

H. G. M. Jacobson

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COMMERCIAL FERTILIZERS

REPORT FOR 1932



Connecticut
Agricultural Experiment Station
New Haven

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COMMERCIAL FERTILIZERS
REPORT FOR 1932

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Connecticut
Agricultural Experiment Station
New Haven

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COMMERCIAL FERTILIZERS REPORT FOR 1932

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 Mr. Shepard and Miss Langley; inspection and sampling by Mr. Churchill; and compilations by Mrs. Vosburgh.

RECENT CHANGES AFFECTING FERTILIZER CONTROL

LABELLING

Mixed fertilizer offered for sale in this State during the year 1932 were held to the requirements of a regulation issued by this Station June 25, 1931. The regulation is as follows:

"In view of the resolution passed by the Fertilizer Control Officials of the thirteen Northeastern States favoring (1) the statement of grade as a part of the brand name of mixed fertilizers, e.g., XX Potato Manure 4-8-4; (2) that the significance of grade shall be nitrogen, available phosphoric acid, and water-soluble potash, and in that order, e.g., XX Potato Manure 4-8-4 meaning 4% nitrogen (not 4% ammonia), 8% available phosphoric acid and 4% water-soluble potash; (3) that statements of grade and of guaranteed analysis shall be in whole numbers; and (4) that statements of phosphoric acid and water-soluble potash; and inasmuch as these recommendations are in accord with rules adopted by the Association of Official Agricultural Chemists, which rules are required by Sec. 5 of the Connecticut fertilizer law to be followed in administering the act; this Station will, on and after Jan. 1, 1932, observe the foregoing procedure and urge its adoption by all concerned with the manufacture, sale and distribution of fertilizers and by those charged with the dissemination of information concerning fertilizers and fertilizer problems.

"In accordance with this understanding and acceptance of terms and procedure this Station will expect (1) that mixed fertilizer offered for registration for the year 1932 and thereafter will carry as a part of the brand name, whenever possible, the grade of the mixture; (2) that the statement of the grade will be in whole numbers; (3) that the significance of the nutrients expressing the grade, and the order of them, will be nitrogen (not ammonia), available phosphoric acid and water-soluble potash; (4) that the statement of guaranteed analysis will give the percentages, in whole numbers only, of nitrogen, available phosphoric acid and water-soluble potash, and in that order; and (5), that tags or stencils upon bags will agree with the statement of mixtures in which phosphoric acid is derived from sources (e.g., bone and tankage), in which available phosphoric acid cannot be adequately evaluated by present analytical methods, total phosphoric acid may be stated in the guaranteed analysis, and the statement of grade may be substituted for available."

While this regulation applies to *mixed* fertilizers only, it is recommended that guarantees for raw materials follow the spirit of the ruling so far as may be. Nitrogenous raw materials, for example, should be guaranteed in terms of nitrogen, but not necessarily in whole numbers; bone and tankage should show guarantees expressed in terms of nitrogen and total phosphoric acid rather than ammonia and bone phosphate of lime as formerly. In the case of mixed fertilizers in which the phosphoric acid is derived from materials such as bone, in which present analytical methods do not adequately evaluate available phosphoric acid, it was regarded as advisable to omit the statement of grade and allow

Definitions of Fertilizer Materials

total phosphoric to be given in the guaranteed analysis, preferably instead of available, but if desired, in addition to it. In any case the qualifying phrase, "All the phosphoric acid is derived from bone," is permitted.

METHODS OF ANALYSIS

Phosphoric acid insoluble in ammonium citrate solution has been determined this year according to the revised methods adopted by the Association of Official Agricultural Chemists at the annual meeting October, 1931, whereby a 1-gram charge of fertilizer is used instead of 2 grams and the time of digestion in ammonium citrate solution increased from 30 minutes to 1 hour.

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.

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.

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 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.

SULFATE 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-, 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 1931

To the brands registered for 1931 in our last report should be added:

The Rogers & Hubbard Company, Portland, Conn.
Cottonseed Meal

REGISTRATIONS FOR 1932

For 1932, 65 firms and individuals registered at this Station for sale in this State 375 brands of fertilizers. As required by statute the brands so registered are listed as follows.

American Agricultural Chemical Co., New Haven Sales Dept., Drawer H, West Haven, Conn.

AA Aroostook Potato Manure 5-8-7

AA Corn Favorite 3-10-4

AA General Crop Fertilizer 2-10-2

AA Hi-Grade Tobacco Manure 6-3-6

AA Monarch Fertilizer 4-8-4

AA Peerless Potato Manure 4-8-7

AA Prolific 10% Potash Fertilizer 2-8-10

AA Superphosphate 16%

AA Tobacco Starter 5-5-15

AA Top Dresser 7-6-6

AAC Castor Pomace

AAC Double A Tobacco Fertilizer 5-3-5

AAC Dry Ground Fish

AAC Muriate of Potash

AAC Pulverized Sheep & Goat Manure

AAC Special Ground Bone

AAC Sulfate of Ammonia

AAC Sulfate of Potash

Agrico 5-9-6

Agrico for Aroostook 5-8-7

Agrico for Corn 3-10-6

Agrico for Lawns, Trees & Shrubs 7-6-6

Agrico for New England 4-8-10

Agrico for Truck 4-10-5

Bowker's All Round Fertilizer 3-10-4

Bowker's Market Garden Fertilizer 4-8-4

Bowker's Stockbridge Early Crop Manure 5-8-7

Bowker's Stockbridge Tobacco Manure 5-3-5

Bradley's Blood, Bone & Potash Brand 5-8-7

Bradley's Complete Tobacco Manure 5-3-5

Bradley's Northland Fertilizer 4-8-4

Bradley's XL Fertilizer 3-10-4

Sanderson's Formula B 4-8-7

American Cyanamid Co., 535 Fifth Ave., New York City

Aero Cyanamid

Ammo-Phos 11-48-0

Ammo-Phos 16-20-0

Apothecaries Hall Co., Waterbury, Conn.

Bone Meal 2.47%

Bone Meal 3.29%

Bone & Meat Tankage

Carbonate of Potash

Castor Pomace

Cotton Hull Ashes

Dry Ground Fish

Liberty 10-16-14

Liberty Corn 2-10-2

Liberty Fish, Bone & 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 Sulfate) 4-8-7
 Liberty Potato & General Crops 4-8-10
 Liberty Potato & Market Gardeners (Potash as Muriate) 4-8-7
 Liberty Potato & Vegetable 2-8-10
 Liberty Special Fertilizer for Fruit 7-8-6
 Liberty Special Fertilizer for Lawn, Gardens, Flowers, Etc.¹
 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 & Grain 8-8-8
 Liberty Tree & Shrub Food 10-8-8
 Muriate of Potash
 Nitrate of Potash
 Precipitated Bone
 Sheep Manure
 Sulfate of Potash
 Sulfate of Potash & Magnesia
 Super Phosphate
 Tankage

Armour Fertilizer Works, 10 East 40th St., New York City

Armour's Big Crop Fertilizers 3-10-4
 Armour's Big Crop Fertilizers 4-8-4
 Armour's Big Crop Fertilizers 4-8-10
 Armour's Big Crop Fertilizers 4-16-4
 Armour's Big Crop Fertilizers 5-8-7
 Armour's Big Crop Fertilizers 6-11-10
 Armour's Big Crop Fertilizers 7-6-6
 Armour's Big Crop Fertilizers —16% Superphosphate
 Armour's Big Crop Fertilizers Tobacco Special 5-3-5
 Armour's Big Crop Fertilizers Tobacco Special 6-3-6
 Armour's Bone Meal
 Armour's Ground Tankage

Armour's Special Turf Fertilizer 10-8-6
 Armour's Vert- The Green Colored Plant Food 5-8-6
 Castor Pomace
 Sheep & Goat Manure

Ashcraft-Wilkinson Co., Atlanta, Ga.

Helmet Brand Cottonseed Meal
 Monarch Brand Cottonseed Meal

Associated Seed Growers, Inc., New Haven, Conn.

16% Acid Phosphate
 Clark's Special Super High-grade 5-8-7
 Nitrate of Soda
 Special Mixture 3-8-6
 Special Mixture for General Use 3-8-4
 Tip Top Brand 4-8-7

Baker Castor Oil Company, 120 Broadway, New York City

Castor Pomace

Barrett Company, 40 Rector St., New York City

Arcadian Nitrate of Soda
 Arcadian Sulfate of Ammonia
 Sulfate of Ammonia

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

Bartlett Green Tree Food 6-7-4

Berkshire Chemical Co., Bridgeport, Conn.

Berkshire 3-10-4 Fertilizer
 Berkshire 4-8-4 Fertilizer
 Berkshire 5-8-7 Fertilizer
 Berkshire Castor Pomace
 Berkshire Complete Fertilizer 2-12-2
 Berkshire Complete Tobacco Fertilizer 4-3-5
 Berkshire Dry Ground Fish
 Berkshire Fine Ground Bone
 Berkshire Grass Special Fertilizer 6-6-5
 Berkshire High Grade Tobacco Fertilizer 5-3-6
 Berkshire Long Island Special Fertilizer 4-8-7

¹Phosphoric acid is from bone.

- Berkshire Market Garden Fertilizer 3-8-4
 Berkshire Precipitated Bone Phosphate
 Berkshire Sheep Manure
 Berkshire Superphosphate
 Berkshire Tobacco Special Fertilizer 6-3-7
 Berkshire Tobacco Starter Fertilizer 4-4-15
 Berkshire Truck Fertilizer 4-8-5
Bisbee Linseed Company, Philadelphia, Pa. and Chicago Heights, Ill.
 Bisbee Brand Pure Old Process Linseed Meal
C. E. Buell, Inc., 131 State St., Boston, Mass.
 Two-In-One Peat-Poultry Manure
Chilean Nitrate Sales Corp., 120 Broadway, New York City
 Champion Brand Nitrate of Soda
 Standard Chilean Nitrate of Soda
Connecticut Fat Rendering & Fertilizer Corp., West Haven, Conn.
 Tankage
Consolidated Rendering Co., Boston, Mass.
 Castor Pomace
 Corenco 5-8-7 with Magnesium
 Corenco 7-13-11 "It Cuts the Cost"
 Corenco Sheep Manure
 Dry Ground Fish
 Ground Bone
 Ground Tankage 7.41%
 Ground Tankage 8.22%
 Superphosphate 16%
 Superphosphate 20%
 Sulfate of Ammonia
Davey Tree Expert Co., Kent, Ohio
 Davey Shredded Cattle Manure
 Davey Tree Food 10-3-3
Eastern States Farmers' Exchange, Springfield, Mass.
 Eastern States 0-14-6
 Eastern States 0-20-20
 Eastern States 2-12-6
 Eastern States 4-8-8
 Eastern States 4-10-6
 Eastern States 4-12-4
 Eastern States 4-16-20
 Eastern States 5-5-15 Tobacco
 Eastern States 6-8-6
 Eastern States 6-15-9
 Eastern States 7-5-17 Supplement Tobacco
 Eastern States 8-4-8 Tobacco
 Eastern States 8-16-16
 Eastern States 8-16-16 Low Chlorine Special
 Eastern States 8-24-8
 Eastern States 10-5-10 Tobacco
 Eastern States 10-20-20
 Eastern States 15-20-15
 Eastern States Calurea
 Eastern States Castor Pomace
 Eastern States Dry Ground Fish
 Eastern States Ground Animal Tankage
 Eastern States Ground Steamed Bone
 Eastern States Muriate of Potash
 Eastern States Nitrate of Potash
 Eastern States Precipitated Bone
 Eastern States Sulfate of Ammonia
 Eastern States Sulfate of Potash
 Eastern States 16% Superphosphate
 Eastern States 32% Double Superphosphate
 Eastern States Urea
 Nitrophoska 10-20-20
Ed. Eggert, Hartford, Conn.
 "Diamond EE Cotton Hull" Ashes
Emporia Elevator & Feeding Co., Emporia, Kans.
 "Big Sheep" Brand Sheep Manure
Essex Fertilizer Co., Boston, Mass.
 Essex 3-10-4 Fish Brand Fertilizer For All Crops
 Essex 4-8-4 Market Garden
 Essex 4-8-10 Peerless Potato Manure
 Essex 5-8-7 Complete Manure
 Essex 7-6-6 Top Dressing

Registrations

Ford Motor Company, Dearborn, Mich.

Ford Ammonium Sulfate

L. T. Frisbie Co., New Haven, Conn.

Frisbie's 4-8-7 (Sulfate Base)

Frisbie's Corn & Grain 2-10-2

Frisbie's Fine Bone Meal

Frisbie's Market Garden 4-8-7

Frisbie's Special 5-8-7

Frisbie's Special Potato Fertilizer 4-8-4

Frisbie's Special Vegetable & Potato Grower 3-10-4

Frisbie's Super Tobacco Grower 7-3-7

Frisbie's Top Dresser 7-6-6

Goulard & Olena, Inc., 140 Liberty St., New York City

Acid Phosphate 16%

G & O Ground Bone

G & O Lawn & Garden No-Filler Fertilizer 5-8-5

J. B. Golf Greens No-Filler Fertilizer 10-3-3

Humphreys-Godwin Co., Memphis, Tenn.

Bull Brand Cottonseed Meal

Danish Brand Cottonseed Meal

Dixie Brand Cottonseed Meal

International Vegetable Oil Co., Inc., Savannah, Ga.

High Grade Cottonseed Meal

Henry James & Son, Inc., 20 Stockbridge St., Springfield, Mass.

4-8-4 General Garden Fertilizer

5-8-7 Market Garden Fertilizer

4-8-7 Potato & Vegetable Fertilizer

Spencer Kellogg & Sons, Inc., Buffalo, N. Y.

Castor Pomace

Kellogg's 37% Protein Pure Old Process Linseed Meal

Koppers Products Company, Koppers Building, Pittsburgh, Pa.

Koppers Velvet Lawn—Sulfate of Ammonia—Fertilizer

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

"Lovit Brand" 41% Cottonseed Meal

"Lovit Brand" 43% Cottonseed Meal

Lowell Fertilizer Co., Boston, Mass.

Lowell 2-10-2 Bone Brand

Lowell 3-10-4 Animal Brand, A High Grade Manure for All Crops

Lowell 4-8-4 Corn and Vegetable

Lowell 4-8-10 Potato Grower

Lowell 5-3-5 for Tobacco

Lowell 5-8-7 Market Garden Manure

Lowell 7-6-6 Top Dressing

Mead Bros., Box 57, Cos Cob, Conn.

Mead Bros. Tree & Shrub Food 8-3-8

Millane Nurseries & Tree Experts Co., Cromwell, Conn.

Millane Tree Food 8-8-4

The Miller Fertilizer Co., Baltimore, Md.

Miller's 2-12-4

Miller's Crop Grower 5-8-7

Miller's Onion & Vegetable 4-8-4

Miller's Superphosphate 16%

Milwaukee Sewerage Commission, Milwaukee, Wis.

