

BULLETIN 321

OCTOBER, 1930

COMMERCIAL FERTILIZERS
REPORT FOR 1930



Connecticut
Agricultural Experiment Station
New Haven

COMMERCIAL FERTILIZERS

REPORT FOR 1930

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Connecticut
Agricultural Experiment Station
New Haven

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COMMERCIAL FERTILIZERS REPORT FOR 1930

THE FERTILIZER LAW COMMERCIAL FERTILIZERS

The law defines the significance of the term "commercial fertilizers" as follows:

"The term 'commercial fertilizers' shall be construed to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring or soil amendment purposes, except barnyard manure and stable manure which have not been artificially treated or manipulated, marl, and lime. Cottonseed meal, rapeseed meal, castor pomace and all other vegetable products used as fertilizers, including the ashes of cotton hulls and wood ashes, shall be included as fertilizers within the meaning of this act and separate analysis fees shall be paid on each different grade which is sold or offered for sale in the state. The person responsible for paying the fees above prescribed may deduct from the total tonnage sold such sales of cottonseed meal or other vegetable products as are made to anyone who gives a written certificate on a form supplied by the Connecticut Agricultural Experiment Station stating that the material bought by him was to be used exclusively for feed and not for fertilizer."

COTTONSEED MEAL

Cottonseed meal is a fertilizer within the meaning of the statute but it is provided that when this product is sold for feeding purposes only, it shall be exempt from the tonnage tax. When sold as a feed, cottonseed meal is subject to registration under the terms of the feed law. By regulation, however, if it is sold exclusively as a fertilizer, or exclusively as a feed, it may be registered but once, and under the law that applies.

REGISTRATION, ETC.

Manufacturers, jobbers or individuals outside the State who ship concentrated commercial fertilizers into Connecticut are expected to register the brands so shipped and to pay the necessary fees thereon, and they generally do so. However, under the provisions of our law, if manufacturers or others outside the State neglect or refuse to register, the local dealer who handles such fertilizers is responsible for such registrations, registration fees and other legal requirements.

In the course of trade, fertilizers manufactured in another State frequently pass through the hands of several middlemen, none of

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

whom is within the immediate jurisdiction of our law, before they reach the local distributor. This Station makes reasonable investigation to find out the source of shipment of feeds found to be unregistered, but the law imposes no obligation upon it to do so. It is the plain duty therefore of local dealers who purchase fertilizers for resale and distribution to assure themselves that the brands they purchase are registered, or else be prepared to assume that responsibility themselves.

LABELLING, ETC.

The law specifies the information which shall be given on the label as follows:

1. *Weight of each package in pounds.*
2. *Brand name or trade mark.*
3. *Analysis:*
 - (a) *Available phosphoric acid, per cent.*
 - (b) *Total phosphoric acid, per cent.*
 - (c) *Nitrogen, per cent.*
 - (d) *Equivalent ammonia, per cent.*
 - (e) *Potash soluble in water, per cent.*
4. *Name and address of the manufacturer or of the person who is responsible for the statement of the guaranty.*

In the case of bone meal, tankage or other organic products, and in basic slag and mineral phosphates in which a large percentage of the phosphoric acid is not available by laboratory methods, the phosphoric acid shall be claimed as total phosphoric acid unless it is desired to claim available phosphoric acid instead, in which case the guaranty shall take the form set forth above.

The label may be a tag attached to the package or a statement printed thereon. Percentages shall be minimum percentages only.

The presence of leather in its various forms, wool waste, hair, or any inert nitrogenous material shall be declared on the label unless, by processing, the activity of these materials has been rendered satisfactory as determined by official methods.

When potash is derived from sulfate or carbonate of potash it may be so claimed.

No claim or guaranty for less than 0.82 per cent of nitrogen or for less than one per cent of phosphoric acid, or for less than one per cent of potash shall be regarded in the registration or analysis of any commercial fertilizer.

