.66	2275
2.59	4.88	0.10	0.23	7.80	0.40	25.05	24.65	7.33	7.33	2188
2.94	0.44	4.68	2.52	10.58	0.10	5.89	5.79	0.35	12.17	2492
3.91	8.04	0.20	0.29	12.44	0.11	4.60	4.49	4.18	4.76	2398
4.22	8.00	0.16	0.26	12.64	0.26	14.71	14.45	0.37	14.06	2451
0.00	6.24	0.32	4.02	10.58	0.55	7.51	6.96	5.25	5.25	2084
1.92	1.28	0.44	1.22	4.86	0.24	11.00	10.76	3.48	10.04	2078
0.72	2.72	0.52	0.18	4.14	0.25	8.21	7.96	3.88	3.88	2076
0.83	3.32	0.58	0.27	5.00	0.22	8.25	8.03	6.86	6.86	2075
0.69	5.16	0.60	0.49	6.94	0.24	6.50	6.26	5.92	5.92	2077
1.17	6.48	0.24	0.18	8.07	0.36	16.39	16.03	9.24	14.13	2476
0.23	2.96	0.44	0.25	3.88	0.45	9.05	8.60	5.08	5.08	2278

¹ Moisture 9.82%.

TABLE 9. ANALYSES OF MIXED FERTILIZER

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Station No.	Manufacturer and brand	Place of sampling
Old Deerfield Fertilizer Co., So. Deerfield, Mass.		
2454	Old Deerfield 5-8-12 (Tobacco Starter)	Somers.....
2515	Old Deerfield 6-3-7 (Complete Tobacco)	Poquonock.....
2081	Valley Brand 2-10-2	Bristol.....
2082	Valley Brand 4-8-4	Bristol.....
2455	Valley Brand 4-8-4	Somers.....
2456	Valley Brand 4-8-7	Somers.....
2255	Valley Brand 5-8-7	Rockville.....
Olds & Whipple, Inc., Hartford, Conn.		
2462	Luxura 5-8-6	East Hartford.....
2505	O&W Blue Label Tobacco Fertilizer (Potash derived from Cottonhull Ashes) 6-3-5	Windsor Locks.....
2470	O&W Blue Label Tobacco Fertilizer (Potash derived from Cottonhull Ashes) 6-3-6	So. Windsor.....
2453	O&W Blue Label Tobacco Fertilizer 6-3-6	Suffield.....
2452	O&W Complete Tobacco Fertilizer 5-3-5	Suffield.....
2222	O&W Corn Special Fertilizer 3-10-4	Bloomfield.....
2467	O&W High Grade Tobacco Starter and Potash Compound 5-4-15	East Hartford.....
2225	O&W Market Garden Fertilizer 4-8-4	Bloomfield.....
2402	O&W Potato and General Purpose Fertilizer 4-8-7	Bloomfield.....
2403	O&W Potato and General Purpose Fertilizer 5-8-7	Manchester.....
2224	O&W Top Dressing and Grass Fertilizer 8-6-6	Bloomfield.....
2343	Wilcox Corn Special 3-10-4	Old Mystic.....
2344	Wilcox Market Garden Fertilizer 4-8-4	Old Mystic.....
2342	Wilcox Potato and General Purpose Fertilizer 4-8-7	Old Mystic.....
2345	Wilcox Potato and General Purpose Fertilizer 5-8-7	Old Mystic.....
Outpost Nurseries, Inc., Ridgefield, Conn.		
2401	Outpost Plant Food 8-5-2 ¹	Ridgefield.....
2883	Outpost Plant Food 8-5-2 ²	Ridgefield.....
Plantspur Products Co., Ridgefield, N. J.		
2490	Plantspur Fertilizer 3-3-2	New Haven.....

In nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	%
1.74	0.20	0.94	2.52	5.40	0.35	9.10	8.75	1.20	12.81	2454
0.83	0.04	1.80	3.71	6.38	0.22	4.84	4.62	0.90	8.29	2515
0.67	0.76	0.60	0.14	2.17	0.26	10.63	10.37	2.18	2.60	2081
1.87	1.70	0.66	0.13	4.36	0.18	8.87	8.69	4.45	4.45	2082
1.63	1.72	0.64	0.13	4.12	0.15	8.89	8.74	4.61	4.61	2455
1.62	1.88	0.50	0.11	4.11	0.16	8.43	8.27	6.48	6.48	2456
1.71	2.20	1.08	0.11	5.10	0.50	8.98	8.48	7.52	7.52	2255
0.67	2.40	0.26	2.11	5.44	2.02	12.32	10.30	0.65	6.53	2462
1.13	0.00	0.68	4.32	6.13	0.34	4.20	3.86	0.66	5.72	2505
1.22	0.06	1.16	3.87	6.31	0.22	4.53	4.31	0.56	6.56	2470
1.11	0.08	0.66	4.23	6.08	0.19	4.03	3.84	0.35	6.88	2453
1.05	0.04	0.70	3.29	5.06	0.16	4.03	3.87	0.53	6.20	2452
0.38	2.10	0.18	0.59	3.25	0.56	10.79	10.23	4.34	4.34	2222
2.21	0.16	0.84	1.55	4.76	0.36	5.06	4.70	1.78	16.75	2467
1.03	2.24	0.12	0.65	4.04	0.55	8.86	8.31	4.35	4.35	2225
0.60	2.74	0.26	0.64	4.24	0.17	8.82	8.65	7.57	7.57	2402
0.83	3.42	0.22	0.79	5.26	0.45	8.99	8.54	7.33	7.33	2403
4.33	3.36	0.01	0.42	8.12	0.29	7.04	6.75	6.30	6.30	2224
0.52	2.06	0.22	0.50	3.30	0.51	10.67	10.16	4.64	4.64	2343
1.11	2.24	0.20	0.58	4.13	0.39	8.89	8.50	4.22	4.22	2344
0.75	2.72	0.22	0.59	4.28	0.79	9.13	8.34	7.49	7.49	2342
0.69	3.48	0.28	0.74	5.19	0.46	8.90	8.44	7.66	7.66	2345
1.47	1.94	0.42	4.02	7.85	1.21	6.90	5.69	2.31	2.31	2401
0.00	2.28	0.48	5.29	8.05	1.28	7.13	5.85	2.67	2.67	2883
0.00	3.32	0.00	0.42	3.74	0.21	3.80	3.59	2.38	2.38	2490

¹ Formula called for nitrate nitrogen.
² Regular formula without nitrate.

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
	Frank S. Platt Co., New Haven, Conn.	
2090	Platco Special 5-8-7	New Haven.....
2089	Platt's Special Lawn Fertilizer 10-5-5	New Haven.....
	The Rogers & Hubbard Co., Portland, Conn.	
2352	"Bone Base" Oats and Top Dressing	Norwich.....
2370	"Bone Base" Seeding Down Fertilizer	Portland.....
2331	"Bone Base" Soluble Corn and Market Garden Manure	Branford.....
2478	"Bone Base" Soluble Potato and Tobacco Manure	Portland.....
2096	Gro-Fast Plant Food 5-6-6	New Haven.....
2396	Hubbard's All Soils All Crops 4-8-4	New Milford.....
2477	Hubbard's Climax Tobacco Brand 5-3-5	Portland.....
2356	Hubbard's Corn and Grain 2-12-4	Willimantic.....
2371	Hubbard's High Potash 2-8-10	Portland.....
2322	Hubbard's Golf Course Fertilizer 8-6-2	Hartford.....
2332	Hubbard's Potato Fertilizer 5-8-7	Branford.....
2448	Hubbard's Tobacco Grower Vegetable Formula, Cottonseed Base 6-3-6	Unionville.....
2471	Hubbard's Tobacco Grower Vegetable Formula, Cottonseed Base 6-3-6	Broad Brook.....
1971	Red H Brand 4-8-4	Clinton.....
2386	Red H Brand 4-8-4	Portland.....
1960	Red H Brand 4-8-7	Clinton.....
1973	Red H Brand 5-8-7	Clinton.....
2385	Red H Brand 5-8-7	Portland.....
1962	Red H Brand 7-6-6	Clinton.....
2387	Red H Brand 7-6-6	Portland.....
2758	Red H Brand 8-16-14	Portland.....
	O. M. Scott & Sons Co., Marysville, Ohio.	
2182	Scott's Turf Builder 10-6-4	Meriden.....
	Sewerage Commission of the City of Milwaukee, Milwaukee, Wis.	
2395	Milorganite	Torrington.....