Milorganite

Natural Guano Co., Aurora, Ill.

"Sheep's Head" Pulverized Sheep Manure

New England Fertilizer Co., Boston, Mass.

New England 2-10-2 Corn Phosphate

New England 3-10-4 Super, A High Grade Fertilizer for All Crops

New England 4-8-4 Potato and Vegetable Manure

New England 4-8-7 Old General Crop Manure For Potatoes and Market Garden Crops

- New England 4-8-10 Complete Manure
 New England 5-3-5 Tobacco Manure
 New England 5-8-7 Market Garden Manure
 New England 7-6-6 Top Dressing
 New England Tobacco 7-3-7
- N. V. Potash Export My. Inc.,**
A & S Bureau, 2404 Baltimore Trust Bldg., Baltimore, Md.
 Muriate of Potash
 Sulfate of Potash
- Old Deerfield Fertilizer Co., Inc.,**
South Deerfield, Mass.
 Old Deerfield Cotton Hull Ashes
 Old Deerfield Dry Ground Fish
 Old Deerfield Grass Top Dressing 7-6-6
 Old Deerfield Potato Fertilizer 4-8-7
 Old Deerfield Special Formula 5-4-10
 Old Deerfield Tobacco Fertilizer 5-3-5
 Old Deerfield Tobacco Starter 5-8-12
 Valley Brand 4-8-4
 Valley Brand 5-8-7
- Olds & Whipple, Inc., Hartford, Conn.**
 J. W. Alsop Special Mixture "Luxura" 5-8-6
 O & W 5-3-5 Complete Tobacco Fertilizer
 O & W 6-3-6 Blue Label Tobacco Fertilizer
 Olds & Whipple's 3-10-4 Corn Special Fertilizer
 Olds & Whipple's 4-8-4 Market Garden Fertilizer
 Olds & Whipple's 4-8-7 Potato and General Purpose Fertilizer
 Olds & Whipple's 5-4-15 High Grade Tobacco Starter & Potash Compound
 Olds & Whipple's 5-8-7 High Grade Potato & Vegetable Fertilizer
 Olds & Whipple's 7-3-7 Tobacco Fertilizer
 Olds & Whipple's 7-6-6 Top Dressing and Grass Fertilizer
 Olds & Whipple's 10-3-0 High Grade Tobacco Starter
- Olds & Whipple's Bone Meal
 Olds & Whipple's Castor Pomace
 Olds & Whipple's Inc. Cotton Hull Ashes
 Olds & Whipple's Dry Ground Fish
 Olds & Whipple's Ground Tankage
 Olds & Whipple's Nitrate of Potash
 Olds & Whipple's Sulfate of Ammonia
 Olds & Whipple's Superphosphate
 Wilcox 3-10-4 Corn Special Fertilizer
 Wilcox 4-8-4 Market Garden Fertilizer
 Wilcox 4-8-7 Potato & General Purpose Fertilizer
 Wilcox 7-6-5 Top Dresser Fertilizer
- Pacific Manure & Fertilizer Co.,**
429 Davis St., San Francisco, Calif.
 Groz-It Brand Pulverized Sheep Manure
- Parmenter & Polsey Fertilizer Co.,**
Boston, Mass.
 "P & P" 4-8-4 Corn & Vegetable Fertilizer
 "P & P" 4-8-10 Maine Potato Fertilizer
- Pedigreed Seed Co. Inc., 74 Reade St., New York City**
 Kaguma Special Turf Fertilizer 5-8-6
- Plantspur Products Co., Ridgefield, N. J.**
 Plantspur Fertilizer 3-3-2
- Frank S. Platt Co., New Haven, Conn.**
 Platco Special 4-8-7
 Platt's Special Lawn Fertilizer 10-5-5
- Premier Poultry Manure Co., 327 South La Salle St., Chicago, Ill.**
 Premier Brand Pulverized Poultry Manure
 Premier Brand Pulverized Sheep Manure

Pulverized Manure Co., Chicago, Ill.

Wizard Brand Cattle Manure
 Wizard Brand Pulverized Sheep Manure

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

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

F. Rynveld & Sons, 55 West 26th St., New York City

Rynveld's Bone Meal Fertilizer

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

Scott's Turf Builder 10-6-4

William M. Sears Co., Stamford, Conn.

Fertil Field Green Lawn Food 5-8-7

A. S. Sergent, Baltimore, Md.

2-12-2
 4-8-4
 5-8-7
 7-6-6
 16% Superphosphate

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

"Swift-Sure" Bone Meal (Ground)
 "Swift-Sure" Bone Meal (Raw)
 "Swift-Sure" Potato Special 5-8-7
 "Swift-Sure" Tobacco & General Use 3-10-3
 "Swift-Sure" Tobacco Starter 4-10-0

Springfield Rendering Co., Springfield, Mass.

Springfield 3-10-4 Corn & Grain Fertilizer
 Springfield 4-8-4 General Garden Fertilizer
 Springfield 4-8-7 Potato & Vegetable Fertilizer
 Springfield 5-5-5 Lawn & Shrub Fertilizer
 Springfield 5-8-7 Market Garden Fertilizer
 Springfield 6-3-6 Tobacco Special Fertilizer
 Springfield 7-6-6 Top Dresser

Standard Wholesale Phosphate & Acid Works, Baltimore, Md.

Standard United States 2-8-5
 Standard United States 2-8-10
 Standard United States 2-12-2
 Standard United States 2-12-4
 Standard United States 2-12-6
 Standard United States 3-8-3
 Standard United States 3-12-5
 Standard United States 4-8-4
 Standard United States 4-8-6
 Standard United States 4-8-7
 Standard United States 4-16-4
 Standard United States 5-4-5
 Standard United States 5-8-7
 Standard United States 5-10-5
 Standard United States 7-6-5
 Standard United States 8-6-6
 Standard United States 8-16-20
 Standard United States Muriate of Potash
 Standard United States Nitrate of Soda

- Standard United States Sheep Manure
 Standard United States Steamed Bone Meal
 Standard United States 16% Superphosphate
 Standard United States 20% Superphosphate
- Summers Fertilizer Co., Inc.,**
 Baltimore, Md.
 Summers' "Best on Earth"
 Ground Fish Scrap
- Swift & Company, Court Square**
 Bldg., Baltimore, Md.
 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)
 Cal-Nitro 16%
 Nitrophoska 15-30-15
 Urea (Floramid-Urea)
- Tennessee Corporation, Lockland,**
 Ohio
 Loma (5-10-4)
- I. P. Thomas & Sons Co., Phila-**
 delphia, Pa.
 6% Guano 6-6-5
 I. P. Thomas 5-8-7
 Long Island Special 4-8-7
 Sheep & Goat Manure
 16% Superphosphate
 Tip Top Fertilizer 3-10-6
 Truckers High Grade Guano
 4-8-4
 ictor Potash Fertilizer
- Tobacco By-Products & Chemical**
 Corp., Louisville, Ky.
 "Black Leaf" Tobacco - Stem Meal
- Virginia-Carolina Chemical Corp.,**
 20 Exchange Place, New York City
 Bloomaid 5-10-4
 Fine Ground Bone
 Sheep Manure
 V-C Aroostook Potato Grower
 5-8-7
 V-C Double Owl Brand 4-8-7
 V-C Fairway Fertilizer 8-6-5¹
 V-C Good Luck Fertilizer 3-12-6
 V-C Indian Chief Brand 5-3-5
 V-C National Brand 4-8-10
 V-C Owl Brand Fertilizer 2-12-4
 V-C 16% Superphosphate
 V-C 20% Superphosphate
 V-C Tip Top Top Dresser 7-6-6
 V-C XXXX Fish & Potash
 4-8-4
- Walker - Gordon Farms, Julius-**
 town, N. J.
 Driconure
- F. H. Woodruff & Sons, Milford,**
 Conn.
 Woodco Lawn Food 10-6-4
- S. D. Woodruff & Sons, Orange,**
 Conn.
 S. D. Woodruff's Home Mixed
 4-8-5
- Worcester Rendering Co., Auburn,**
 Mass.
 Prosperity All Crops Fertilizer
 4-8-4
 Prosperity Corn & Grain Fer-
 tilizer 2-10-2
 Prosperity Market Garden Fer-
 tilizer 5-8-7
 Prosperity Special Potato Fer-
 tilizer 4-8-10
 Prosperity Superior Top Dress-
 ing 7-6-6

¹This was formerly 6-6-5 grade.

INSPECTION OF 1932

The Station Agent has visited 87 towns and villages in the state and has drawn 396 official samples of fertilizer, including all the registered brands that could be found. The classification of these and of other samples analyzed is given in the summary.

CLASSIFICATION OF FERTILIZER MATERIALS, 1932

	Number samples	Page
I. Containing Chiefly Nitrogen		
Nitrate of soda	11	20
Calcium nitrate	1	20
Calurea	1	20
Urea	3	20
Cyanamid	1	20
Ammonium sulfate	7	20
Castor pomace	19	20
Cottonseed meal	157	23
Linseed meal	10	23
II. Containing Chiefly Phosphoric Acid		
Superphosphates	17	23
Precipitated bone phosphate	7	25
III. Containing Chiefly Potash		
Carbonate of potash	5	25
Muriate of potash	7	25
Sulfate of potash	8	25
Sulfate of potash and magnesia	2	25
Cottonhull ashes	57	25
Wood ashes	1	25
IV. Containing Nitrogen and Potash		
Nitrate of potash	11	31
Nitrate of potash and soda	2	31
Ground tobacco stems	106	31
V. Containing Nitrogen and Phosphoric Acid		
Dry ground fish	33	31
Tankage	10	31
Ground bone	30	32
Milorganite	1	32
VI. Mixed Fertilizers		
Containing nitrogen and phosphoric acid	6	37
Containing phosphoric acid and potash	1	37
Containing nitrogen, phosphoric acid and potash	235	38
Special and home mixtures	19	41
VII. Miscellaneous		
Sheep Manure	19	64
Lime	19	64
Other miscellaneous	60	64
Check meals and fertilizers	37	64
Total	903	

I. RAW MATERIALS CHIEFLY VALUABLE FOR NITROGEN

NITRATE OF SODA

Six official samples of nitrate of soda have been analyzed. Guaranties for nitrogen were met or exceeded except in one sample, 9279, which was about .4 per cent low. A second sample of the same brand, however, substantially met the guaranty.

Nitrate of soda of standard quality will contain not less than 15 per cent of nitrogen.

Until recent years the chief source of this material was in the mineral deposits of Chili, but now large quantities are produced synthetically in the United States.

Analyses are given in Table 1. Five unofficial samples examined for purchasers are not included in the tabulation.

OTHER NITROGENOUS MATERIALS

Other synthetic products now supply nitrogen for agricultural purposes. Among these are calcium nitrate (15 per cent N), calurea (34 per cent N), urea (46 per cent N), and cyanamid (20 to 25 per cent N). The nitrogen in cyanamid and in urea is classified as organic according to the interpretation of the Association of Official Agricultural Chemists.

This group is represented by five official samples and analyses are given in Table 1.

AMMONIUM SULFATE

Ammonium sulfate is probably the most important nitrogenous fertilizer at the present time. Much of the supply is produced from synthetic ammonia, gypsum, and carbon dioxide. The commercial article contains 20.5 per cent of nitrogen.

Seven samples were analyzed and all met or exceeded guaranties. Results are given in Table 2.

CASTOR POMACE

52 N

After the removal of oil from castor beans the press cake is ground and used as a source of organic nitrogen for fertilizer purposes. The castor bean contains a poisonous principle, ricin, which remains in the press cake and although it is said to be toxic only when introduced into the blood, instances of poisoning of livestock have been cited and it is advisable to store it where animals cannot feed on it.

Analyses of nine official samples are given in Table 3. All met or exceeded guaranties. Ten samples were examined for purchasers and are not tabulated.

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				
9493	Associated Seed Growers, Inc., New Haven	Factory, Milford	15.92	15.00
9366	Arcadian. The Barrett Co., New York City	Cheshire Reformatory, West Cheshire	16.04	16.00
9279	Champion. Chilean Nitrate Sales Corp., New York City	T. W. Ryan, Stratford	15.58	16.00
9449	Champion. Chilean Nitrate Sales Corp., New York City	H. D. Peters, Hamden ...	15.94	16.00
9702	Standard United States. Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	H. E. Meeker, Danbury ..	16.04	16.00
9715	Standard United States. Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	H. H. McKnight, Ellington	16.04	16.00
Calcium Nitrate (Nitrate of Lime)				
9669	Synthetic Nitrogen Products Corp., New York City ..	Paul W. Caldwell, New Milford	15.02	15.00
Calurea				
9863	Eastern States Farmers' Exchange, Springfield, Mass.	Paul W. Caldwell, New Milford	34.00	34.00
Urea				
9818	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	O. D. Tuller, West Simsbury	45.84 ¹	46.00
9644	Floranid Urea. Synthetic Nitrogen Products Corp., New York City	Olds & Whipple, Inc., Hartford	46.00	46.00
Cyanamid				
9506	Aero. American Cyanamid Co., New York City	A. L. Lockwood, Clinton .	22.12	22.00

¹Moisture 1.21 per cent.

TABLE 2. ANALYSES OF SULFATE OF AMMONIA

Statio No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
9671	AAC. American Agricultural Chemical Co., West Haven	Factory, West Haven	20.78	20.56
9450	Arcadian. The Barrett Co., New York City	H. D. Peters, Hamden	20.72	20.56
9467	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	20.60	20.50
9552	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	Julius Lewis, Southington..	20.68	20.50
9940	Ford. Ford Motor Co., Dearborn, Mich.	New Haven Motors, Inc., New Haven	20.92	20.80
9647	Koppers Velvet Lawn. Kopper Products Corp., Pittsburgh, Pa.	Cadwell & Jones, Hartford	20.72	20.75
9641	Olds & Whipple, Inc., Hartford, Conn.	Factory, Hartford	20.82	20.56

COTTONSEED MEAL 6.5 + 70 N

The ground press cake obtained after removal of the oil from cottonseed is a valuable source of organic nitrogen. It is chiefly used as a stock feed, but much of it is used in fertilizer mixtures, especially for tobacco. It has been estimated that in 1927 nearly 3,000,000 tons of cottonseed meal were produced and of that amount 450,000 tons were used for fertilizer purposes.

Five official samples were taken and all found to satisfy their guaranties. One hundred and fifty-two samples were analyzed for purchasers and are not included in Table 4.

LINSEED MEAL

Linseed meal is used both as a stock feed and as a fertilizer. It is the ground press cake obtained after removal of the oil from flaxseed. No official samples were analyzed, but 10 samples were examined for purchasers.

II. RAW MATERIALS CHIEFLY VALUABLE FOR
PHOSPHORIC ACID

SUPERPHOSPHATE

Superphosphate is made by treating bone or mineral phosphates with sulfuric acid. The process originated with Liebig in 1840 and was adopted in this country about 10 years later. The use of artificial manures began with the discovery of this process and superphosphate is still the basic material of the fertilizer industry. The phosphate rocks of Florida, South Carolina and Tennessee furnish the raw material for the production of superphosphate in the United States. Superphosphate contains about 16 per cent of available phosphoric acid.