TONNAGE TAX

The seller must also, on January 1 and July 1, report the tonnage of fertilizer sold within the preceding six months and pay

to the director of the Station a tonnage fee of six cents per ton. On request, copies of the law and blanks for registration and for tonnage reports will be supplied by the Station.

If, however, proper labeling, registration and payments have been provided for by the manufacturer of the brands or by another responsible person, all sellers of such brands are released from the above mentioned requirements.

PRECAUTIONS TO BE OBSERVED IN DRAWING SAMPLES FOR ANALYSIS

The analysis of a fertilizer is of no value unless the sample analyzed represents as nearly as possible the stock from which the sample was drawn. The law prescribes the procedure to be followed by authorized agents of this Station when taking official samples for analysis, as follows:

"When samples are taken from fertilizers in bags, a tube shall be used, and it shall be inserted at one end of the bag and shall pass substantially the entire length of the bag, so as to take a core of the material being sampled from substantially the entire length of the bag. Samples thus taken from individual bags shall be thoroughly mixed, and the official samples shall be taken from the mixture so drawn by the method known as 'quartering.' Samples of fertilizers taken as herein provided shall be taken from at least five *per centum* of the separate original unopened packages in the lot, for the mixture from which the official samples shall be taken. If less than one hundred bags are in the lot, at least five bags shall be sampled; if less than five bags, all shall be sampled. Broken packages shall not be sampled."

GRATUITOUS ANALYSES

Under the fertilizer law the Station is charged only with the analysis of samples drawn by its own agents. It does, however, each year analyze a considerable number of samples drawn by individuals, representing stock purchased by them for their own use. The object of the purchaser is to satisfy himself as to whether he has obtained goods of the grade represented and, perhaps, to obtain evidence upon which to base a claim for shortage should the materials not meet their guaranties. The Station assumes no responsibility for the sampling in case of such unofficial samples and can only vouch for the accuracy of the results obtained on the materials as submitted. Since a representative sample is as essential as an accurate analysis in judging the quality of a shipment of fertilizer, it is evident that a satisfactory adjustment will seldom be effected on the basis of an unofficial sample. Notwithstanding certain objections which may be raised to the practice of analyzing samples submitted by individuals, the Station is disposed to continue such work as long as there is evidence that it constitutes a useful service.

REGISTRATIONS

LATE REGISTRATIONS FOR 1929

To the brands registered for 1929 in our last report should be added:

International Agricultural Corp., 38 Chauncy St., Boston, Mass.

Basic Slag
 Castor Pomace
 Cotton Hull Ash (sold on analysis basis)
 Cottonseed Meal 41%
 Multiple Strength 10-16-14
 Nitrate of Potash
 Peruvian Guano

REGISTRATIONS OF 1930

For 1930, 68 firms and individuals registered at this Station for sale in this State 439 brands of fertilizers. As required by statute the brands so registered are listed as follows:

American Agricultural Chemical Co., New Haven Sales Dept., New Haven, Conn.

AA Top Dresser
 AA 16% Superphosphate
 AAC Acme Fertilizer
 AAC Aroostook Potato Manure
 AAC Castor Pomace
 AAC Complete General Fertilizer
 AAC Double A Tobacco Fertilizer
 AAC Dry Ground Fish
 AAC General Crop Fertilizer
 AAC Grass and Lawn Top Dressing
 AAC Hi-Grade Tobacco Manure
 AAC Monarch Fertilizer
 AAC Muriate of Potash
 AAC Nitrate of Soda
 AAC Peerless Potato Manure
 AAC Prolific 10% Potash Fertilizer
 AAC Pulverized Sheep & Goat Manure
 AAC Special Ground Bone
 AAC Sulfate of Ammonia
 AAC Sulfate of Potash
 AAC Tobacco Starter
 Agrico
 Agrico for Aroostook
 Agrico for Corn
 Agrico for Truck
 Bowker's All Round Fertilizer
 Bowker's Market Garden Fertilizer
 Bowker's Stockbridge Early Crop Manure
 Bowker's Stockbridge Hill & Drill Fertilizer
 Bowker's Stockbridge Tobacco Manure
 Bradley's Blood, Bone and Potash
 Bradley's Complete Tobacco Manure
 Bradley's Northland Potato Grower