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Station No.	Nitrogen				Phosphoric acid			Potash		Station No.
	Litrate	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citric acids	Total	So-called "Available"	As muriate		Total
	%	%	%	%	%	%	%	%	%	%
	0.98	3.00	0.74	0.42	5.14	0.41	8.76	8.35	7.05	7.05
	0.00	7.00	1.02	2.51	10.53	0.50	7.07	6.57	6.01	6.01
	6.95	0.12	0.20	0.53	7.80	0.86	8.77	7.91	2.67	7.62
	0.00	1.43	0.00	1.99	3.42	3.91	11.61	7.70	7.81	8.17
	0.97	1.34	0.82	0.90	4.03	1.84	11.01	9.17	7.79	7.79
	1.21	1.84	0.76	1.29	5.10	0.61	10.24	9.63	1.01	10.39
	0.11	1.48	0.78	3.17	5.54	0.58	7.28	6.70	1.05	6.23
	0.32	1.92	1.12	0.58	3.94	1.35	9.69	8.34	4.61	4.61
	1.36	0.08	0.88	3.32	5.64	0.35	3.76	3.41	0.74	5.60
	0.00	1.16	0.48	0.41	2.05	1.59	13.77	12.18	4.89	4.89
	0.00	1.40	0.79	0.29	2.48	1.44	10.06	8.62	11.01	11.01
	0.00	0.90	3.68	3.62	8.20	1.18	8.00	6.82	2.66	3.05
	0.37	2.54	1.42	0.73	5.06	1.37	10.27	8.90	7.04	7.04
	1.06	0.08	0.92	3.88	5.94	0.31	3.60	3.29	0.74	6.52
	1.02	0.08	1.08	3.86	6.04	0.24	3.56	3.32	0.74	6.49
	0.00	3.12	0.58	0.18	3.88	0.74	9.39	8.65	4.96	4.96
	0.64	3.48	0.08	0.18	4.38	0.87	9.08	8.21	4.59	4.59
	0.49	3.24	0.20	0.17	4.10	0.60	9.09	8.49	7.49	7.49
	0.50	4.28	0.18	0.16	5.12	0.51	9.28	8.77	6.90	6.90
	0.60	4.12	0.30	0.14	5.16	0.93	9.53	8.60	7.24	7.24
	0.37	6.32	0.22	0.17	7.08	0.66	6.91	6.25	5.64	5.64
	0.41	6.12	0.28	0.19	7.00	0.76	7.36	6.60	6.18	6.18
	0.00	6.68	0.56	1.05	8.29	0.87	17.28	16.41	14.06	14.46
	0.00	6.60	0.24	3.27	10.11	0.19	6.03	5.84	1.84	4.57
	4.64	0.04	0.46	0.56	5.70	0.56	3.04	2.48	.....	.....

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
M. L. Shoemaker & Co., Inc., Philadelphia, Pa.		
2253	Shoemaker's "Swift-Sure" 4-10-0 Tobacco Starter	Glastonbury.....
Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.		
2252	Standard 4-8-4 Fertilizer	Glastonbury.....
2251	Standard 5-8-7 Fertilizer	Glastonbury.....
2339	Standard 7-6-6 Fertilizer	New London.....
2348	Standard 7-6-6 Fertilizer	Westerly.....
Stumpp & Walter Co., New York City		
2132	Sawco Emerald Grass Fertilizer 5-7-3	Stamford.....
2133	Sawco General Garden Fertilizer 5-10-5	Stamford.....
Summers Fertilizer Co., Inc., Baltimore, Md.		
2099	4-8-7 Fertilizer	Orange.....
2165	5-8-7 Fertilizer	Groton.....
2365	5-8-7 Fertilizer	Wilson.....
Swift & Co. Fertilizer Works, Baltimore, Md.		
2521	Swift's Special Golf Fertilizer 12-6-4	Cheshire.....
2012	Vigoro 4-12-4	Plantsville.....
Synthetic Nitrogen Products Corp., New York City		
2368	Nitrophoska 15-30-15	Wethersfield.....
Tennessee Corp., Lockland, Ohio		
2405	Loma (5-10-4)	New Canaan.....
2468	Soil-Prep (4-2-2)	Hartford.....
I. P. Thomas & Son Co., Camden, N. J.		
2157	I. P. Thomas 4-8-7	North Haven.....
2088	I. P. Thomas 5-8-7	North Haven.....
2098	I. P. Thomas 8-16-14	Orange.....
2087	Tip Top Fertilizer 3-10-6	North Haven.....
2086	Truckers' High Grade Guano 4-8-4	North Haven.....