So-called "double superphosphate" contains 32 per cent of available phosphoric acid. This material differs from ordinary superphosphate in that practically all of the calcium in the original rock is converted into monocalcium phosphate, whereas ordinarily only one-third of the calcium is so converted. Double superphosphate contains no calcium sulfate, but in ordinary superphosphate two-thirds of the calcium is combined as sulfate.

Sixteen official samples of superphosphate and one of double superphosphate were analyzed and the results are given in Table 5. All of the superphosphates met or exceeded guaranties. The sample of double superphosphate was about 0.5 per cent low.

TABLE 3. ANALYSES OF CASTOR POMACE

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
9672	AAC. American Agricultural Chemical Co., West Haven	Factory, West Haven	5.16	4.53
9625	Apothecaries Hall Co., Waterbury	Factory, East Windsor ...	4.66	4.52
9844	Armour Fertilizer Works, New York City	Frank Gelezinis, Windsor Locks	5.13	4.52
9445	Baker Castor Oil Co., New York City	H. D. Peters, Hamden	5.50	4.50
9283	Berkshire Chemical Co., Bridgeport	T. W. Ryan, Stratford	4.78	4.50
9949	Consolidated Rendering Co., Boston, Mass.	J. D. Beasley, Ellington ..	4.90	4.52
9943	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	J. W. Viberts, So. Windsor	4.57	4.50
9637	Olds & Whipple, Olds & Whipple, Inc., Hartford	Factory, Hartford	5.17	4.50
9612	Spencer Kellogg & Sons, Buffalo, N. Y.	E. D. Woolam, Warehouse Point	4.78	4.52

TABLE 4. ANALYSES OF COTTONSEED MEAL

Station No.	Manufacturer or jobber	Sampled from stock of	Per cent nitrogen	
			Found	Guaranteed
9913	Helmet. Ashcraft - Wilkin-son Co., Atlanta, Ga.	E. J. Bantle, Glastonbury ..	6.51	6.58
9916	Monarch. Ashcraft-Wilkin-son Co., Atlanta, Ga.	Geo. Remington, Suffield ..	7.02	6.88
9821	Bull. Humphreys - Godwin Co., Memphis, Tenn.	E. H. Rollins, Granby	6.88	6.88
9666	Dixie. Humphreys - Godwin Co., Memphis, Tenn.	Geo. T. Soule Co., New Mil-		
8735	Lovit. L. B. Lovitt & Co., Memphis, Tenn.	ford	6.58	6.58
		John B. Cannon, Granby ..	6.60	6.58

PRECIPITATED BONE PHOSPHATE

This fertilizer material contains about 40 per cent of phosphoric acid, nearly all of which is available. The phosphoric acid is not soluble in water but it is soluble in neutral ammonium citrate.

Three official samples were examined, all of which exceeded their guaranties. Results are given in Table 5.

III. RAW MATERIALS CHIEFLY VALUABLE FOR POTASH

POTASH SALTS

The usual potash salts found in mixed fertilizers are carbonate of potash (62 to 65 per cent K_2O), muriate of potash (48 to 50 per cent K_2O), sulfate of potash (48 to 50 per cent K_2O), and sulfate of potash and magnesia (25 per cent K_2O). The chlorine content of sulfate of potash and of sulfate of potash and magnesia should not exceed 2.5 per cent.

Twelve official samples of these salts have been analyzed and the results appear in Table 6. Ten samples were examined for purchasers and are not included in the tabulation.

COTTONHULL ASHES

Ashes of cottonhulls are used to a considerable extent as a source of potash in tobacco mixtures. They are sold on a unit basis, but it is very difficult to determine the analyses of a given lot or shipment because of variations due to the mechanical condition of the goods. As received the ashes are often in such lumpy condition that regrinding and mixing are necessary. These ashes will average about 25 per cent of actual potash, but some lots will contain 30 per cent or more and many will contain 20 per cent or less.

Only two official samples were examined, but fifty-five were analyzed for purchasers.

Analyses of the official samples are given in Table 7.

WOOD ASHES

Only one sample of wood ashes was analyzed. This was Canada ashes submitted by a purchaser. The analysis showed: Moisture 14.20 per cent, calcium oxide 37.08 per cent, magnesia 3.66, potash 2.94.

TABLE 5. ANALYSES OF SUPERPHOSPHATE (ACID PHOSPHATE), ETC.

Station No.	Manufacturer or wholesale dealer	Dealer or purchaser	Phosphoric acid			
			Soluble	Total	"Available"	
					Found	Guaranteed
			%	%	%	%
9516	AA. American Agricultural Chemical Co., West Haven	Roodner Grain Co., South Norwalk	0.22	16.33	16.11	16.00
9532	Apothecaries Hall Co., Waterbury, Conn.	Stanley Svea Coal & Grain Co., New Britain	0.56	17.41	16.85	16.00
9828	Armour Big Crop Fertilizers 16%. Armour Fertilizer Works, New York City	Jacob Boretz, Colchester	0.62	16.70	16.08	16.00
9494	Associated Seed Growers, Inc., New Haven	Factory, Milford	0.28	16.69	16.41	16.00
9278	Berkshire Chemical Co., Bridgeport, Conn.	T. W. Ryan, Stratford	0.33	17.15	16.82	16.00
9447	Consolidated Rendering Co., Boston, Mass.	H. D. Peters, Hamden	0.43	17.54	17.11	16.00
9797	Consolidated Rendering Co., Boston, Mass.	H. D. Peters, Hamden	0.30	20.92	20.62	20.00
9559	Eastern States 32% Double Superphosphate. Eastern States Farmers' Exchange, Springfield, Mass.	Albert Thompson, Farmington	0.25	31.80	31.55	32.00

9616	Eastern States 16%. Eastern States Farmers' Exchange, Springfield, Mass.	Comstock Ferre, Wethersfield	0.27	17.14	16.87	16.00
9607	Goulard & Olena, Inc., New York City	Rackliffe Bros., New Britain	0.78	16.92	16.14	16.00
9660	Miller's 16%. Miller Fertilizer Co., Baltimore, Md.	C. A. Cowles, Plantsville	0.33	16.67	16.34	16.00
9639	Olds & Whipple's. Olds & Whipple, Inc., Hartford	Factory, Hartford	0.65	17.47	16.82	16.00
9598	16%. The Rogers & Hubbard Co., Portland	Factory, Portland	0.55	18.73	18.18	16.00
9700	Standard United States 16%. Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Ed. Mehmel & Son, Plantsville	0.15	16.63	16.48	16.00
9714	Standard United States 16%. Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	H. H. McKnight, Ellington	0.39	17.13	16.74	16.00
9499	I. P. Thomas & Sons, Philadelphia, Pa.	Fred C. Morse & Son, Guilford	1.15	17.15	16.00	16.00
9594	V-C 16%. Virginia-Carolina Chemical Co., New York City	P. Levson & Son, Middletown	1.34	17.50	16.16	16.00
Precipitated Bone Phosphate						
9628	Apothecaries Hall Co., Waterbury	Factory, East Windsor	0.65	40.47	39.82	36.00
9538	Berkshire. Berkshire Chemical Co., Bridgeport	Factory, Bridgeport	0.54	39.90	39.36	38.00
9724	Eastern States Farmers' Exchange, Springfield, Mass.	H. H. McKnight, Ellington	0.14	39.41	39.27	38.00

Superphosphate

TABLE 6. ANALYSES OF POTASH SALTS

Station No.	Manufacturer or jobber	Sampled from stock of	Potash	
			Found	Guaranteed
	Carbonate of Potash		%	%
9927	Apothecaries Hall Co., Waterbury	Factory, East Windsor ...	67.19	60.00
	Muriate of Potash			
9670	AAC. American Agricultural Chemical Co., West Haven	Factory, West Haven	51.74	50.00
9630	Apothecaries Hall Co., Waterbury	Factory, East Windsor ...	51.02	48.00
9668	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	Paul W. Caldwell, New Milford	49.27	50.00
9281	N. V. Potash Export Co. My., Inc., (A & S Bureau), Baltimore, Md.	T. W. Ryan, Stratford	50.95	48.00
9367	N. V. Potash Export Co. My., Inc., (A & S Bureau), Baltimore, Md.	Cheshire Reformatory, West Cheshire	50.12	48.00
9718	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	H. H. McKnight, Ellington	47.82	48.00
	Sulfate of Potash			
9623	AAC. American Agricultural Chemical Co., West Haven	Geo. S. Phelps & Co., Thompsonville	49.06	48.00
9627	Apothecaries Hall Co., Waterbury	Factory, East Windsor ...	49.23	48.00
9614	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	E. D. Woolam, Warehouse Point	48.31	50.00
9446	N. V. Potash Export Co. My., Inc., (A & S Bureau), Baltimore, Md.	H. D. Peters, Hamden	49.64	48.00
	Sulfate of Potash and Magnesia			
9923	Apothecaries Hall Co., Waterbury	Factory, East Windsor ..	27.06	26.00

Cottonhull Ashes

TABLE 7. ANALYSES OF COTTONHULL ASHES

Sta ion No.	Manufacturer or wholesale dealer	Sampled from stock of	Phosphoric acid	Potash
			%	%
9619	"Diamond E. E." Ed. Eg- gert, Hartford	Factory, Hartford .....	....	32.52
9638	Olds & Whipple, Inc. Olds & Whipple, Inc., Hartford	Factory, Hartford .....	....	25.26

TABLE 8. ANALYSES OF NITRATE OF POTASH, ETC.

St u d n No.	Manufacturer	Sampled from stock of	Nitrogen		Potash	
			Found	Guaranteed	Found	Guaranteed
			%	%	%	%
Nitrate of Potash						
9922	Apothecaries Hall Co., Waterbury	Factory, East Windsor	13.28	13.00	45.25	44.00
9613	Eastern States. Eastern States Farmers' Exchange, Springfield, Mass.	E. D. Woolam, Warehouse Point	13.18	13.00	44.67	44.00
9636	Olds & Whipple's. Olds & Whipple, Inc., Hartford	Factory, Hartford, Conn	13.38	13.00	45.48	44.00
Ground Tobacco Stems						
9810	"Black Leaf" Tobacco Stem Meal. Tobacco By-Products Corp., Louisville, Ky.	John Luginbuhl, Ellington	1.34	1.16	4.81	4.00

IV. RAW MATERIALS CONTAINING NITROGEN AND POTASH

NITRATE OF POTASH

Nitrate of potash will contain not less than 12 per cent of nitrogen and about 44 per cent of potash.

Three official samples analyzed exceeded their guaranties. Eight samples were analyzed for purchasers. Results of analyses of official samples are given in Table 8.

NITRATE OF SODA AND POTASH

Two samples of nitrate of potash and soda were examined for purchasers. This salt contains about 14 per cent of nitrogen and 10 per cent of potash. It consists of about 3 parts nitrate of soda and one part of nitrate of potash.

GROUND TOBACCO STEMS

Tobacco stems will contain about 150 pounds of plant food, chiefly nitrogen and potash, per ton. The nitrogen in them usually varies from 1 to 3 per cent and the potash is about 5 per cent. One official sample is listed in Table 8.

One hundred and five samples were analyzed in some detail in collaboration with the Tobacco Station and with the Soils Department of this Station for investigational purposes. The results are not recorded here, but will be included in reports from the above mentioned departments.

V. RAW MATERIALS CONTAINING NITROGEN AND PHOSPHORIC ACID

FISH, TANKAGE, BONE, AND OTHER MATERIALS

Dry ground fish will contain 8 per cent or more of nitrogen and 5 to 6 per cent of phosphoric acid.

Six official samples were examined and the results are given in Table 9. Twenty-seven samples examined for purchasers are not tabulated. No adulteration with mineral nitrogen was found this year. Analyses are given in Table 9.

The composition of tankage depends upon whether or not bone predominates in the material. High grade tankage will contain 8 to 10 per cent of nitrogen and 5 to 10 per cent of phosphoric acid, while tankage in which bone predominates will contain 15 per cent or more of phosphoric acid and less than 5 per cent of nitrogen.

Seven official samples of tankage were analyzed. Two of them were of the bone type, one of which did not equal its guaranty in phosphoric acid. Analyses are given in Table 10. Three samples were analyzed for purchasers and are not included in the table.

Analyses of 18 official samples of bone meal are given in Table 11. Twelve samples were analyzed for purchasers. All of the official samples exceeded guaranties in both nitrogen and phosphoric acid.

A sample of Milorganite, which is an activated sludge, was found to contain 6.24 per cent of nitrogen and 2.85 per cent of phosphoric acid. The insoluble nitrogen amounted to 5.50 per cent, 62.8 per cent of which was "active" by the alkaline permanganate method.