Bradley's Potato Manure
 Bradley's XL Superphosphate of Lime
 National Aroostook Special Fertilizer
 National Complete Tobacco Fertilizer
 National Market Garden Fertilizer
 National Pine Tree State Potato Fertilizer
 Sanderson's Complete Tobacco Grower
 Sanderson's Corn Superphosphate
 Sanderson's Formula A
 Sanderson's Formula B

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

Aero Brand Cyanamid
 Ammo-Phos A
 Ammo-Phos B
 Ammo-Phos-Ko No. 1
 Ammo-Phos-Ko No. 2
 Ammo-Phos-Ko No. 3

Anglo-Chilean Nitrate Sales Corp., 120 Broadway, New York City.

Nitrate of Soda

Apothecaries Hall Co., Waterbury, Conn.

Basic Slag Phosphate
 Bone Meal 2.46%
 Bone Meal 3.29%
 Bone & Meat Tankage
 Carbonate of Potash
 Castor Pomace
 Cotton Seed Meal
 Dry Ground Fish
 Lawn Fertilizer
 Liberty Corn & All Crops 2-8-2
 Liberty Corn, Fruit & All Crops 2-12-4
 Liberty Fertilizer 3-10-6
 Liberty Fertilizer 8-16-8
 Liberty Fertilizer 10-16-14
 Liberty Fish, Bone & Potash 3-8-3
 Liberty High Grade Market Gardeners 5-8-7
 Liberty High Grade Tobacco Manure 7-3-7
 Liberty Onion Special (Potash as Sulfate) 4-8-7
 Liberty Potato & General Crops 4-8-10
 Liberty Potato & Market Gardener's Special 4-8-4
 Liberty Potato & Vegetable 2-8-10
 Liberty Special Fertilizer for Fruit 7-8-6
 Liberty Tobacco Special (Cotton Seed Meal Base) 5-3-5
 Liberty Tobacco Starter
 Liberty Top Dresser for Grass & Grain 10-3½-8
 Muriate of Potash
 Nitrate of Potash
 Nitrate of Soda
 Nitrate of Soda & Potash
 Precipitated Bone
 Sulfate of Ammonia
 Sulfate of Potash
 Sulfate of Potash & Magnesia
 Super Phosphate (Acid Phosphate)
 Tankage

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

Armour's Big Crop Fertilizers-Bone Meal 3-48
 Armour's Big Crop Fertilizers 2-12-4
 Armour's Big Crop Fertilizers 3-8-4
 Armour's Big Crop Fertilizers 4-6-10
 Armour's Big Crop Fertilizers 4-8-4
 Armour's Big Crop Fertilizers 4-16-4
 Armour's Big Crop Fertilizers 5-8-7
 Armour's Big Crop Fertilizers 7-11-10
 Armour's Big Crop Fertilizers 8-6-6
 Armour's Big Crop Fertilizers—16% Superphosphate
 Armour's Big Crop Fertilizers—20% Superphosphate
 Armour's Big Crop Tobacco Special 5-3-5
 Castor Pomace
 Cotton Seed Meal
 Dried Blood
 Fish
 Muriate of Potash
 Nitrate of Soda
 Sheep & Goat Manure
 Sulfate of Ammonia
 Sulfate of Potash
 Vert

Ashcraft-Wilkinson Co., Atlanta, Ga.

Helmet
 Monarch
 Paramount

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

Nitrate of Soda
 16% Acid Phosphate
 Special Mixture for General Use
 Special Mixture with 6% Potash
 Tip Top Brand

Baker Castor Oil Co., 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., Inc., 60 Canal St., Stamford, Conn.