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

In nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	
0.38	2.44	0.70	0.67	4.19	2.46	13.59	11.13	....	....	2253
0.31	2.82	0.40	0.56	4.09	1.03	9.07	8.04	2.27	4.46	2252
0.00	3.88	0.54	0.59	5.01	0.72	8.66	7.94	3.97	6.82	2251
0.30	4.96	0.56	0.34	6.16	0.44	8.10	7.66	5.72	5.72	2339
0.25	5.32	0.54	0.43	6.54	0.41	7.26	6.85	6.30	6.30	2348
0.00	3.28	0.41	1.93	5.62	1.03	8.85	7.82	3.47	3.99	2132
0.53	3.32	0.72	0.71	5.28	0.62	10.85	10.23	5.78	5.78	2133
1.35	2.20	0.14	0.28	3.97	1.06	9.26	8.20	6.98	6.98	2099
0.88	3.36	0.08	0.35	4.67	0.77	8.81	8.04	7.54	7.54	2165
0.78	3.76	0.20	0.32	5.06	1.01	9.50	8.49	7.17	7.17	2365
0.26	9.92	0.28	0.18	10.64	0.15	7.01	6.86	4.07	4.82	2521
0.43	3.52	0.18	0.10	4.23	0.35	13.00	12.65	4.39	4.39	2012
2.82	12.40	0.00	0.26	15.48	0.03	30.04	30.01	15.31	15.31	2368
0.33	4.16	0.06	0.46	5.01	0.29	11.05	10.76	4.24	4.24	2405
0.00	2.44	0.29	1.37	4.10	0.29	3.29	3.00	3.03	3.03	2468
0.35	3.22	0.33	0.38	4.28	1.05	9.64	8.59	6.79	7.42	2157
0.87	3.28	0.12	0.73	5.00	0.94	9.80	8.86	6.41	6.98	2088
0.00	7.00	0.04	0.77	7.90	0.48	16.08	15.60	13.90	13.90	2098
0.36	1.96	0.60	0.26	3.18	1.36	11.71	10.35	0.57	6.19	2087
0.42	2.82	0.58	0.29	4.11	0.90	9.64	8.74	3.76	4.17	2086

TABLE 9. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Place of sampling
Virginia-Carolina Chemical Co., Richmond, Va.		
2411	BloomAid (New Process) 4-10-3	Bridgeport.....
2412	V-C Fairway Fertilizer (New Process) 6-6-4..	Bridgeport.....
2474	V-C Fertilizer 2-10-2	Norwich.....
2393	V-C Fertilizer 4-8-4	Torrington.....
2475	V-C Fertilizer 4-8-5	Norwich.....
2377	V-C Fertilizer 4-8-10	Thomaston.....
2378	V-C Fertilizer 5-8-7	Thomaston.....
2372	V-C Fertilizer 8-6-6	Middletown.....
2391	V-C Fertilizer 8-6-6	Torrington.....
The Vita-Vim Co., Baltimore, Md.		
2759	Vita-Vim 6-10-4	East Haven.....
F. H. Woodruff & Sons, Milford, Conn.		
2102	Gro-Sod Lawn Food 10-6-4	Milford.....

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

Nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-sol IIc	Organic water-insol IIc	Total	Citrate-sol II	at	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	
0.23	2.72	0.28	0.82	4.05	0.39	13.00	12.61	1.37	3.29	2411
0.48	3.90	0.34	1.88	6.60	0.79	8.18	7.39	2.83	4.91	2412
0.23	1.20	0.36	0.27	2.06	4.06	14.85	10.79	2.17	2.17	2474
0.46	2.92	0.36	0.58	4.32	0.86	9.24	8.38	5.18	5.18	2393
0.45	2.56	0.44	0.55	4.00	0.74	9.45	8.71	4.66	5.00	2475
0.47	2.84	0.38	0.42	4.11	0.44	8.77	8.33	9.93	9.93	2377
0.42	3.28	0.54	0.61	4.85	0.30	8.87	8.57	7.14	7.14	2378
0.34	4.18	1.46	1.96	7.94	0.25	6.94	6.69	5.91	5.91	2372
0.43	6.00	1.08	0.79	8.30	0.86	6.96	6.10	1.36	6.18	2391
0.00	2.28	3.44	0.64	6.36	0.82	11.85	11.03	0.35	3.59	2759
0.55	4.24	1.76	3.57	10.12	0.39	7.95	7.56	4.64	5.43	2102