Dry Ground Fish

TABLE 9. ANALYSES OF DRY GROUND FISH

Station No.	Manufacturer or wholesaler	Sampled from	Nitrogen		Phosphoric acid		Chlorine	Station No.
			Total found	Total guaranteed	Total found	Total guaranteed		
9624	AAC, American Agricultural Chemical Co., West Haven	Geo. S. Phelps & Co., Thompsonville	8.97	9.00	8.81	6.00	0.10	9624
9626	Apothecaries Hall Co., Waterbury	Factory, East Windsor	9.11	8.22	8.41	5.00	0.11	9626
9282	Berkshire Chemical Co., Bridgeport	T. W. Ryan, Stratford	9.43	9.04	7.93	6.00	...	9282
9796	Consolidated Rendering Co., Boston, Mass.	H. D. Peters, Hamden	9.70	8.22	8.32	6.40	0.15	9796
9869	Eastern States, Eastern States Farmers' Exchange, Springfield, Mass.	J. W. Viberts, South Windsor	9.00	9.00	6.53	6.0	...	9869
9640	Olds & Whipple's, Olds & Whipple, Inc., Hartford	Factory	9.69	9.00	7.47	5.00	0.15	9640

TABLE 10. ANALYSES OF TANKAGE AND SIMILAR MATERIALS

Station No.	Manufacturer	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	
9551	Apothecaries Hall Co., Waterbury	J. A. Glasnapp, West Cheshire	%	%	%	%	%	%	9551
9610	Apothecaries Hall Co., Waterbury	Factory, East Windsor	4.69	3.29	20.37	20.00	68.0	32.0	9551
9280	Berkshire Chemical Co., Bridgeport	T. W. Ryan, Stratford	9.86	7.40	6.10	3.00	43.5	56.5	9610
9466	Conn. Fat Rendering & Fertz Corp., West Haven	Factory, West Haven.	8.57	9.00	5.79	....	25.5	74.5	9280
9448	Consolidated Rendering Co., Boston, Mass.	H. D. Peters, Hamden	4.62	3.30	19.15	25.00	59.5	40.5	9466
253	Consolidated Rendering Co., Boston, Mass.	C. R. Burr, Manchester	7.79	7.41	10.04	9.15	38.0	62.0	9448
9362	Olds & Whipple's. Olds & Whipple, Inc., Hartford	Rand & Christenson, Wilson Station	7.92	8.22	9.36	9.00	30.0	70.0	253
			7.60	7.40	13.50	9.15	46.0	54.0	9362

TABLE 11 ANALYSES OF GROUND BONE

Station No.	Manufacturer	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	
9512	AAC Special. American Agricultural Chemical Co., West Haven	Libner Grain Co., Inc., Norwalk	%	%	%	%	%	%	9512
9537	Armour's. Armour Fertilizer Works, New York City	Harrison & Gould, Milford	3.18	2.47	26.19	22.88	52.5	47.5	9512
9541	Apothecaries Hall Co., Waterbury	J. B. McArdle, Greenwich	2.70	2.47	22.75	22.00	59.0	41.0	9537
9629	Apothecaries Hall Co., Waterbury	Factory, East Windsor	4.31	3.29	20.31	20.00	64.2	35.8	9541
9495	Berkshire Fine Ground. Berkshire Chemical Co., Bridgeport	Associated Seed Growers, Milford	2.75	2.47	24.29	22.00	72.9	27.1	9629
9458	Consolidated Rendering Co., Boston, Mass.	Lightborn & Pond Co., New Haven	3.26	2.47	22.48	20.00	55.5	44.5	9495
9841	Eastern States Ground Steamed Bone. Eastern States Farmers' Exchange, Springfield, Mass.	2.60	2.05	24.16	22.90	58.5	41.5	9458	
9800	Frisbie's Fine Bone. L. T. Frisbie Co., New Haven	J. E. Stoddard, Abington	2.90	2.50	23.15	23.00	65.8	34.2	9841
9990	G. & O. Goulard & Olena, Inc., New York City	Frank S. Platt Co., New Haven	3.92	3.28	25.32	22.00	32.3	67.7	9800
		Rackliffe Bros., New Britain	3.02	2.40	21.45	22.75	82.0	18.0	9990

Ground Bone

TABLE 11. ANALYSES OF GROUND BONE—(Continued)

Station No.	Manufacturer	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	
9643	Olds & Whipple's. Olds & Whipple, Inc., Hartford	Factory, Hartford ...	2.66	2.47	24.50	22.00	71.5	28.5	9643
9527	Hubbard's Strictly Pure Fine Bone. The Rogers & Hubbard Co., Portland	A. S. Labieniec, Kensington	3.36	3.29	26.50	21.50	61.5	38.5	9527
9645	Hubbard's Pure Raw Knuckle Bone Flour. The Rogers & Hubbard Co., Portland	Cadwell & Jones, Hartford	3.88	3.69	26.60	24.70	78.7	21.3	9645
9662	The Rogers & Hubbard Co., Portland ..	Chas. C. Hart, Wethersfield	2.68	2.47	23.70	22.85	65.5	34.5	9662
9850	Rynveld's Bone Meal Fertz. F. Rynveld & Sons, New York City	F. W. Woolworth, New Haven	2.85	1.85	26.08	22.88	62.0	38.0	9850
9665	(Raw.) M. L. Shoemaker & Co., Inc., Philadelphia, Pa.	Geo. T. Soule, New Milford	3.86	3.70	21.99	20.00	38.0	62.0	9665
9806	(Ground.) M. L. Shoemaker & Co., Inc., Philadelphia, Pa.	E. J. Bantle, Glastonbury	2.60	2.47	27.39	23.00	45.8	54.2	9806
9705	Steamed. Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	F. C. Benjamin, Danbury	2.16	2.00	22.19	22.00	41.7	58.3	9705
9489	Fine Ground. Virginia-Carolina Chemical Co., New York City	A. D. Bridge's Sons, Hazardville	2.88	2.45	21.60	22.00	53.0	47.0	9489

Mixed Fertilizers

VI. MIXED FERTILIZERS

The change in method of expressing "grade" and analysis of mixed fertilizers involving the expression of nitrogenous constituents in terms of nitrogen instead of ammonia and the statement of percentages in guaranties in whole numbers has been put into effect during the past year with little or no confusion. This was due no doubt to the early understanding reached by control officials and the industry on this matter and the notice of the proposed change sent out by control officials six months before the change was to be effective.

(A) MIXTURES SUPPLYING NITROGEN AND PHOSPHORIC ACID

Five official samples of this type were examined. One sample was examined for a purchaser.

9553. Ammo-Phos, 11-48-0. American Cyanamid Co., New York City. Stock of Julius Lewis, Southington.

9676. Liberty Special Fertilizer, 4-4-0, for Lawns, Gardens and Flowers. Apothecaries Hall Co., Waterbury. Stock of Watertown Cooperative Assoc., Watertown.

9931. Liberty Tobacco Starter, 4-10-0. Apothecaries Hall Co., Waterbury. Sampled at factory.

9846. O & W 10-3-0 H. G. Tobacco Starter. Old's & Whipple, Inc., Hartford. Sampled at factory.

9437. "Swift-Sure" Tobacco Starter, 4-10-0. M. L. Shoemaker & Co. Inc., Philadelphia.

The analyses were as follows:

	9553	9676	9931	9846	9437
	%	%	%	%	%
Nitrogen found	11.00	4.74	4.52	9.92	4.15
guaranteed	11.00	4.00	4.00	10.00	4.00
Available P ₂ O ₅ found	48.27	8.32	11.22	4.60	10.92
guaranteed	48.00	4.00	10.00	3.00	10.00
Water-insoluble organic nitrogen ...	0.62	4.22	1.86	5.80	0.83
Activity water-insoluble organic nitrogen, alkaline method	100.00	64.4	74.4	76.8	75.4

(B) MIXTURE SUPPLYING PHOSPHORIC ACID AND POTASH

One sample of this class was analyzed.

9725. Eastern States 0-14-6. Eastern States Farmers' Exchange, Springfield, Mass. Stock of H. H. McKnight, Ellington. It contained 15.05 per cent of available phosphoric acid and 6.47 per cent of potash, satisfying the guaranty in both particulars.

(c) MIXTURES SUPPLYING NITROGEN, PHOSPHORIC ACID
AND POTASH

In this group there are 222 official samples of registered brands. Analyses given in Table 12 may be summarized as follows.

Total number of samples		222
Samples deficient in:		
one item	44	
two items	8	
three items	<u>1</u>	53
Percentage of samples failing to meet guaran-		
ties in all respects		24
Total guaranties made (222 x 3)		666
Guaranties not met:		
nitrogen	28	
available phosphoric acid	10	
potash	<u>25</u>	63
Guaranties substantially met or exceeded		603
Percentage of guaranties met		91
Samples showing commercial deficiencies exceeding \$1.00		
per ton		6
Percentage of samples deficient by more than \$1.00 per ton		3

Fifty-three samples have failed to meet guaranties in all respects but in only six of these did the commercial value of the deficiencies exceed \$1.00 per ton. In arriving at estimates of commercial deficiencies shortages were balanced against overruns and nitrogen was reckoned at 18 cents per pound and available phosphoric and potash at 5 cents each.

The distribution of chemical deficiencies is shown in Table 12a and mixed fertilizer containing only two guaranteed items of plant food (groups a and b), are included.

Samples showing commercial deficiencies in excess of \$1.00 per ton are as follows.

9534	American Agricultural Chemical Co.	\$1.82
9558	Eastern States Farmers' Exchange	7.67
9920	Eastern States Farmers' Exchange	1.21
9706	Standard Wholesale Phosphate and Acid Works .	1.69
9695	Standard Wholesale Phosphate and Acid Works .	3.04
100	Standard Wholesale Phosphate and Acid Works .	4.94

A summary of commercial deficiencies over a period of 12 years is given in Table 12b. No manufacturer is included unless 10 or more samples have been examined in the period noted. On the basis of averages it appears that of every 100 official samples drawn in the last 12 years 95 have shown no commercial deficiency or none in excess of \$1.00 per ton.

TABLE 12a. SUMMARY OF CHEMICAL DEFICIENCIES

Manufacturer	Number samples	Number guaranties	Deficiencies			Percentage of guaranties met
			Nitrogen	Avail. P ₂ O ₅	Potash	
American Agricultural Chemical Co.	23	69	3	0	3	91
American Cyanamid Co.	1	2 ¹	0	0	..	100
Apothecaries Hall Co.	18	52 ²	1	1	1	94
Armour Fertilizer Works	7	21	4	0	2	71
Associated Seed Growers, Inc.	4	12	1	0	1	83
Bartlett, F. A., Tree Expert Co. ...	1	3	0	0	1	67
Berkshire Chemical Co.	13	39	1	0	0	97
Consolidated Rendering Co.	2	6	0	0	1	83
Davey Tree Expert Co.	1	3	1	0	0	67
Eastern States Farmers' Exchange .	17	50 ¹	2	2	4	84
Essex Fertilizer Co.	5	15	0	0	0	100
Frisbie, L. T., Co.	8	24	1	0	0	96
Goulard and Olena, Inc.	2	6	0	0	0	100
James, Henry, and Son	2	6	1	0	0	83
Lowell Fertilizer Co.	7	21	0	0	2	90
Mead Bros.	1	3	0	0	0	100
Millane Nurs. & Tree Experts Co. .	1	3	0	0	0	100
Miller Fertilizer Co.	3	9	2	1	0	67
New England Fertilizer Co.	8	24	0	0	1	96
Old Deerfield Fertilizer Co.	7	21	1	1	1	86
Olds and Whipple, Inc.	16	47 ¹	0	0	0	100
Parmenter and Polsey Fertz. Co. ..	1	3	0	0	0	100
Plantspur Products Co.	1	3	0	0	0	100
Platt, Frank S., Co.	2	6	0	0	0	100
Rogers and Hubbard Co.	25	75	1	1	3	93
Scott, O. M., and Sons Co.	1	3	0	0	0	100
Sears, Wm. M., Co.	1	3	0	0	0	100
Sergent, A. S.	4	12	1	1	1	75
Shoemaker, M. L., and Co.	3	8 ¹	0	0	0	100
Springfield Rendering Co.	5	15	1	0	0	93
Standard Wholesale Phosphate and Acid Works	14	42	7	2	3	71
Swift and Co.	1	3	0	0	0	100
Synthetic Nitrogen Products Corp.	1	3	0	0	1	67
Thomas, I. P., and Sons Co.	6	18	0	0	0	100
Virginia-Carolina Chemical Co.	9	27	0	1	0	96
Woodruff, F. H., and Sons	1	3	0	0	0	100
Woodruff, S. D., and Sons	1	3	0	0	0	100
Worcester Rendering Co.	5	15	0	0	0	100
	228	678	28	10	25	91

¹One sample with only two guaranties.²Two samples with only two guaranties.

TABLE 12b. COMMERCIAL DEFICIENCIES FOR THE PERIOD 1921-1932

Manufacturer	Total number of samples	Number equalling or exceeding guaranties in money value	Percentage for 12 year period	Number samples for 1932	Percentage for 1932
American Agricultural Chem. Co.	487	469	96	23	96
American Cyanamid Co.	11	11	100 ¹	1	100
Apothecaries Hall Co.	133	132	99	18	100
Armour Fertilizer Works	127	108	85	7	100
Associated Seed Growers, Inc. ...	14	14	100 ²	1	100
Bartlett, F. A., Tree Expert Co. ..	10	9	90 ³	1	100
Berkshire Chemical Co.	113	113	100	13	100
Bridge's, A. D., Sons Co.	23	23	100 ⁴	0	...
Eastern States Farmers' Exchange	134	114	85	17	88
Essex Fertilizer Co.	74	71	96	5	100
Frisbie, L. T., Co.	116	106	91	8	100
International Agricultural Corp. ..	69	63	91 ⁴	0	...
Lowell Fertilizer Co.	115	104	90	7	100
Mapes Formula and Peruvian Guano Co.	129	128	99 ⁵	0	...
Miller Fertilizer Co.	15	12	80 ⁶	3	100
New England Fertilizer Co.	85	81	95	8	100
Old Deerfield Fertilizer Co.	24	24	100 ⁷	7	100
Olds and Whipple, Inc.	95	95	100	16	100
Parmenter and Polsey	34	33	97	1	100
Platt, Frank S., Co.	16	15	94	2	100
Rogers and Hubbard Co., The	195	190	97	25	100
Royster, F. S., Guano Co.	67	54	81 ⁸	0	...
Shoemaker, M. L. and Co.	32	32	100	3	100
Springfield Rendering Co.	48	46	96	5	100
Standard Wholesale Phosphate and Acid Works	56	50	89	14	79
Thomas, I. P., and Sons Co.	60	60	100	6	100
Virginia-Carolina Chemical Co. ..	79	75	95	9	100
Woodruff, S. D., and Sons	10	8	80 ⁹	1	100
Worcester Rendering Co.	53	49	92	5	100
	2424	2289	94	206	97

¹Includes 1925, 1926, 1928, 1930, 1931 and 1932 only.²Includes 1930, 1931, and 1932 only.³No samples for 1921, 1922, and 1923.⁴No samples for 1932.⁵No samples for 1931 and 1932.⁶Includes 1921, 1930, 1931 and 1932 only.⁷Includes 1927, 1929, 1930, 1931 and 1932 only.⁸No samples for 1930, 1931 and 1932.⁹No samples for 1928, 1929 and 1932.

QUALITY OF THE WATER-INSOLUBLE ORGANIC NITROGEN

It is customary for fertilizer control chemists to regard water-insoluble organic nitrogen as inferior in quality if its activity by the conventional alkaline permanganate method is less than 50 per cent and by the neutral permanganate method less than 80 per cent. This is in accord with an interpretation adopted by the Association of Official Agricultural Chemists.

It is our practice to test all water-insoluble organic nitrogenous fractions in mixed fertilizer by the alkaline permanganate method, checking by the neutral method any that show less than 50 per cent activity. The test is not made unless the amount of insoluble organic nitrogen exceeds 0.3 per cent; and no question is raised if the amount of water-soluble nitrogen plus the "active" insoluble organic nitrogen equals the total nitrogen guaranteed.

Classification of nitrogen as "inferior" or "inactive" by these methods is not equivalent to classification as "unavailable." Availability can only be determined by vegetation tests.

During the past season 9 samples have not passed the tests for activity of the insoluble nitrogen as just described. The samples are as follows.

No.	Brand
9456	Vigoro 4-12-4
9661	Miller's Onion and Vegetable 4-8-4
9696	Standard U. S. 2-12-6
9699	Standard U. S. 4-8-4
9706	Standard U. S. 7-6-5
9719	Standard U. S. 7-6-5
9722	Miller's Crop Grower 5-8-7
9772	Sergent's 7-6-6
9859	Standard U. S. 2-8-5

SPECIAL AND HOME MIXTURES

In Table 13 are given analyses of special and home mixtures. These have been mixed by the users or made for them according to special formulas.