Bartlett Green Tree Food

Berkshire Chemical Co., Bridgeport, Conn.

Berkshire Bone Meal
 Berkshire Castor Pomace
 Berkshire Complete Fertilizer
 Berkshire Complete Tobacco Fertilizer
 Berkshire Dry Ground Fish, 8.22%
 Berkshire Dry Ground Fish, 9.45%
 Berkshire Fine Ground Bone
 Berkshire Grass Special Fertilizer
 Berkshire High Grade Tobacco Fertilizer

Berkshire Long Island Special Fertilizer
 Berkshire Market Garden Fertilizer
 Berkshire Superphosphate
 Berkshire Tobacco Special Fertilizer
 Berkshire Tobacco Starter Fertilizer
 Berkshire Truck Fertilizer
 Carbonate of Potash
 Muriate of Potash
 Nitrate of Potash and Soda
 Precipitated Bone Phosphate
 Sulfate of Potash

Amos D. Bridge's Sons, Inc., Hazardville, Conn.
 Corn, Onion, Potato and General Purpose
 Special Tobacco Fertilizer

F. W. Brode Corp., Memphis, Tenn.
 "Owl Brand" 41% Prime Cotton Seed Meal

A. H. Case & Co., Inc., Buffalo, N. Y.
 Par Plus Brand Reinforced Sheep Manure

C & R Sales Co., Worcester, Mass.
 C-R Lawn Shrub Fertilizer 5-6-5

**Central Chemical Co., Inc., Hagerstown, Md. (Branch office, Bridge-
 port, Conn.).**
 Castor Pomace
 Gro-All Cobbler Brand
 Gro-All Corn and Grain
 Gro-All Garden Brand
 Gro-All High Grade Potato
 Gro-All Potato Special
 Gro-All Tobacco Special
 Gro-All Tobacco Starter
 Gro-All Wrapper Brand
 Sulfate of Potash

**Colloidal Phosphate Co. of New York, 1035 Wallabout Market,
 Brooklyn, N. Y.**
 Colloidal Phosphate

Connecticut Fat Rendering & Fertilizer Corp., West Haven, Conn.
 Tankage

Consolidated By-Product Co., 30th & Race Sts., Philadelphia, Pa.
 Consolidated Bone Meal

Consolidated Rendering Co., Boston, Mass.
 Castor Pomace
 Corenco Sheep Manure
 Dry Ground Fish
 Ground Bone
 Muriate of Potash
 Sulfate of Ammonia

Sulfate of Potash
 Superphosphate 16%
 Superphosphate 20%
 Tankage 6-30
 Tankage 9-20

Davey Tree Expert Co., Kent, Ohio.

Davey Shredded Cattle Manure
 Davey Tree Food

Eastern States Farmers' Exchange, Springfield, Mass.

E. S. 0-14-6
 E. S. 4-8-8
 E. S. 4-10-6
 E. S. 4-12-4
 E. S. 4-20-16
 E. S. 6-8-6
 E. S. 6-15-9
 E. S. 6-18-6
 E. S. 8-16-16
 E. S. Calurea
 E. S. Castor Pomace
 E. S. Dry Ground Fish
 E. S. Fine Bone Meal
 E. S. Ground Animal Tankage
 E. S. Muriate of Potash
 E. S. Nitrate of Soda
 E. S. Nitrate of Potash
 E. S. Precipitated Bone
 E. S. 8-16-16 Potash from Sulfate
 E. S. Sulfate of Ammonia
 E. S. Sulfate of Potash
 E. S. Superphosphate 16%
 E. S. 8-4-8 Tobacco
 E. S. 10-5-10 Tobacco
 E. S. 14-7-14 Tobacco

Ed. Eggert, Hartford, Conn.