TABLE 10. SUMMARY OF CHEMICAL DEFICIENCIES

Manufacturer	Number samples	Number guaranties	Deficiencies			Percentage of guaranties met, season 1926	Two-year period 1935-1936
			Nitrogen	Available P ₂ O ₅	Potash		
Acme Gauno Co.	4	12	0	0	0	100	67
American Agricultural Chemical Co.	21	63	3	0	3	90	95
American Cyanamid Co.	1	2 ¹	0	0	...	100	100
Apothecaries Hall Co.	18	54	0	0	1	98	98
Armour Fertilizer Works	10	30	4	0	1	83	88
Associated Seed Growers, Inc.	3	9	0	0	0	100	100
Bartlett, F. A., Tree Expert Co. ..	1	3	0	0	0	100	83
Baugh & Sons Co., The	12	36	2	0	2	89	...
Berkshire Chemical Co.	13	39	4	0	2	85	92
Consolidated Rendering Co.	14	45	2	0	1	93	94
Davey Tree Expert Co.	1	3	0	0	0	100	87
Eastern States Farmers' Exchange	14	42	1	4	2	83	84
Hubbard, Paul M., & Co.	1	3	0	0	0	100	100
International Agricultural Corp. ...	5	15	1	0	0	93	85
Leary, The Florist	1	3	1	0	0	67	...
Old Deerfield Fertilizer Co., Inc. ...	7	21	0	0	1	95	97
Olds & Whipple, Inc.	15	45	1	0	0	98	99
Outpost Nurseries, Inc.	2	6	1	0	0	83	89
Plantspur Products Co.	1	3	0	0	0	100	100
Platt, Frank S., Co.	2	6	0	0	0	100	100
Rogers & Hubbard Co., The	21	63	1	0	2	95	96
Scott, O. M., & Sons Co.	1	3	0	0	0	100	100
Sewerage Commission of the City of Milwaukee	1	2 ¹	1	0	...	50	50
Shoemaker, M. L. & Co., Inc.	1	2 ¹	0	0	...	100	100
Standard Wholesale Phosphate & Acid Works	4	12	2	0	1	75	71
Stumpp & Walter Co.	2	6	0	0	0	100	100
Summers Fertilizer Co.	3	9	1	0	0	89	90
Swift & Co., Fertilizer Works	2	6	1	0	0	83	83
Synthetic Nitrogen Products Corp.	1	3	0	0	0	100	83
Tennessee Corp.	2	6	0	0	0	100	100
Thomas, I. P. & Son Co.	7	21	0	1	0	95	87
Virginia-Carolina Chemical Corp. ...	9	27	1	0	0	96	97
Vita-Vim Co., The	1	3	0	0	1	67	...
Woodruff, F. H. & Sons	1	3	0	0	0	100	83
	201	600	27	5	17	92	91

¹ Only two guaranties for this sample.

TABLE 11. ANALYSES OF SPECIAL AND HOME MIXTURES

Station No.	Name of mixture	Place of sampling	Total nitrogen			Phosphoric acid			Potash			Station No.
			%	%	%	%	%	%	%	%	%	
2516	Special Mixture for Tobacco..	Edward Barkal, Poquonock	5.19	3.41	1.10	0.70	4.11	1.10	0.70	12.04	0.83	2516
1985	High Grade Vegetable Home Mixture	T. W. Ryan, Stratford	5.44	8.03	...	0.69	8.72	...	0.69	5.70	...	1985
1986	Potato and Vegetable Home Mixture	T. W. Ryan, Stratford	4.50	9.69	...	1.09	10.78	...	1.09	4.39	...	1986
1817	Fertilizer No. 1 A—P.	Consolidated Cigar Corp., Hartford	5.48	13.29	...	0.60	13.89	...	0.60	8.23	0.38	1817
1818	Fertilizer No. 1 B—H.	Consolidated Cigar Corp., Hartford	5.62	3.19	...	0.66	3.85	...	0.66	8.11	0.34	1818
1819	Fertilizer No. 1 C—Ch.	Consolidated Cigar Corp., Hartford	5.48	3.27	...	0.60	3.87	...	0.60	8.26	0.35	1819
1820	Fertilizer Formula 1 D—De ...	Consolidated Cigar Corp., Hartford	5.66	3.19	...	0.74	3.93	...	0.74	8.05	0.35	1820
1821	Fertilizer Formula No. 1E—Du	Consolidated Cigar Corp., Hartford	5.60	3.55	...	0.66	4.21	...	0.66	8.39	0.27	1821
1822	Fertilizer Formula No. 2A—P.	Consolidated Cigar Corp., Hartford	5.76	3.34	...	0.39	3.73	...	0.39	7.21	0.35	1822
1823	Fertilizer Formula No. 2 B—H.	Consolidated Cigar Corp., Hartford	5.81	3.14	...	0.49	3.63	...	0.49	7.17	0.27	1823