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
American Agricultural Chemical Co., West Haven, Conn.			
9769	AA Aroostook Potato Manure 5-8-7.....	5-8-7	New Canaan ...
9515	AA Corn Favorite 3-10-4.....	3-10-4	So. Norwalk
9514	AA General Crop Fertilizer 2-10-2.....	2-10-2	So. Norwalk
9843	AA Hi Grade Tobacco Manure 6-3-6.....	6-3-6	Broad Brook ...
9528	AA Monarch Fertilizer 4-8-4.....	4-8-4	New Britain
9441	AA Peerless Potato Manure 4-8-7.....	4-8-7	Suffield
9775	AA Prolific 10% Potash Fertilizer 2-8-10....	2-8-10	Canaan
9439	AA Tobacco Starter 5-5-15.....	5-5-15	Suffield
9438	AA Top Dresser 7-6-6.....	7-6-6	Suffield
9687	Agrico for Aroostook 5-8-7.....	5-8-7	Norwich
9525	Agrico for Corn 3-10-6.....	3-10-6	Meriden
9847	Agrico for Corn 3-10-6.....	3-10-6	Meriden
9534	Agrico for Lawns, Trees and Shrubs 7-6-6..	7-6-6	Bristol
9848	Agrico for Lawns, Trees and Shrubs 7-6-6..	7-6-6	Bristol
9529	Agrico for New England 4-8-10.....	4-8-10	New Britain ...
9517	Agrico for Truck 4-10-5.....	4-10-5	So. Norwalk
9622	Bowker's All Round Fertilizer 3-10-4.....	3-10-4	Thompsonville ..
9621	Bowker's Market Garden Fertilizer 4-8-4....	4-8-4	Thompsonville ..
9692	Bowker's Stockbridge Early Crop Manure 5-8-7	5-8-7	Willimantic
9689	Bradley's Blood, Bone and Potash Brand 5-8-7	5-8-7	Lebanon
9524	Bradley's Northland Fertilizer 4-8-4.....	4-8-4	Meriden
9440	Bradley's XL Fertilizer 3-10-4.....	3-10-4	Suffield
9824	Sanderson's Formula B 4-8-7.....	4-8-7	Glastonbury ...
Apothecaries Hall Co., Waterbury, Conn.			
9929	Liberty Corn 2-10-2.....	2-10-2	East Windsor ..
9542	Liberty High Grade Corn 2-12-4.....	2-12-4	Greenwich
9531	Liberty High Grade Market Gardener's 5-8-7	5-8-7	New Britain
9866	Liberty High Grade Tobacco Manure 6-3-7..	6-3-7	New Milford ...
9915	Liberty High Grade Tobacco Manure 7-3-7..	7-3-7	Ellington
9533	Liberty Market Gardener's Special 4-8-4.....	4-8-4	New Britain
9811	Liberty Onion Special (Potash as Sulfate) 4-8-7.....	4-8-7	East Windsor ..
9690	Liberty Potato and General Crops 4-8-10....	4-8-10	Yantic
9545	Liberty Potato and Market Gardener's (Potash as Muriate) 4-8-7	4-8-7	Mt. Carmel
9812	Liberty Potato and Vegetable 2-8-10.....	2-8-10	East Windsor ..
9546	Liberty Special Fertilizer for Fruit 7-8-6....	7-8-6	Mt. Carmel
9864	Liberty Tobacco Special 5-3-5.....	5-3-5	New Milford ...
9930	Liberty Tobacco Starter with Potash 5-4-15	5-4-15	East Windsor ..
9611	Liberty Top Dresser for Grass and Grain 8-8-8	8-8-8	East Windsor ..
9675	Liberty Top Dresser for Grass and Grain 8-8-8	8-8-8	Watertown
9928	Liberty Tree and Shrub Food 10-8-8.....	10-8-8	East Windsor ..

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	
%	%	%	%	%	%	%	%	%	%	
0.00	4.62	0.05	0.37	5.04	0.26	8.74	8.48	7.05	7.05	9769
0.17	2.48	0.08	0.27	3.00	0.36	11.11	10.75	4.50	4.50	9515
0.00	1.76	0.16	0.23	2.15	0.25	10.59	10.34	2.77	2.77	9514
0.63	1.36	0.88	3.01	5.88	0.20	3.59	3.39	0.51	6.48	9843
0.00	3.64	0.00	0.36	4.00	0.38	9.36	8.98	4.46	4.46	9528
0.00	3.56	0.12	0.37	4.05	0.35	8.85	8.50	6.96	6.96	9441
0.13	1.96	0.00	0.19	2.28	0.30	8.55	8.25	10.10	10.10	9775
0.66	2.40	1.04	0.97	5.07	0.14	5.41	5.27	1.50	14.95	9439
1.00	5.70	0.10	0.32	7.12	0.18	7.11	6.93	0.37	6.32	9438
0.11	4.58	0.04	0.41	5.14	0.32	8.65	8.33	7.03	7.03	9687
0.00	2.60	0.01	0.38	2.99	0.81	10.70	9.89	5.76	5.76	9525
0.00	2.76	0.07	0.36	3.19	0.49	11.12	10.63	5.83	5.83	9847
0.22	5.36	0.28	0.64	6.50	0.36	6.84	6.48	5.50	5.50	9534
0.53	5.20	0.24	0.61	6.58	0.36	7.19	6.83	5.74	5.74	9848
0.00	3.44	0.06	0.50	4.00	0.35	8.84	8.49	10.33	10.33	9529
0.00	3.56	0.21	0.41	4.18	0.38	10.40	10.02	5.16	5.16	9517
0.21	2.44	0.12	0.23	3.00	0.42	11.06	10.64	4.45	4.45	9622
0.00	3.60	0.01	0.40	4.01	0.45	8.89	8.44	4.63	4.63	9621
0.00	4.48	0.20	0.36	5.04	0.33	9.27	8.94	7.40	7.40	9692
0.00	4.64	0.06	0.38	5.08	0.35	9.01	8.66	6.94	6.94	9689
0.00	3.56	0.05	0.39	4.00	0.15	8.66	8.51	4.19	4.19	9524
0.17	2.38	0.20	0.21	2.96	0.37	10.85	10.48	4.37	4.37	9440
0.29	3.22	0.26	0.42	4.19	0.31	9.14	8.83	0.88	7.84	9824
0.00	1.60	0.11	0.73	2.44	0.37	10.74	10.37	2.54	2.54	9929
0.00	2.00	0.04	0.33	2.37	0.33	12.33	12.00	4.90	4.90	9542
1.93	2.60	0.28	0.51	5.32	0.15	8.23	8.08	7.07	7.07	9531
1.64	0.00	0.38	4.40	6.42	0.20	5.61	5.41	1.06	7.93	9866
2.22	0.00	0.72	4.32	7.26	0.23	5.69	5.46	1.48	7.83	9915
0.00	2.56	0.54	0.98	4.08	0.28	8.32	8.04	4.68	4.68	9533
0.41	2.76	0.28	0.93	4.38	0.96	13.22	12.26	0.62	7.76	9811
0.77	2.60	0.24	0.89	4.50	0.26	8.59	8.33	10.39	10.39	9690
0.84	2.92	0.36	0.12	4.24	0.39	9.05	8.66	7.05	7.05	9545
0.13	1.28	0.04	0.85	2.30	0.26	8.50	8.24	10.86	10.86	9812
4.05	2.56	0.08	0.19	6.88	0.21	8.35	8.14	7.61	7.61	9546
1.55	0.00	0.50	3.25	5.30	0.12	4.48	4.36	0.69	5.97	9864
1.85	0.00	0.60	2.61	5.06	0.13	5.76	5.63	1.20	16.22	9930
0.00	6.04	0.15	1.96	8.15	0.15	9.20	9.05	10.16	10.16	9611
0.00	6.00	0.17	2.21	8.38	0.13	9.29	9.16	8.55	8.55	9675
6.39	3.04	0.00	0.72	10.15	0.21	7.13	6.92	7.72	7.72	9928

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
Armour Fertilizer Works, New York City			
9536	Armour's Big Crop Fertilizer 4-8-4.....	4-8-4	Milford
9609	Armour's Big Crop Fertilizer 5-8-7.....	5-8-7	Milford
9827	Armour's Big Crop Fertilizer 6-11-10.....	6-11-10	Colchester
229	Armour's Big Crop Fertilizer 6-11-10.....	6-11-10	Portland
9815	Armour's Big Crop Fertilizer 7-6-6.....	7-6-6	So. Norwalk
9813	Armour's Big Crop Fertilizer Tobacco Special 5-3-5	5-3-5	Thompsonville .
9919	Armour's Vert—The Green Colored Plant Food 5-8-6.....	5-8-6	Hartford
Associated Seed Growers, Inc., New Haven, Conn.			
9492	Tip Top Brand 4-8-7.....	4-8-7	Milford
9602	Tip Top Brand 4-8-7.....	4-8-7	Orange
9774	Special Mixture for General Use 3-8-4.....	3-8-4	Milford
9731	Special Mixture 3-8-6	3-8-6	Milford
F. A. Bartlett Tree Expert Co., Stamford, Conn.			
9544	Bartlett Green Tree Food 6-7-4.....	6-7-4	Factory
Berkshire Chemical Co., Bridgeport, Conn.			
9592	Berkshire 3-10-4 Fertilizer.....	3-10-4	Guilford
9513	Berkshire 4-8-4 Fertilizer.....	4-8-4	Norwalk
20	Berkshire 4-8-4 Fertilizer.....	4-8-4	Factory
9593	Berkshire 5-8-7 Fertilizer.....	5-8-7	Norwalk
9453	Berkshire Complete Fertilizer 2-12-2.....	2-12-2	Hamden
9865	Berkshire Complete Tobacco Fertilizer 4-3-5	4-3-5	New Milford ...
9510	Berkshire Grass Special 6-6-5.....	6-6-5	Seymour
9870	Berkshire High Grade Tobacco Fertilizer 5-3-6	5-3-6	Buckland
9451	Berkshire Long Island Special Fertilizer 4-8-7	4-8-7	Hamden
9452	Berkshire Market Garden Fertilizer 3-8-4....	3-8-4	Hamden
9723	Berkshire Tobacco Special 6-3-7.....	6-3-7	Ellington
9917	Berkshire Tobacco Starter Fertilizer 4-4-15..	4-4-15	Buckland
9732	Berkshire Truck Fertilizer 4-8-5.....	4-8-5	Factory
Consolidated Rendering Co., Boston, Mass.			
9469	Corenco 5-8-7 with Magnesium	5-8-7	Woodmont
9950	Corenco 7-13-11 "It Cuts the Cost".....	7-13-11	Brooklyn

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

Nitrogen					Phosphoric acid			Potash		Station No.
In i rates	In mmnia	O nic r-sol ble	Organic water-insoluble	Tot 1	Ci rate insol ble	Tot 1	Soc-a led "Ava- table"	As muri te	Tot 1	
%	%	%	%	%	%	%	%	%	%	
0.00	3.68	0.21	0.11	4.00	0.10	8.58	8.48	4.07	4.07	9536
0.32	2.88	0.52	0.76	4.48	0.25	8.08	7.83	7.12	7.12	9609
0.48	5.20	0.00	0.10	5.78	0.13	11.13	11.00	8.90	9.79	9827
0.41	5.14	0.08	0.25	5.88	0.08	11.64	11.56	0.88	9.71	229
0.29	6.16	0.28	0.12	6.85	0.26	6.29	6.03	6.32	6.32	9815
2.44	0.28	0.32	2.00	5.04	0.25	3.86	3.61	1.10	5.31	9813
0.00	4.96	0.05	0.19	5.20	5.71	15.40	9.69	4.32	6.79	9919
0.00	2.48	0.77	0.90	4.15	0.23	8.43	8.20	7.42	7.42	9492
0.00	2.34	0.67	0.94	3.95	0.10	8.40	8.30	7.65	7.65	9602
0.00	1.72	0.66	0.48	2.86	0.41	8.60	8.19	4.10	4.10	9774
0.00	1.70	0.83	0.67	3.20	0.45	8.45	8.00	5.73	5.73	9731
0.00	5.28	0.17	1.05	6.50	1.82	9.70	7.88	3.62	3.62	9544
0.00	2.04	0.88	0.52	3.44	0.45	11.84	11.39	4.86	4.86	9592
0.10	1.88	0.80	1.06	3.84	0.31	10.12	9.81	3.83	3.83	9513
0.00	2.38	0.95	0.87	4.20	0.62	9.50	8.88	4.22	4.22	20
0.00	3.48	0.53	0.96	4.97	0.45	8.66	8.21	7.23	7.23	9593
0.10	1.36	0.54	0.38	2.38	0.61	13.16	12.55	2.40	2.40	9453
0.90	0.00	0.60	2.62	4.12	0.14	3.65	3.51	0.73	5.54	9865
0.00	4.52	0.73	1.03	6.28	0.15	7.28	7.13	5.19	5.19	9510
1.66	0.01	0.51	3.06	5.24	0.13	3.42	3.29	0.73	6.34	9870
0.31	2.88	0.36	0.87	4.42	0.43	8.66	8.23	7.20	7.20	9451
0.08	2.04	0.44	0.58	3.14	0.50	8.99	8.49	4.44	4.44	9452
2.01	0.32	0.36	3.21	5.90	0.11	3.60	3.49	0.70	7.34	9723
2.25	0.00	0.84	1.13	4.22	0.17	5.15	4.98	1.57	15.59	9917
0.00	2.56	0.64	1.02	4.22	0.45	9.34	8.89	4.93	4.93	9732
0.72	3.08	0.62	0.72	5.14	0.60	8.91	8.31	6.76	6.76	9469
0.67	4.76	0.90	0.73	7.06	0.91	14.29	13.38	10.88	10.88	9950