Diamond "EE" Cotton Hull Ashes

Essex Fertilizer Co., Boston, Mass.

Essex Complete Manure 5-8-7
 Essex Fish Brand Fertilizer For All Crops 3-8-4
 Essex Market Garden 4-8-4
 Essex Peerless Potato Manure 4-6-10
 Essex Top Dressing 7-6-5

Ford Motor Co., Dearborn, Michigan.

Ford Ammonium Sulfate

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

Frisbie's 5-8-7
 Frisbie's 5-10-5
 Frisbie's Corn & Grain Fertilizer 2-10-2
 Frisbie's Fine Bone Meal
 Frisbie's Market Garden 5-8-7
 Frisbie's Special 3-8-4

Frisbie's Special Vegetable & Potato Grower 4-8-4
Frisbie's Tobacco Grower 7-3-7
Frisbie's Top Dresser 8-6-6

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

G&O Bone Meal
G&O Lawn & Garden No-Filler Fertilizer
G&O Sheep Manure

The Grasselli Chemical Co., Inc., Cleveland, Ohio.

Dugro (Grasselli Plant Food)

Humphreys-Godwin Co., Memphis, Tenn.

Bull Brand Cottonseed Meal
Danish Brand Cottonseed Meal
Dixie Brand Cottonseed Meal

International Agricultural Corp., 38 Chauncy St., Boston, Mass.

Caribee 5-8-7
Caribee 7-6-5
Caribee 7-12-10
Cottonseed Meal 41%
Cotton Hull Ash
Crop Grower 5-8-7
Ideal 4-8-4
Multiple Strength 10-16-14
Nitrate of Potash
Nitrate of Soda
Sulfate of Ammonia
Super Phosphate 0-16-0
Super Phosphate 0-18-0

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

4-6-10
4-8-4
5-8-7

John Joynt, Lucknow, Ontario.

"Joynt Brand" Wood Ashes

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

Castor Pomace
Kellogg's Pure Old Process Linseed Meal 5.14
Kellogg's Pure Old Process Linseed Meal 5.44

Koppers Products Co., Pittsburgh, Pa.

Koppers Velvet Lawn

Lowell Fertilizer Co., Boston, Mass.

Lowell Animal Brand, A High Grade Manure For All Crops 3-8-4
Lowell Bone Fertilizer 2-10-2
Lowell Corn and Vegetable 4-8-4
Lowell Market Garden Manure 5-8-7
Lowell Potato Grower 4-6-10
Lowell Tobacco Manure 5-3-5
Lowell Top Dressing 7-6-5

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

"Lovit Brand" 41% Cotton Seed Meal

Maine Farmers' Exchange, 708 Grain & Flour Exchange Bldg., 177 Milk St., Boston, Mass.

M. F. E. Produce-More 3-12-3
 M. F. E. Produce-More 4-8-4
 M. F. E. Produce-More 4-6-10
 M. F. E. Produce-More 5-8-7
 M. F. E. Produce-More 16% Acid Phosphate

Mapes Formula & Peruvian Guano Co., 270 Madison Ave., New York City.

The Mapes Connecticut Valley Special
 The Mapes Corn Manure
 The Mapes General Tobacco Manure
 The Mapes General Truck Manure
 The Mapes General Use Manure
 The Mapes Nitrate of Soda
 The Mapes Onion Manure
 The Mapes Potato Manure
 The Mapes Special Trucker
 The Mapes Special Trucker "SP"
 The Mapes Tobacco Ash Constituents
 The Mapes Tobacco Ash and Starter
 The Mapes Tobacco Manure Wrapper Brand
 The Mapes Tobacco Starter Improved
 The Mapes Top Dresser

Millane Nurseries and Tree Expert Co., Cromwell, Conn.

Millane Shade Tree Food

Miller Fertilizer Co., Baltimore, Md.