TABLE 11. ANALYSES OF SPECIAL AND HOME MIXTURES—(Concluded)

Station No.	Name of mixture	Place of sampling	Total nitrogen	Phosphoric acid			Potash			Station No.
				Citric soluble	Total	So-called "Available"	As muriate	Total	Chlorine	
1824	Fertilizer Formula No. 2C—Ch.	Consolidated Cigar Corp., Hartford	% 5.77	% 0.41	% 3.69	% 3.28	% ...	% 7.26	% 0.29	1824
1825	Fertilizer Formula No. 2D—De	Consolidated Cigar Corp., Hartford	5.80	0.47	3.64	3.17	...	7.28	0.35	1825
1826	Fertilizer Formula No. 2E—Du	Consolidated Cigar Corp., Hartford	6.06	0.59	3.87	3.28	...	7.34	0.22	1826
2550	Special Mixture	Fairchild Wheeler Municipal Golf Course, Bridgeport	8.20	0.50	5.90	5.40	2.19	2.19	...	2550
1889	Fertilizer	S. A. Fassler & Co., Hartford ..	6.20	...	4.46	...	...	6.93	0.38	1889
2246	Fertilizer	S. A. Fassler & Co., Hartford ..	5.85	0.37	4.92	4.55	0.59	7.38	0.45	2246
2887	Special Mixture Fertilizer	G. H. Hollister, Hartford	7.19	1.81	10.55	8.74	2.36	2.36	...	2887
1735 ¹	Home Mixture For Tobacco ..	Leslie W. Newberry, South Windsor	6.72	...	2.90	...	...	6.47	0.17	1735
2766	O&W Special Home Mixture..	Wm. Thresher, South Windsor.	6.57	0.35	2.75	2.40	0.56	6.98	0.42	2766
1890	Home Mixture Fertilizer for Tobacco	Tobacco Substation, Windsor ..	6.00	0.23	2.54	2.31	...	5.61	0.29	1890
2541	Special Tobacco Mixture AP ..	T. R. Swanback, Tobacco Substation, Windsor	5.59	0.55	3.66	3.11	0.33	6.22	0.25	2541
2540	Special Tobacco Mixture EB 1	T. R. Swanback, Tobacco Substation, Windsor	5.91	0.45	3.85	3.40	0.36	7.97	0.27	2540
2539	Special Tobacco Mixture OD..	T. R. Swanback, Tobacco Substation, Windsor	5.50	0.30	3.74	3.44	0.40	7.33	0.30	2539
2538	Special Tobacco Mixture EB 2	T. R. Swanback, Tobacco Substation, Windsor	5.73	0.40	3.66	3.26	0.47	8.91	0.35	2538

¹MgO, 8.47%; CaO, 4.94%.

VII. MISCELLANEOUS FERTILIZERS AND OTHER MATERIALS

SHEEP MANURE, ETC.

Analyses of commercial animal and poultry manures examined during the season are given in Table 12, p. 54.

LIMING MATERIALS

Liming materials examined during the year are listed in Table 13, p. 56.

TABLE 12. ANALYSES OF SHEEP MANURE, ETC.