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
	Davey Tree Expert Co., Kent, Ohio		
9540	Davey Tree Food 10-3-3.....	10-3-3	Old Greenwich
	Eastern States Farmers' Exchange, Springfield, Mass.		
9504	Eastern States 4-8-8.....	4-8-8	Clinton
9509	Eastern States 4-10-6.....	4-10-6	North Haven ...
9557	Eastern States 4-12-4.....	4-12-4	Farmington
9505	Eastern States 4-16-20.....	4-16-20	Clinton
9730	Eastern States 6-8-6.....	6-8-6	Ellington
9861	Eastern States 6-15-9.....	6-15-9	New Milford ...
9862	Eastern States 8-4-8 Tobacco.....	8-4-8	New Milford ...
9507	Eastern States 8-16-16.....	8-16-16	Clinton
9726	Eastern States 8-16-16 Low Chlorine Special	8-16-16	Ellington
9508	Eastern States 8-24-8.....	8-24-8	North Haven ...
9860	Eastern States 10-5-10 Tobacco.....	10-5-10	New Milford ...
9558	Eastern States 10-20-20.....	10-20-20	Farmington
9840	Eastern States 10-20-20.....	10-20-20	Abington
9920	Eastern States 15-20-15.....	15-20-15	Yantic
9942	Eastern States 7-5-17 Supplement Tobacco Fertz.	7-5-17	New Milford ...
9839	Nitrophoska 10-20-20.....	10-20-20	Meriden
	Essex Fertilizer Co., Boston, Mass.		
9698	Essex 3-10-4 Fish Brand, A Fertilizer for All Crops	3-10-4	Wallingford
9807	Essex 4-8-4 Market Garden.....	4-8-4	So. Manchester .
9709	Essex 4-8-10 Peerless Potato Manure.....	4-8-10	Wallingford
9519	Essex 5-8-7 Complete Manure.....	5-8-7	Wallingford
9520	Essex 7-6-6 Top Dressing.....	7-6-6	Wallingford
	L. T. Frisbie Co., New Haven, Conn.		
9470	Frisbie's Corn & Grain 2-10-2.....	2-10-2	Woodmont
9501	Frisbie's Market Garden 4-8-7.....	4-8-7	Guilford
9468	Frisbie's Special 5-8-7.....	5-8-7	Woodmont
9547	Frisbie's Special Potato Fertilizer 4-8-4.....	4-8-4	West Cheshire .
9770	Frisbie's Special Vegetable & Potato 3-10-4	3-10-4	New Britain
9867	Frisbie's Super Tobacco Grower 7-3-7	7-3-7	Silver Lane
9550	Frisbie's Top Dresser 7-6-6.....	7-6-6	West Cheshire ..
9849	Frisbie's Top Dresser 7-6-6.....	7-6-6	New Haven

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

Nitrogen					Phosphoric acid			Potash		State No.
In nitrate	In nitrate	Organic water-soluble	Organic water-insoluble	Total	Citrate insoluble	Total	So-called Available	As nitrate	Total	
%	%	%	%	%	%	%	%	%	%	
1.19	5.44	0.44	2.46	9.53	0.31	4.19	3.88	2.64	3.16	9540
0.51	2.92	0.42	0.23	4.08	0.13	9.51	9.38	8.00	8.00	9504
0.78	2.84	0.28	0.24	4.14	0.17	11.35	11.18	6.11	6.11	9509
1.13	2.56	0.40	0.39	4.48	0.26	12.35	12.09	0.82	4.66	9557
0.42	3.44	0.18	0.46	4.50	0.35	17.50	17.15	16.94	17.41	9505
1.62	4.04	0.32	0.34	6.32	0.05	9.05	9.00	0.73	6.76	9730
1.12	4.56	0.28	0.36	6.32	0.10	15.20	15.10	6.43	10.03	9861
3.71	0.20	1.04	3.17	8.12	0.10	4.78	4.68	0.97	9.21	9862
1.51	5.28	0.16	0.23	7.18	0.18	17.88	17.70	13.12	14.79	9507
1.56	5.96	0.28	0.36	8.16	0.10	16.32	16.22	1.34	17.14	9726
1.94	5.24	0.28	0.64	8.10	0.56	24.15	23.59	0.80	8.36	9508
3.97	0.64	3.06	3.00	10.67	0.13	6.01	5.88	1.22	10.70	9860
1.72	6.84	0.00	0.21	8.77	0.11	17.83	17.72	15.72	19.04	9558
1.74	7.84	0.08	0.30	9.96	0.06	21.49	21.43	14.29	21.52	9840
5.26	7.88	1.28	0.26	14.68	0.02	19.91	19.89	4.90	15.05	9920
5.11	0.48	0.32	2.09	8.00	0.08	6.31	6.23	1.75	16.31	9942
0.00	7.72	2.47	0.19	10.38	0.00	20.26	20.26	20.27	20.27	9839
0.30	1.72	0.48	0.54	3.04	0.83	10.91	10.08	4.11	4.11	9698
0.47	2.60	0.40	0.53	4.00	0.65	8.84	8.19	3.82	3.82	9807
0.22	2.66	0.54	0.58	4.00	0.40	8.83	8.43	10.00	10.00	9709
0.37	3.60	0.45	0.54	4.96	0.11	8.60	8.49	7.11	7.11	9519
0.00	6.52	0.27	0.11	6.90	0.13	6.30	6.17	6.01	6.01	9520
0.00	1.28	0.50	0.41	2.19	0.43	10.31	9.88	2.07	2.07	9470
0.43	2.64	0.52	0.59	4.18	0.25	8.60	8.35	7.04	7.04	9501
0.47	2.80	1.24	0.54	5.05	0.37	8.71	8.34	7.04	7.04	9468
0.00	3.16	0.54	0.56	4.26	0.35	8.70	8.35	3.95	3.95	9547
0.19	1.66	0.68	0.57	3.10	0.68	11.06	10.38	4.02	4.02	9770
2.11	0.04	1.16	3.81	7.12	0.24	5.89	5.65	0.74	7.36	9867
1.02	4.54	0.58	0.66	6.80	0.22	6.36	6.14	6.02	6.02	9550
1.08	4.84	0.40	0.62	6.94	0.24	6.87	6.63	6.25	6.25	9849

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
	Goulard & Olena, Inc., New York City		
9608	G & O Lawn and Garden No-Filler Fertilizer 5-8-5	5-8-5	New Britain ...
9659	J. B. Golf Greens No-Filler Fertilizer 10-3-3	10-3-3	New Britain ...
	Henry James & Son, Inc., Springfield, Mass.		
9694	4-8-4 General Garden Fertilizer	4-8-4	Mansfield Depot
9693	4-8-7 Potato and Vegetable Fertilizer.....	4-8-7	Mansfield Depot
	Lowell Fertilizer Co., Boston, Mass.		
9556	Lowell 2-10-2 Bone Brand.....	2-10-2	Farmington
9436	Lowell 3-10-4 Animal Brand, A High Grade Manure for All Crops.....	3-10-4	Suffield
9364	Lowell 4-8-4 Corn and Vegetable.....	4-8-4	West Cheshire ..
9842	Lowell 4-8-10 Potato Grower	4-8-10	West Willington
9914	Lowell 5-3-5 for Tobacco.....	5-3-5	Ellington
9365	Lowell 5-8-7 Market Garden Manure.....	5-8-7	West Cheshire .
9363	Lowell 7-6-6 Top Dressing.....	7-6-6	West Cheshire .
	Mead Bros., Cos Cob, Conn.		
9944	Mead Bros. "Tree & Shrub Food" 8-3-8.....	8-3-8	Mfr.'s Sample
	Millane Nurseries & Tree Experts Co., Cromwell, Conn.		
9617	Millane Tree Food 8-8-4.....	8-8-4	Factory
	Miller Fertilizer Co., Baltimore, Md.		
9802	Miller's 2-12-4	2-12-4	Rockville
9722	Miller's Crop Grower 5-8-7.....	5-8-7	Rockville
9661	Miller's Onion and Vegetable 4-8-4.....	4-8-4	Plantsville
	New England Fertilizer Co., Boston, Mass.		
9912	New England 2-10-2 Corn Phosphate.....	2-10-2	Stafford Springs.
9522	New England 3-10-4 Super, A High Grade Fertilizer for All Crops.....	3-10-4	Wallingford

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

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	
%	%	%	%	%	%	%	%	%	%	
0.00	2.78	0.27	1.99	5.04	0.36	8.50	8.14	6.03	6.03	9608
0.67	0.54	3.50	6.51	11.22	1.42	6.35	4.93	3.86	3.86	9659
0.29	2.32	0.44	0.65	3.70	0.88	9.01	8.13	4.12	4.12	9694
0.33	2.56	0.40	0.71	4.00	0.86	9.13	8.27	7.50	7.50	9693
0.00	1.24	0.68	0.38	2.30	0.40	10.80	10.40	2.19	2.19	9556
0.31	1.70	0.58	0.62	3.21	0.84	11.07	10.23	4.00	4.00	9436
0.43	2.58	....	....	4.07	0.30	9.08	8.78	4.00	4.00	9364
0.32	2.70	0.38	0.58	3.98	0.50	9.05	8.55	9.74	9.75	9842
0.88	0.00	1.04	3.30	5.22	0.28	5.55	5.27	1.94	5.62	9914
0.36	3.62	....	....	5.12	0.29	8.87	8.58	7.02	7.02	9365
0.06	6.68	....	....	7.01	0.10	6.02	5.92	5.73	5.73	9363
0.00	6.64	0.17	1.69	8.50	0.03	3.84	3.81	9.00	9.00	9944
3.06	4.48	0.51	0.49	8.54	0.40	8.38	7.98	4.21	4.21	9617
0.00	1.52	0.30	0.36	2.18	0.80	11.92	11.12	3.99	3.99	9802
0.00	3.80	0.49	0.45	4.74	0.16	8.50	8.34	7.19	7.19	9722
0.05	2.94	0.38	0.43	3.80	0.32	8.89	8.57	4.37	4.37	9661
0.00	0.96	0.67	0.79	2.42	0.80	11.26	10.46	2.00	2.00	9912
0.15	1.64	0.62	0.62	3.03	0.46	10.75	10.29	4.12	4.12	9522

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
New England Fertilizer Co., Boston, Mass.			
9816	New England 4-8-4 Potato and Vegetable Manure	4-8-4	East Wallingford
9710	New England 4-8-7 Old General Crop Manure for Potatoes and Market Garden Crops.....	4-8-7	Wallingford
9712	New England 4-8-10 Complete Manure.....	4-8-10	Unionville
9711	New England 5-3-5 Tobacco Manure.....	5-3-5	Unionville
2	New England 5-8-7 Market Garden Manure	5-8-7	Buckland
29	New England Tobacco 7-3-7.....	7-3-7	Buckland
Old Deerfield Fertilizer Co., So. Deerfield, Mass.			
24	Old Deerfield Grass Top Dressing 7-6-6....	7-6-6	Somers
25	Old Deerfield Potato Fertilizer 4-8-7.....	4-8-7	Somers
26	Old Deerfield Special Formula 5-4-10.....	5-4-10	Somers
27	Old Deerfield Tobacco Fertilizer 5-3-5.....	5-3-5	Somers
23	Old Deerfield Tobacco Starter 5-8-12.....	5-8-12	Somers
22	Valley Brand 4-8-4.....	4-8-4	Somers
28	Valley Brand 5-8-7.....	5-8-7	Somers
Olds & Whipple, Inc., Hartford, Conn.			
9642	"Luxura" 5-8-6.....	5-8-6	Factory
9819	J. W. Alsop Special Mixture 4-1-8.....	4-1-8	Granby
9804	O & W 3-10-4 Corn Special Fertilizer.....	3-10-4	East Hartford ..
9600	O & W 4-8-4 Market Garden Fertilizer.....	4-8-4	So. Manchester .
9361	O & W 4-8-7 Potato and General Purpose Fertilizer	4-8-7	Wilson Station .
9808	O & W 5-3-5 Complete Tobacco Fertilizer..	5-3-5	Buckland
9822	O & W 5-4-15 High Grade Tobacco Starter and Potash Compound.....	5-4-15	West Suffield
9615	O & W 5-8-7 High Grade Potato and Vegetable Fertilizer.....	5-8-7	Wethersfield ...
9845	O & W 6-3-6 Blue Label Tobacco Fertilizer	6-3-6	So. Windsor
9932	O & W 7-3-7 Tobacco Fertilizer.....	7-3-7	Ellington
9599	O & W 7-6-6 Top Dressing and Grass Fertilizer	7-6-6	So. Manchester .
9682	Wilcox 3-10-4 Corn Special Fertilizer.....	3-10-4	Old Mystic
9685	Wilcox 4-8-4 Market Garden Fertilizer.....	4-8-4	Old Mystic
9584	Wilcox 4-8-7 Potato and General Purpose Fertilizer	4-8-7	Old Mystic
9686	Wilcox 7-6-6 Top Dresser Fertilizer.....	7-6-6	Old Mystic

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

Nitrogen					Phosphoric acid			Potash		Station No.
In nitrate	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate insoluble	Total	Soluble Available	Ammoniate	Total	
%	%	%	%	%	%	%	%	%	%	
0.39	2.58	0.42	0.60	3.99	0.46	8.85	8.39	3.86	3.86	9816
0.24	2.44	0.78	0.46	3.92	0.41	8.63	8.22	6.84	6.84	9710
0.75	2.96	0.32	0.47	4.50	0.14	8.75	8.61	10.32	10.32	9712
1.21	0.06	0.74	3.23	5.24	0.40	5.88	5.48	1.91	5.38	9711
0.35	2.96	1.28	0.57	5.16	0.55	8.90	8.35	6.74	6.74	2
2.47	0.10	0.90	3.65	7.12	0.25	5.70	5.45	0.45	7.30	29
2.56	2.92	0.68	0.72	6.88	0.14	6.58	6.44	5.28	6.27	24
0.73	1.24	1.02	1.01	4.00	1.70	8.77	7.07	0.40	7.02	25
1.88	0.20	0.51	2.99	5.58	0.98	6.97	5.99	1.08	11.06	26
1.62	0.38	0.00	3.42	5.42	0.48	5.33	4.85	0.58	5.10	27
1.71	0.24	1.44	1.95	5.34	0.63	10.22	9.59	0.94	11.72	23
0.76	2.50	0.54	0.22	4.02	0.21	8.53	8.32	3.65	4.37	22
0.68	2.78	1.36	0.22	5.04	0.20	8.71	8.51	5.95	7.20	28
0.76	2.88	0.31	1.33	5.28	0.60	10.64	10.04	6.89	6.89	9642
1.62	0.04	2.23	1.63	5.52	0.14	1.86	1.72	1.83	10.57	9819
0.00	2.04	0.53	0.83	3.40	0.76	12.15	11.39	4.03	4.03	9804
0.62	2.44	0.44	0.58	4.08	0.31	8.75	8.44	4.70	4.70	9600
0.89	2.14	....	....	4.40	0.42	8.97	8.55	7.81	7.81	9361
0.61	0.12	0.60	3.85	5.18	0.35	4.17	3.82	0.70	5.09	9808
1.09	0.72	0.32	2.91	5.04	0.45	5.60	5.15	1.34	16.26	9822
0.77	3.08	0.52	0.81	5.18	0.35	9.09	8.74	7.73	7.73	9615
0.78	0.00	0.64	4.80	6.22	0.27	4.12	3.85	0.41	6.22	9845
0.09	0.08	0.86	5.97	7.00	0.12	4.06	3.94	0.72	7.37	9932
1.56	3.08	0.98	1.72	7.34	0.31	7.30	6.99	6.38	6.38	9599
0.07	1.96	0.46	0.93	3.42	0.65	11.67	11.02	4.55	4.55	9682
0.82	2.08	0.40	1.02	4.32	0.66	9.94	9.28	4.53	4.53	9685
0.73	2.02	0.42	1.00	4.17	0.60	9.56	8.96	7.50	7.50	9684
1.61	3.18	0.28	1.93	7.00	0.30	7.20	6.90	6.63	6.63	9686