Miller's 5-10-5
 Miller's Bone Meal
 Miller's Crop Grower 5-8-7
 Miller's Muriate of Potash
 Miller's Nitrate of Soda
 Miller's Onion & Vegetable 4-8-4
 Miller's Superphosphate 16%
 Miller's Top Dresser 8-6-6
 Sulfate of Ammonia

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 Complete Manure 4-6-10
 New England Corn Phosphate 2-10-2
 New England Market Garden Manure 5-8-7
 New England Potato and Vegetable Manure 4-8-4
 New England Super, A High Grade Fertilizer For All Crops 3-8-4
 New England Tobacco Manure 5-3-5

**N. V. Potash Expert My. of Amsterdam, Holland, 19 West 44th St.,
New York City.**

Muriate of Potash
Sulfate of Potash
Sulfate of Potash-Magnesia

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

Cotton Hull Ashes
Dry Ground Fish
J. W. Alsop Special 7-4-6
Nitrate of Soda
Old Deerfield 4-8-4
Old Deerfield 5-3-5
Old Deerfield 5-8-7
Old Deerfield 8-6-6
Old Deerfield Castor Pomace
Old Deerfield Complete Tobacco 7-3-7
Old Deerfield Tobacco Starter 6-8-12
Precipitated Bone
Steamed Bone
Sulfate of Ammonia
Sulfate of Potash

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

High Grade Carbonate of Potash 96/98
High Grade Sulfate of Potash
O. & W. Acid Phosphate
O. & W. Blue Label Tobacco Fertilizer
O. & W. Castor Pomace
O. & W. Complete Market Garden Fertilizer
O. & W. Complete Tobacco Fertilizer
O. & W. Cotton Hull Ashes
O. & W. Dry Ground Fish
O. & W. Grass Fertilizer
O. & W. High Grade Potato & Vegetable Fertilizer
O. & W. High Grade Starter & Potash Compound
O. & W. High Grade Tobacco Starter
O. & W. Nitrate of Soda
O. & W. Nitrate of Potash 95%
O. & W. Precipitated Bone Meal
O. & W. Pure Bone Meal
O. & W. Sulfate of Ammonia
O. & W. Tankage
Wilcox Corn Special
Wilcox High Grade Fish & Potash
Wilcox Potato & Vegetable Phosphate
Wilcox Top Dresser

Pacific Manure & Fertilizer Co., 429 Davis St., San Francisco, Calif.
Groz-It Brand Pulverized Sheep Manure

Parmenter & Polsey Fertilizer Co., Boston, Mass.

"P&P" Maine Potato Fertilizer 4-6-10

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Plantspur Fertilizer
Dallium—The Fertilizer for Dahlias

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

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

Premier Brand Poultry Manure
Premier Brand Sheep Manure

Pulverized Manure Co., Chicago, Ill.

Wizard Brand Cattle Manure
Wizard Brand Pulverized Sheep Manure

The Rogers & Hubbard Co., Portland, Conn.

3-8-4
4-8-4
4-8-10
5-8-7
6-6-4
8-6-6
3 & 50 Bone
Dry Ground Fish
Gro-Fast Lawn Fertilizer
Hubbard's "Bone Base" Oats and Top Dressing
Hubbard's "Bone Base" Fertilizer for Seeding Down
Hubbard's "Bone Base" Soluble Corn and General Crops Manure
Hubbard's "Bone Base" Soluble Potato Manure
Hubbard's "Bone Base" Soluble Tobacco Manure
Hubbard's Pure Raw Knuckle Bone Flour
Hubbard's Strictly Pure Fine Bone
Nitrate of Soda
Rogers & Hubbard's All Soils-All Crops Fertilizer
Rogers & Hubbard's Climax Tobacco Brand
Rogers & Hubbard's Corn and Grain Fertilizer
Rogers & Hubbard's High Potash Fertilizer
Rogers & Hubbard's Tobacco Grower, Vegetable Formula
Rogers & Hubbard's Potato Fertilizer
Rogers & Hubbard's Tunaker Tobacco Brand
Sulfate Potash
Superphosphate

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

Ruhm's Lime Phosphate (Phosphate rock, washed and ground)

F. Rynveld & Son, 350 Greenwich St., New York City.

Rynveld's Bone Meal Fertilizer

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

"Swift-Sure" 3-50 Bone Meal
"Swift-Sure" Bone Meal 4½-47
"Swift-Sure" Tobacco & Gen'l Use 3-10-3
"Swift-Sure" Starter 4-10-0

Springfield Rendering Co., Springfield, Mass.