Station No.	Manufacturer and brand	Place of sampling	Nitrogen		Total phosphoric acid		Potash		Station No.
			Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	
2394	Pulverized Sheep and Goat Manure. American Agricultural Chemical Co., North Weymouth, Mass.	F. L. Wadhams & Sons, Torrington	%	%	%	%	%	%	2394
2192	Domestic Sheep Manure. Apothecaries Hall Co., Waterbury, Conn.	Stanley Svea Grain & Coal Co., New Britain	1.70	1.25	1.79	1.00	3.65	2.00	2394
2010	Liberty Pulverized Sheep and Goat Manure. Apothecaries Hall Co., Waterbury, Conn.	R. W. Hine, Cheshire	1.34	1.65	0.87	1.00	2.42	2.00	2192
2268	Sheep and Goat Manure. Armour Fertilizer Works, New York City..	Geo. S. Phelps & Co., Thompsonville	1.35	1.25	1.40	0.50	3.00	2.00	2010
2094	Driconure. Atkins & Durbrow, Inc., New York City	Lightborn & Pond Co., New Haven	1.78	1.25	3.32	1.00	3.48	2.00	2268
2117	Corenco Sheep Manure. Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	2.26	1.00	1.00	1.00	1.90	1.00	2094
2407	Davey Shredded Cattle Manure. Davey Tree Expert Co., Kent, Ohio	R. E. Landis, Old Greenwich	1.79	1.25	1.35	1.00	3.70	2.00	2117
2321	Sheepshead Pulverized Sheep Manure. Natural Guano Co., Aurora, Ill. ...	Cadwell & Jones, Hartford	2.19	2.00	1.81 ¹	...	2.24	2.00	2407
			2.33	2.00	1.65 ²	1.25	2.27	2.00	2321

¹Guaranteed "available" phosphoric acid 1.00%; found 1.62%.²Guaranteed "available" phosphoric acid 1.00%; found 1.86%.

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2083	Pulverized Sheep and Goat Manure. Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Bristol Grain & Supply Co., Bristol	%	%	%	%	%	%	2083
1952	Groz-it Brand Pulverized Sheep Manure. Pacific Manure & Fertilizer Co., San Francisco, Calif.	Knowles-Lombard Co., Guilford ..	1.54	1.25	1.19	1.00	3.37	2.00	2083
2190	Wizard Brand Cow Manure. Pulverized Manure Co., Chicago, Ill. ...	S. P. Strople, New Britain ...	1.39	1.25	0.91 ³	...	2.42	2.00	1952
2191	Wizard Brand Pulverized Sheep Manure. Pulverized Manure Co., Chicago, Ill.	S. P. Strople, New Britain	2.08	2.00	1.55	1.00	1.61	1.00	2190
2093	Premier Brand Pulverized Poultry Manure. Premier Poultry Manure Co., Chicago, Ill.	Lightborn & Pond Co., New Haven	2.26	2.00	2.21	1.00	3.37	2.00	2191
1961	Sheep and Goat Manure. The Rogers & Hubbard Co., Portland, Conn. ...	Clinton Grain Co., Clinton	4.84	4.93	2.36 ⁴	2.75	1.14	1.30	2093
2525	Sawconure. Stumpp & Walter Co., New York City	Stumpp & Walter Co., Stamford ..	1.50	1.25	1.65	1.00	3.10	2.00	1961
2134	Sawco Pulverized Sheep Manure. Stumpp & Walter Co., New York City	Stumpp & Walter Co., Stamford ..	3.17	3.00	3.81 ⁵	...	1.67	1.00	2525
2138	Woodgro Pure Cow Manure Dehydrated. Thomas Wood & Sons, Inc., Montclair, N. J.	Stumpp & Walter Co., Stamford ..	2.00	2.00	2.20 ⁶	...	4.35	2.00	2134
2085	Bovung. Walker-Gordon Laboratory Co., Inc., Plainsboro, N. J.	Wm. J. Rice, Stamford	2.54	2.00	2.21	2.00	3.75	4.00	2138
		Paul M. Hubbard, Bristol	2.22	2.00	2.71	2.00	2.48	2.00	2085

³Guaranteed "available" phosphoric acid 1.00%; found 0.70%.⁴Guaranteed "available" phosphoric acid 2.50%; found 2.18%.⁵Guaranteed "available" phosphoric acid 1.00%; found 3.59%.⁶Guaranteed "available" phosphoric acid 1.00%; found 1.95%.

Sheep Manure and Other Materials

OTHER MISCELLANEOUS MATERIALS

Seventy samples of miscellaneous materials have been examined for farmers and other individuals. Some of these are recorded for reference.

2747. **Spanish Moss.** Submitted by the Department of Soils. The dry material as submitted contained: Ash 16.68 per cent; organic and volatile (by difference) 83.32 per cent; nitrogen 0.99 per cent; phosphoric acid 0.27 per cent; total potash 0.37 per cent.