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
	Parmenter & Polsey Fertilizer Co., Boston, Mass.		
9674	"P & P" 4-8-10 Maine Potato Fertilizer....	4-8-10	Wallingford
	Plantspur Products Co., Ridgefield, N. J.		
466	Plantspur Fertilizer 3-3-2.....	3-3-2	Stratford
	Frank S. Platt Co., New Haven, Conn.		
9618	Platco Special 4-8-7.....	4-8-7	Factory
9713	Platt's Special Lawn Fertilizer 10-5-5.....	10-5-5	Factory
	The Rogers & Hubbard Co., Portland, Conn.		
9595	Golf Course Fertilizer 8-6-2	8-6-2	Factory
9454	Gro-Fast 5-6-6.....	5-6-6	New Haven
9667	Hubbard's All Soils-All Crops Fertilizer 4-8-4	4-8-4	New Milford ...
9814	Hubbard's Climax Tobacco Brand 5-3-5....	5-3-5	Thompsonville .
9526	Hubbard's Corn and Grain Fertilizer 2-12-4..	2-12-4	Kensington
9530	Hubbard's High Potash Fertilizer 2-8-10....	2-8-10	New Britain
9497	Hubbard's Potato Fertilizer 5-8-7.....	5-8-7	Branford
9823	Hubbard's Tobacco Grower Vegetable Formula 6-3-6.....	6-3-6	Suffield
9596	Hubbard's "Bone Base" Fertilizer for Seed- ing Down.....	3-7-6	Factory ..
9673	Hubbard's "Bone Base" Fertilizer for Seed- ing Down.....	3-7-6	Fair Haven
9681	Hubbard's "Bone Base" Oats and Top Dressing	8-5-8	Groton
9496	Hubbard's "Bone Base" Soluble Corn Manure	4-8-7	Branford
9777	Hubbard's "Bone Base" Soluble Potato Manure	5-8-7	Madison
9868	Hubbard's "Bone Base" Soluble Tobacco Manure	5-8-10	E. Hartford
9691	Portland Brand 2-10-2 Fertilizer.....	2-10-2	Willimantic
9778	Portland Brand 3-10-4 Fertilizer.....	3-10-4	So. Glastonbury
9503	Portland Brand 4-8-4.....	4-8-4	Madison
9549	Portland Brand 4-8-7.....	4-8-7	Seymour
9921	Portland Brand 4-8-7.....	4-8-7	Factory
9502	Portland Brand 5-8-7.....	5-8-7	Madison
9773	Portland Brand 5-8-7.....	5-8-7	Factory
9597	Portland Brand 7-6-6.....	7-6-6	Factory
9688	Portland Brand 7-6-6.....	7-6-6	Norwich
9767	Portland Brand 8-16-14.....	8-16-14	Madison
101	Portland Brand 8-16-14.....	8-16-14	Factory

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

Nitrates	Nitrogen				Phosphoric acid			Potash		Station No.
	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citric soluble	Total	So-called "Available"	As mutual	Total	
%	%	%	%	%	%	%	%	%	%	
0.38	2.80	0.48	0.54	4.20	0.23	8.74	8.51	10.03	10.03	9674
0.00	2.80	0.07	0.63	3.50	0.25	3.70	3.45	2.07	2.07	466
0.44	2.68	0.48	0.68	4.28	0.35	8.56	8.21	7.07	7.07	9618
0.37	7.88	0.92	1.85	11.02	0.21	7.40	7.19	5.83	5.83	9713
0.63	1.68	2.44	3.67	8.42	0.66	8.35	7.69	2.75	2.75	9595
0.87	1.36	0.54	2.34	5.11	0.39	7.21	6.82	4.64	6.19	9454
0.00	3.00	0.76	0.40	4.16	0.50	9.35	8.85	4.45	4.45	9667
1.86	0.12	0.88	2.16	5.02	0.20	3.61	3.41	1.48	6.08	9814
0.00	0.88	0.79	0.29	1.96	0.44	12.85	12.41	4.44	4.44	9526
0.13	1.00	0.76	0.29	2.18	0.45	8.81	8.36	10.26	10.26	9530
0.36	3.42	0.58	0.60	4.96	0.73	8.64	7.91	7.58	7.58	9497
1.37	0.24	1.93	2.51	6.05	0.28	3.54	3.26	0.93	6.67	9823
0.00	1.28	0.25	1.67	3.20	3.86	12.80	8.94	5.95	5.95	9596
0.00	1.00	0.42	1.58	3.00	3.93	12.83	8.90	6.27	6.27	9673
7.47	0.12	0.02	0.41	8.02	0.71	8.71	8.00	8.36	8.36	9681
0.00	2.74	0.87	0.46	4.07	0.92	9.66	8.74	7.85	7.85	9496
1.71	1.32	1.24	0.87	5.14	1.09	10.26	9.17	1.62	7.04	9777
1.63	1.14	1.70	0.85	5.32	1.83	10.79	8.96	1.22	10.14	9868
0.00	1.20	0.77	0.10	2.07	0.39	10.48	10.09	2.04	2.04	9691
0.00	2.44	0.55	0.15	3.14	0.16	10.13	9.97	3.86	3.86	9778
0.00	3.36	0.60	0.12	4.08	0.22	8.68	8.46	4.09	4.09	9503
0.00	3.40	0.60	0.14	4.14	0.25	8.54	8.29	6.67	6.67	9549
0.00	3.40	0.58	0.10	4.08	0.43	8.75	8.32	7.36	7.36	9921
0.00	4.52	0.30	0.18	5.00	0.11	8.23	8.12	6.71	6.71	9502
0.00	4.04	0.80	0.18	5.02	0.32	8.35	8.03	7.11	7.11	9773
0.00	5.58	0.99	0.37	6.94	0.21	6.86	6.65	5.91	5.91	9597
0.21	5.84	0.76	0.33	7.14	0.19	6.86	6.67	6.01	6.01	9688
0.00	7.20	0.69	0.29	8.18	0.31	17.51	17.20	12.22	12.22	9767
0.00	7.10	0.55	0.23	7.88	0.38	16.16	15.78	15.28	15.28	101

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
	O. M. Scott & Sons Co., Marysville, Ohio.		
9620	Scott's Turf Builder 10-6-4.....	10-6-4	Yalesville
	Wm. M. Sears Co., Stamford, Conn.		
9733	Fertil-Field Green Lawn Food 5-8-7.....	5-8-7	Factory
	A. S. Sergent, Baltimore, Md.		
9825	2-12-2	2-12-2	Colchester
9826	4-8-4	4-8-4	Colchester
9771	5-8-7	5-8-7	Colchester
9772	7-6-6	7-6-6	Colchester
	M. L. Shoemaker & Co. Inc., Philadelphia, Pa.		
9663	"Swift-Sure" Potato Special 5-8-7.....	5-8-7	New Milford ...
9664	"Swift-Sure" Tobacco and General Use 3-10-3	3-10-3	New Milford ...
	Springfield Rendering Co., Springfield, Mass.		
9768	Springfield 3-10-4 Corn and Grain Fertilizer	3-10-4	Stafford Springs
9809	Springfield 4-8-4 General Garden Fertilizer..	4-8-4	Rockville
9729	Springfield 5-5-5 Lawn and Shrub Fertilizer..	5-5-5	Thompsonville ..
9720	Springfield 5-8-7 Market Garden Fertilizer..	5-8-7	Stafford Springs
9918	Springfield 6-3-6 Tobacco Special Fertilizer..	6-3-6	Thompsonville ..
	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.		
9859	Standard United States 2-8-5.....	2-8-5	Plantsville
9701	Standard United States 2-12-2.....	2-12-2	Danbury
9696	Standard United States 2-12-6.....	2-12-6	North Haven ..
9703	Standard United States 3-8-3.....	3-8-3	Danbury
9699	Standard United States 4-8-4.....	4-8-4	Plantsville
9360	Standard United States 4-8-7.....	4-8-7	Wilson Station ..
9697	Standard United States 5-8-7.....	5-8-7	North Haven ..
9717	Standard United States 5-8-7.....	5-8-7	Ellington
9683	Standard United States 5-10-5.....	5-10-5	North Haven ..
9716	Standard United States 5-10-5.....	5-10-5	Ellington
9706	Standard United States 7-6-5.....	7-6-5	New London ...
9719	Standard United States 7-6-5.....	7-6-5	Ellington
9695	Standard United States 8-16-20.....	8-16-20	North Haven ..
100	Standard United States 8-16-20.....	8-16-20	North Haven ..

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

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	
%	%	%	%	%	%	%	%	%	%	
0.11	8.56	0.44	2.10	11.21	0.20	6.33	6.13	4.73	4.73	9620
0.00	4.54	0.18	1.00	5.72	1.86	10.70	8.84	7.64	7.64	9733
0.00	1.80	0.17	0.37	2.34	0.36	11.03	10.67	5.21	5.21	9825
0.00	3.52	0.04	0.44	4.00	0.26	9.05	8.79	3.55	3.55	9826
0.11	4.40	0.00	0.45	4.96	0.25	9.00	8.75	7.40	7.40	9771
0.00	4.32	1.77	0.51	6.60	0.25	7.05	6.80	6.32	6.32	9772
0.00	4.00	0.22	0.88	5.10	0.44	8.70	8.26	7.15	7.15	9663
0.00	2.40	0.07	0.53	3.00	0.45	11.23	10.78	0.68	3.31	9664
0.63	1.56	0.36	0.59	3.14	0.75	10.95	10.20	4.20	4.20	9768
0.54	2.64	0.42	0.72	4.32	0.85	9.23	8.38	4.23	4.23	9809
0.26	2.20	0.20	2.48	5.14	0.68	8.26	7.58	0.74	5.73	9729
0.28	3.46	0.53	0.71	4.98	0.91	9.32	8.41	7.67	7.67	9720
1.69	0.12	0.77	3.22	5.80	0.26	4.86	4.60	0.90	7.19	9918
0.00	1.40	0.22	0.40	2.02	0.31	8.69	8.38	5.89	5.89	9859
0.00	1.56	0.18	0.36	2.10	0.50	12.51	12.01	2.21	2.21	9701
0.00	1.60	0.16	0.32	2.08	0.39	12.61	12.22	5.66	5.66	9696
0.00	2.16	0.37	0.29	2.82	0.25	8.58	8.33	3.47	3.47	9703
0.00	3.12	0.42	0.42	3.96	0.28	8.69	8.41	4.00	4.00	9699
0.00	3.32	.....	.....	3.94	0.26	8.08	7.82	6.95	6.95	9360
0.00	4.08	0.32	0.46	4.86	0.35	8.35	8.00	6.87	6.87	9697
0.00	4.40	0.06	0.39	4.85	0.28	9.09	8.81	7.00	7.00	9717
0.00	4.00	0.47	0.30	4.77	0.35	10.69	10.34	4.90	4.90	9683
0.00	3.96	0.35	0.29	4.60	0.31	11.40	11.09	5.06	5.06	9716
0.00	5.50	0.34	0.44	6.28	0.29	7.03	6.74	5.16	5.16	9706
0.00	6.00	0.37	0.43	6.80	0.27	6.88	6.61	5.61	5.61	9719
0.07	5.04	3.20	0.11	8.42	0.11	15.19	15.08	16.37	16.37	9695
0.00	5.14	2.93	0.11	8.18	0.10	14.70	14.60	15.81	15.81	100

TABLE 12. ANALYSES OF MIXED FERTILIZER

Station No.	Manufacturer and brand	Grade	Place of sampling
	Swift & Co., Baltimore, Md.		
9456	Vigoro 4-12-4	4-12-4	New Haven
	Synthetic Nitrogen Products Corp., New York City		
9817	Nitrophoska 15-30-15.....	15-30-15	Southington ...
	I. P. Thomas & Sons, Philadelphia, Pa.		
9805	6% Guano 6-6-5.....	6-6-5	Guilford
9490	I. P. Thomas 5-8-7.....	5-8-7	Hamden
9498	Long Island Special 4-8-7.....	4-8-7	Guilford
9491	Tip Top Fertilizer 3-10-6.....	3-10-6	Hamden
9500	Truckers High Grade Guano 4-8-4.....	4-8-4	Guilford
9801	Victor Potash Fertilizer 2-8-5.....	2-8-5	Willimantic ...
	Virginia-Carolina Chemical Co., New York City		
9831	Bloomaid 5-10-4.....	5-10-4	Putnam
9442	V-C Aroostook Potato Grower 5-8-7.....	5-8-7	Hazardville
9832	V-C Fairway Fertilizer 8-6-5	8-6-5 ¹	Putnam
19	V-C Indian Chief Brand 5-3-5.....	5-3-5	Middletown
9554	V-C National Brand 4-8-10.....	4-8-10	Plainville
9555	V-C Owl Brand 2-12-4.....	2-12-4	Plainville
9829	V-C Double Owl Brand 4-8-7.....	4-8-7	Norwich
9443	V-C Tip Top Top Dresser 7-6-6.....	7-6-6	Hazardville
9444	V-C XXXX Fish and Potash 4-8-4.....	4-8-4	Hazardville
	F. H. Woodruff & Sons, Milford, Conn.		
9548	Woodco Lawn Food 10-6-4.....	10-6-4	Factory
	S. D. Woodruff & Sons, Orange, Conn.		
9799	Woodruff's Home Mixed 4-8-5.....	4-8-5	Factory
	Worcester Rendering Co., Auburn, Mass.		
9677	Prosperity Market Garden Fertilizer 5-8-7 ..	5-8-7	Waterford
9679	Prosperity All Crops Fertilizer 4-8-4.....	4-8-4	Groton
9680	Prosperity Corn and Grain Fertilizer 2-10-2..	2-10-2	Groton
9830	Prosperity Special Potato Fertilizer 4-8-10..	4-8-10	Putnam
9678	Prosperity Superior Top Dressing 7-6-6.....	7-6-6	Groton