Springfield 3-8-4 Fertilizer
Springfield 4-8-4 Fertilizer
Springfield 4-8-7 Fertilizer

Springfield 5-8-7 Fertilizer
 Springfield 5-5-5 Lawn & Shrub Fertilizer
 Springfield 5-3-5 Tobacco Special
 Springfield 7-6-5 Top Dresser

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

5-10-5
 7-6-6
 Animal Tankage, 4.94%
 Animal Tankage, 7.40%
 Castor Pomace
 Connecticut Valley Prize Tobacco Grower
 Evergreen Fish Guano
 Fish, Bone & Potash
 Fish Meal
 Grain Grower
 Jumbo Champion Grower
 Mammoth Potato Grower
 Muriate of Potash
 Nitrate of Soda
 Old Fertility
 Our Pride
 Potato & Vegetable Fertilizer
 Royal Potato Grower
 Service Mixture
 Sheep Manure
 Sulfate of Ammonia
 Sulfate of Potash
 Superphosphate 16%
 Superphosphate 18%
 Superphosphate 20%
 Steamed Bone Meal, 3.00%
 Steamed Bone Meal, 2.50%
 Truckers Fish Guano

Swift & Co. Fertilizer Works, Court Square Bldg., Baltimore, Md.
 Vigoro

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

Cal-Nitro
 Calcium Nitrate (Nitrate of Lime)
 Calurea
 Nitrophoska No. 1
 Nitrophoska No. 2
 Urea (Floranid-Urea)

Tennessee Copper & Chemical Corp., Lockland, Cincinnati, Ohio.
 Loma

I. P. Thomas & Son Co., Philadelphia, Pa.

Castor Pomace
 Economy Fertilizer 3-12-3
 I. P. Thomas 5-8-7
 Long Island Special 4-8-7
 Nitrate of Soda
 Pure Ground Bone

7% Guano 7-6-5
Sheep and Goat Manure
16% Super Phosphate
Thomas' Tobacco Grower 5-4-5 (Sulfate of Potash)
Tip Top Super Phosphate 3-10-6
Truckers High Grade Guano 4-8-4
Victor Potash Fertilizer 2-8-5

Virginia-Carolina Chemical Corp., 120 Broadway, New York City.

Bloomaid
V-C Aroostook Potato Grower
V-C Fairway Fertilizer
V-C XXXX Fish & Potash

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

"Driconure"

Wessel, Duval & Co., 1 Broadway, New York City.

Chilean Nitrate of Soda

The Wilcox Fertilizer Co., Mystic, Conn.

Wilcox Dry Ground Fish

S. D. Woodruff & Sons, Orange, Conn.

Woodruff's Home Mixed Fertilizer

Worcester Rendering Co., Auburn, Mass.

Prosperity Brand Corn & Grain
Prosperity Brand Complete Dressing
Prosperity Brand Market Garden Fertilizer
Prosperity Brand Potato & Vegetable Fertilizer
Prosperity Brand Special Potato
Prosperity Brand Superior Top Dressing

INSPECTION OF 1930

The Station Agent has visited 93 towns and villages in the State and has drawn 498 official samples of fertilizer, including all the registered brands which could be found. The classification of these and of other samples analyzed is given in the summary.