2693. **Cacao By-product.** Rockwood and Co., New York. The air-dry material contained: Nitrogen 4.74 per cent; phosphoric acid 2.05 per cent; total potash 2.28 per cent; calcium oxide (CaO) 0.27 per cent; magnesium oxide (MgO) 1.13 per cent; total ash 6.35 per cent.

2675. **Fertile Pots.** Fertile Pot Co., Bridgeport. These are flower pots made of compressed manure or other organic material. As received, they contained: Moisture 12 per cent; nitrogen 1.65 per cent; phosphoric acid 1.67 per cent; and water-soluble potash 1.70 per cent.

2441. **Fertl-Humus.** Pinnacle Rock Farm, Plainville. Natural organic deposit. As received it contained: Moisture 75.5 per cent; ash 3.54 per cent; organic and volatile matter 20.96 per cent; nitrogen 0.69 per cent; phosphoric acid 0.12 per cent; potash 0.03 per cent.

1160. **New York Stable Manure.** Consolidated Cigar Corporation, Hartford. As received the sample contained: Moisture 70.05 per cent; ash 3.16 per cent; organic and volatile matter 26.79 per cent; nitrogen 0.50 per cent; phosphoric acid 0.43 per cent; potash 0.51 per cent.

1077. **Bone Black.** Submitted by Tobacco Substation, Windsor. The sample contained 35.00 per cent of total phosphoric acid, 27.38 per cent of citrate insoluble phosphoric acid "available" 7.62 per cent.

897. **Colza Oil Meal** (Rapeseed oil meal). Kelloggs and Miller, Inc., New York. The sample contained: Nitrogen 5.46 per cent; phosphoric acid 2.15 per cent; total potash 1.21 per cent; chlorine 0.03 per cent.

788. **Fosl.** Submitted by Marshall E. Fisher, Rumford, R. I. Sample as submitted contained: Moisture 68.50 per cent; ash 1.92 per cent; organic and volatile matter 29.58 per cent; nitrogen 0.52 per cent; phosphoric acid 0.05 per cent; potash 0.01 per cent. This is a humus for soil amendment purposes.

384. **Cesspool Refuse.** New Haven Country Club. As received the sample contained: Moisture 83.73 per cent; ash 5.60 per cent; organic and volatile matter 10.67 per cent; nitrogen 0.30 per cent; phosphoric acid 0.18 per cent; potash 0.03 per cent.

108. **Compost.** Submitted by Tobacco Substation, Windsor. Composition: 1/3 horsemanure from mushroom cellar, 1/3 cow manure and 1/3 leaf mold. On the air-dry basis the sample contained: Ash 82.17 per cent; nitrogen 0.58 per cent; phosphoric acid 0.45 per cent; potash 0.16 per cent; calcium oxide 0.39 per cent; magnesium oxide 0.49 per cent. The high ash shows a large proportion of soil.

Soy beans, air dry. Submitted by F. H. Woodruff & Sons, Milford. Examined for fertilizer elements only.

No.	Variety	Nitrogen	Phosphoric	Potash
		%	acid %	%
304	1-A Wilson Early Black	2.54	0.74	2.13
305	1-B Wilson Early Black	2.58	0.80	2.07
306	2-A Black Wilson	1.75	0.72	2.48
307	2-B Black Wilson	2.34	0.70	2.57
308	4-A Virginia Brown	2.77	0.65	2.21
309	4-B Virginia Brown	1.80	0.63	1.92
310	6-A Illini	3.00	0.75	2.57
311	6-B Illini	1.54	0.71	2.41
312	17-A Cayuga	2.87	0.83	2.64
313	17-B Cayuga	2.37	0.84	2.65
314	18-A Wipp Cow Peas	2.80	0.81	3.41
315	18-B Wipp Cow Peas	2.34	0.84	2.98
316	22-A Sciota	2.41	0.73	1.65
317	22-B Sciota	1.90	0.68	1.53

CHECK MEALS AND FERTILIZERS

Forty-two samples of check cottonseed meals and check fertilizers have been analyzed in the collaborative programs of the American Oil Chemists Society and of the F. R. Royster Guano Company. These programs are for the purpose of checking methods of analysis and procedure for the materials mentioned and are participated in by State, commercial and industrial laboratories.

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