¹Was formerly 6-6-5.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued

Nitrogen					Phosphoric acid			Potash		Station No.
In nitrates	In ammonia	Organic water-soluble	Organic water-insoluble	Total	Citrate-insoluble	Total	So-called "Available"	As muriate	Total	
%	%	%	%	%	%	%	%	%	%	
0.41	3.28	0.06	0.41	4.16	0.10	12.17	12.07	4.11	4.11	9456
1.63	13.04	0.08	0.15	14.90	0.06	30.49	30.43	14.22	14.22	9817
0.28	4.92	0.00	0.84	6.04	0.72	7.83	7.11	5.37	5.37	9805
0.00	4.28	0.09	0.57	4.94	0.52	8.99	8.47	6.95	6.95	9490
0.00	3.28	0.34	0.38	4.00	0.51	9.11	8.60	5.90	6.87	9498
0.00	2.44	0.22	0.43	3.09	0.78	10.91	10.13	5.80	5.80	9491
0.00	3.44	0.08	0.42	3.94	0.35	8.70	8.35	3.51	4.18	9500
0.00	1.79	0.10	0.43	2.32	0.41	8.96	8.55	4.36	5.17	9801
0.00	4.00	0.68	0.34	5.02	0.61	11.92	11.31	4.46	4.46	9831
0.00	3.78	0.96	0.30	5.04	0.61	8.45	7.84	7.46	7.46	9442
0.14	3.54	1.08	1.36	6.12	1.03	7.92	6.89	4.80	4.80	9832
0.81	1.08	0.68	2.79	5.36	0.24	3.81	3.57	0.30	4.86	19
0.00	3.52	0.42	0.20	4.14	0.67	9.36	8.69	9.95	9.95	9554
0.00	1.64	0.39	0.21	2.24	0.72	13.05	12.33	4.31	4.31	9555
0.30	3.54	0.13	0.29	4.26	0.50	9.10	8.60	7.04	7.04	9829
0.00	6.42	0.48	0.26	7.16	0.53	6.80	6.27	6.80	6.80	9443
0.00	3.40	0.47	0.31	4.18	0.58	8.18	7.60	4.42	4.42	9444
3.62	3.68	0.60	2.00	9.90	0.40	7.52	7.12	0.87	4.24	9548
0.00	3.44	0.23	1.07	4.74	0.44	9.79	9.35	5.33	5.33	9799
0.40	3.58	0.42	0.63	5.03	0.50	8.91	8.41	7.09	7.09	9677
0.41	2.78	0.24	0.59	4.02	0.38	9.08	8.70	4.55	4.55	9679
0.00	1.58	0.44	0.48	2.50	0.60	10.68	10.08	3.17	3.17	9680
0.37	2.62	0.54	0.63	4.16	0.58	8.90	8.32	10.26	10.26	9830
0.32	5.48	0.52	0.72	7.04	0.41	6.98	6.57	6.26	6.26	9678

TABLE 13. ANALYSES OF SPECIAL AND HOME MIXTURES

Station No.	Name of mixture	Place of sampling	Total nitrogen %	Phosphoric acid			Potash			Station No.
				Citrate-insoluble %	Total %	So-called "Available" %	As muriate %	Total %	Chlorine %	
9925	Sampled by Station Home Mixture for Corn	T. W. Ryan, Stratford	3.02	0.29	10.75	10.46	5.41	5.41	5.41	9925
9924	Home Mixture for Vegetables	T. W. Ryan, Stratford	5.18	0.41	8.55	8.14	5.74	5.74	5.74	9924
9284	Special Mixture for Corn	T. W. Ryan, Stratford	5.50	0.52	8.62	8.10	4.79	4.79	4.79	9284
9254	Sampled by Purchaser Fertilizer—Formula A	American Sumatra Tobacco Corp., Bloomfield	5.70	0.24	4.56	4.32	0.54	5.86	0.41	9254
9328	Fertilizer—Formula A (second sample)	American Sumatra Tobacco Corp., Bloomfield	5.65	0.30	4.34	4.04	0.57	5.57	0.43	9328
9329	Fertilizer—Formula B	American Sumatra Tobacco Corp., Bloomfield	5.52	0.38	4.71	4.33	0.61	6.56	0.46	9329
9374	Fertilizer—Formula B (second sample)	American Sumatra Tobacco Corp., Bloomfield	5.42	0.42	4.46	4.04	0.66	6.16	0.50	9374

9330	Fertilizer—Formula C	American Sumatra Tobacco Corp., Bloomfield	9.59	0.27	3.66	3.39	0.31	1.34	0.23	9330
8985	Fertilizer	Consolidated Cigar Corp., Hartford	5.52	0.64	4.03	3.39	...	7.08	...	8985
9260	Fertilizer—Mixture No. 1	Consolidated Cigar Corp., Hartford	5.79	0.74	4.14	3.40	0.60	7.64	0.45	9260
9261	Fertilizer—Mixture No. 2	Consolidated Cigar Corp., Hartford	5.69	0.69	4.63	3.94	0.72	8.51	0.54	9261
9035	Chicopee Farm Mixture Fertilizer	Consolidated Cigar Corp., Hartford	5.60	0.50	3.86	3.36	...	8.00	...	9035
9375	Deerfield Farm 1932 Shade Mixture No. 1	Consolidated Cigar Corp., Hartford	5.35	0.50	4.20	3.70	0.70	7.38	0.53	9375
9036	Shaker Farm Mixture Fertilizer No. 1	Consolidated Cigar Corp., Hartford	5.58	0.71	4.20	3.49	...	7.25	...	9036
9037	Shaker Farm Mixture Fertilizer No. 2	Consolidated Cigar Corp., Hartford	5.42	0.69	4.10	3.41	...	7.63	...	9037
9319	Shaker Farm Mixture Fertilizer No. 3	Consolidated Cigar Corp., Hartford	5.74	0.55	4.10	3.55	0.54	7.05	0.41	9319
9320	Fertilizer—Wolf Farm	Consolidated Cigar Corp., Hartford	6.02	0.35	3.62	3.27	0.70	7.88	0.53	9320
18	Home Mixed Fertilizer	Sidney Hall, Norwich	4.81	0.21	8.65	8.44	8.72	8.72	...	18
9986	Special Mixture for Tobacco ..	Henry E. Wells, Warehouse Point	10.46	...	4.60	...	1.18	19.20	0.29	9986

TABLE 14. ANALYSES OF SHEEP MANURE AND OTHER MATERIALS

Station No.	Manufacturer or brand	Place of sampling	Nitrogen		Total phosphoric acid		Potash		Station No.
			Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	
9518	A.C. Pulverized Sheep and Goat Manure. American Agricultural Chemical Co., West Haven	Roodner Grain Co., South Norwalk	1.44	1.23	1.71	1.00	2.15	2.00	9518
9776	Sheep Manure. Apothecaries Hall Co., Waterbury	Chas. R. Hawley, Winsted	1.29	1.23	1.00	0.50	3.19	2.00	9776
9535	Sheep and Goat Manure. Armour Fertilizer Works, New York City	Harrison & Gould, Milford	1.48	1.25	1.23	1.00	3.69	2.00	9535
9539	Davey Shredded Cattle Manure.	R. E. Landis,	2.10	1.00	1.77	...	3.08	2.00	9539
9511	Berkshire Sheep Manure. Berkshire Chemical Co., Bridgeport	Old Greenwich	2.04	1.80	1.83	...	4.32	2.00	9511
9465	Two-in-One Peat-Poultry Manure. C. E. Buell, Inc., Boston, Mass. ...	Seymour Grain & Coal Co., Seymour	3.08	3.00	3.25	3.25	1.22	1.50	9465
9457	Corenco Sheep Manure. Consolidated Rendering Co., Boston, Mass. ...	Lighborn & Pond Co., New Haven	1.50	1.23	1.25	0.50	3.64	2.00	9457
9646	"Sheep's Head" Pulverized Sheep Manure. Natural Guano Co., Aurora, Ill.	Lighborn & Pond Co., New Haven	2.15	2.00	1.26	...	3.26	2.00	9646

9543	Groz-It Brand Pulverized Sheep Manure, Pacific Manure & Fertilizer Co., San Francisco, Calif.	J. B. McArdle, Greenwich	1.37	1.50	0.98	0.75	2.95	2.50	9543
9601	Groz-It Brand Pulverized Sheep Manure, Pacific Manure & Fertilizer Co., San Francisco, Calif.	Frank S. Platt Co., New Haven	1.34	1.50	0.85	0.75	2.50	2.50	9601
9459	Premier Brand Pulverized Poultry Manure, Premier Poultry Manure Co., Chicago, Ill.	Lightborn & Pond Co., New Haven	5.04	4.93	2.75	2.75	1.12	1.30	9459
9803	Premier Brand Pulverized Sheep Manure, Premier Poultry Manure Co., Chicago, Ill.	Lightborn & Pond Co., New Haven	2.00	1.65	1.06	1.00	2.02	2.00	9803
9728	Wizard Brand Cattle Manure, Pulverized Manure Co., Chicago, Ill. .	Brainard Nurseries, Thompsonville	2.16	2.00	1.36	.. ¹	2.00	1.00	9728
9727	Wizard Brand Pulverized Sheep Manure, The Pulverized Manure Co., Chicago, Ill.	Brainard Nurseries, Thompsonville	2.06	2.00	2.08	.. ¹	3.77	2.00	9727
9704	Standard United States Sheep Manure, Standard Wholesale Phosphate & Acid Works, Baltimore, Md. ...	F. C. Benjamin, Danbury .	3.74	2.00	4.65	.. ¹	2.64	2.00	9704
9798	Sheep and Goat Manure, I. P. Thomas & Sons, Philadelphia, Pa. .	Fred C. Morse & Son, Guilford	1.90	1.23	5.35	1.00	5.19	2.00	9798
9488	Sheep Manure, Virginia-Carolina Chemical Co., New York City	A. D. Bridge's Sons, Hazardville	2.00	1.64	2.36	0.75	3.36	1.50	9488
9455	Driconure, Walker-Gordon Farms, Julietown, N. J.	Lightborn & Pond Co., New Haven	2.20	1.00	1.24	1.00	1.69	1.00	9455

¹Guaranteed 1 percent available phosphoric acid.

TABLE 15. ANALYSES OF LIMESTONE

Station No.	Manufacturer or brand	Sampled from stock of or sent by
	Allyndale Lime Kilns & Quarries East Canaan, Conn.	
7489	"Allyndale" Lime Stone— Sample No. 1	E. P. Allyn, East Canaan
7490	Disintegrated Lime Stone— Sample No. 2	E. P. Allyn, East Canaan
8594	"Allyndale" Lime Stone'	Allyn & Allyn, East Canaan
	Lee Lime Corp. Lee, Mass.	
8943	Hydrated Lime—Car 160184 ...	Consolidated Cigar Corp., Hartford
8944	Hydrated Lime—Car 170968 ...	Consolidated Cigar Corp., Hartford
8945	Hydrated Lime—Car 160426 ...	Consolidated Cigar Corp., Hartford
8983	Hydrated Lime—Car 169873 ...	Consolidated Cigar Corp., Hartford
9403	Agricultural Lime—Car 168789 .	Cullman Bros., Hartford
	Limestone Products Corp. of America, Newton, N. J.	
7480	Lime Crest Ground Limestone .	J. E. Miles, Oxford
	Miller Lime Products Corp., West Stockbridge, Mass.	
8756	Ground Limestone	American Sumatra Tobacco Corp., Hartford
8890	Hydrated Lime	Warner-Miller Co., New Haven ...
8957	Ground Limestone, Car 164854 .	American Sumatra Tobacco Corp., Bloomfield
	D. W. Smith & Bro., Ashley Falls, Mass.	
9926	Dolomite Limestone	Thomaston Supply Co., Thomaston
	Manufacturer unknown	
7498	Hydrated Lime "Nelco" Brand ..	Tobacco Substation, Windsor
7529	New Jersey Lime	Woodbury Co-op. Association, Woodbury
9606	Lime	W. T. Wallace, Canaan
9762	Hydrated Lime with Magnesia, No. 5	A. N. Shepard & Sons, Inc., Hartford
9147	Ground Limestone—Car 164253 .	American Sumatra Tobacco Co., Bloomfield
9210	Smith Lime—Car 16655	American Sumatra Tobacco Co., Bloomfield

¹SiO₂ 0.92%; Fe₂O₃ 0.27%; Al₂O₃ 0.09%; H₂O (by difference) 0.58%; CO₂ 0.48%.

AND SIMILAR MATERIALS

Chemical analysis				Total oxides	Mechanical analysis					Station No.
Lime (CaO)		Magnesia (MgO)			20 mesh	40 mesh	50 mesh	80 mesh	100 mesh	
Found	Guaranteed	Found	Guaranteed							
%	%	%	%	%	%	%	%	%	%	
30.93	21.23	....	52.16	92.5	58.5	37.5	22.0	14.5	7489
29.52	19.01	....	48.53	99.5	97.5	86.0	35.0	20.5	7490
57.72	39.94	....	97.66	....	....	....	....	....	8594
47.29	32.51	....	79.80	....	....	....	....	....	8943
47.66	32.70	....	80.36	....	....	....	....	....	8944
47.61	32.77	....	80.38	....	....	....	....	....	8945
48.89	32.01	....	80.90	....	....	....	....	....	8983
47.12	32.44	....	79.56	....	....	....	....	....	9403
42.65	6.58	....	49.23	99.5	98.5	97.0	89.5	86.5	7480
27.89	16.33	....	44.22	100.0	99.8	99.5	91.5	80.0	8756
58.43	9.18	....	67.61	....	....	....	....	....	8890
28.54	14.70	....	43.24	100.0	100.0	98.5	89.5	63.5	8957
31.33	53.58	21.40	39.71	52.73	100.0	93.5	76.2	52.0	45.8	9926
40.57	27.77	....	68.34	....	....	....	....	....	7498
39.19	7.33	....	46.52	99.5	98.5	97.5	92.0	86.5	7529
45.25	6.18	....	51.43	....	....	....	....	....	9606
41.56	28.60	....	70.16	....	....	....	....	....	9762
30.85	29.25	....	60.10	100.0	83.0	62.5	39.0	37.0	9147
30.81	21.40	....	52.21	100.0	84.2	67.5	42.0	36.5	9210

VIII. MISCELLANEOUS FERTILIZERS

SHEEP MANURE AND OTHER MANURES

Eighteen official samples of sheep, cattle and poultry manures were examined. One sample was analyzed for a purchaser.

Microscopic examination showed these to be natural products so far as could be determined, but No. 9704, Standard U. S. Sheep Manure, was a mixture containing muriate of potash, ground bone, considerable superphosphate, and feathers.

There were two deficiencies in potash and two in nitrogen, otherwise guaranties were maintained.

Analyses appear in Table 14.

LIMING MATERIALS

Agricultural liming materials are not classed as fertilizers in this State, but 19 samples have been analyzed for purchasers, the results being given in Table 15.

OTHER MISCELLANEOUS MATERIALS

Sixty samples of miscellaneous materials have been submitted by individuals, the materials being largely mixed fertilizer, muck deposits and sewage sludge. Partial analyses of several materials in this group are noted here for reference.

- 8543. Horn Shavings from a button factory. Nitrogen 14.3 per cent.
- 8544. Hoof Shavings from the same factory. Nitrogen 14.5 per cent.
- 9564. Peruvian Guano. Submitted by the Tobacco Substation. Nitrogen 16.02 per cent, total phosphoric acid 10.84 per cent, total potash 2.72 per cent.
- 9939. Bat Guano from a farm near Bridgeport. Nitrogen 11.97 per cent, total phosphoric acid 4.81 per cent, total potash 2.27 per cent.
- 9567. Corn Gluten Meal, submitted by the Tobacco Substation. Nitrogen 6.50 per cent, total phosphoric 1.21 per cent, total potash 0.57 per cent, CaO 0.91 per cent, MgO 0.57 per cent.

CHECK MEALS AND FERTILIZERS

Thirty samples of check cottonseed meal and seven samples of check fertilizer materials have been analyzed in the collaborative programs of the American Oil Chemists Society and the F. S. Royster Guano Co.

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¹Phosphoric acid is from bone.

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¹This was formerly 6-6-5 grade.