CLASSIFICATION OF FERTILIZER MATERIALS, 1930

	No. of samples	Page
I. Containing Chiefly Nitrogen:		
Nitrate of soda	26	20
Calcium nitrate	2	20
Calnitro	2	20
Calurea	6	21
Urea	2	21
Ammonium sulfate	12	25
Castor pomace	61	25
Cottonseed meal	245	29
Linseed meal	13	29
Horn and hoof meal	3	40
II. Containing Chiefly Phosphoric Acid:		
Precipitated bone phosphate	13	40
Superphosphate	20	40
Basic slag	2	41
Lime phosphate	1	41
III. Containing Chiefly Potash:		
Carbonate of potash	27	45
Muriate of potash	10	45
Sulfate of potash	23	45
Sulfate of potash and magnesia	2	45
Cottonhull ashes	65	46
Wood ashes	1	46
IV. Containing Nitrogen and Potash:		
Nitrate of potash	7	55
Nitrate of potash and soda	3	55
V. Containing Nitrogen and Phosphoric Acid:		
Dry ground fish	56	57
Tankage	8	57
Ground bone	51	57
VI. Mixed Fertilizers:		
Containing nitrogen and phosphoric acid	9	70
Containing phosphoric acid and potash	1	70
Containing nitrogen, phosphoric acid and potash	233	70
Special and home mixtures	49	75
VII. Miscellaneous:		
Sheep manure	17	98
Lime	20	98
Other miscellaneous	65	98
Check meals and fertilizers	45	98
Total	1100	

I. RAW MATERIALS CHIEFLY VALUABLE FOR NITROGEN

NITRATE OF SODA

Nitrate of soda is commercial sodium nitrate containing not less than 15 per cent of nitrogen, chiefly as sodium nitrate.¹ It is obtained from natural deposits in Chili and also, in recent years, by synthetic methods operated on a commercial basis in the United States and in Europe.

Twenty-six samples were examined, all of which exceeded 15 per cent of nitrogen and all met or exceeded guaranties where guaranties were given. The average nitrogen content found in the samples examined was 15.87 per cent.

Price quotations have been limited in number but at \$58 per ton nitrogen in this raw material has been purchased for about 18 cents per pound.

Analyses are given in Table I.

CALCIUM NITRATE

This product is produced synthetically in Europe where nitrogen of the air is converted into nitric acid and the nitric acid combined with limestone.² The salt as offered in the fertilizer trade contains about 15.5 per cent of nitrogen. It is shipped in special containers to avoid absorption of moisture so far as possible.

Two samples were examined, one of which was guaranteed 15 per cent of nitrogen and which contained 15.15 per cent. The other sample was considerably under 15 per cent but the guaranty was not known.

Analyses are given in Table I.

CALNITRO

Calnitro is a trade name for a German product similar to calcium nitrate but containing about 20.5 per cent of nitrogen. It is hygroscopic and should be stored under dry conditions. About one-half of the nitrogen is in the form of nitrate and the remainder is in the form of ammonia nitrogen.

Two samples were examined, both of which satisfied the guaranties.

Analyses are given in Table I.

¹ Definition of Association of Official Agricultural Chemists.

² When no A. O. A. C. definitions are given, descriptions have been taken from the Dictionary of Fertilizer Materials, published by the American Fertilizer.

CALUREA

Calurea is a trade name for a German product derived from synthetic urea and calcium nitrate. It contains about 34 per cent of nitrogen, four-fifths of which is in the form of urea and the remainder in the form of nitrate nitrogen.

Six samples were examined, three of which exceed the guaranty of 34 per cent and three did not. The deficient samples ranged from 33.20 to 33.84 per cent of nitrogen according to our findings.

Analyses are given in Table I.

UREA

This is also a synthetic product made on a large scale in Germany. The commercial grade used for fertilizer contains 46 per cent of nitrogen.

Of the two samples examined one contained slightly more than 46 per cent and the other slightly less than that amount.

Analyses are given in Table I.

TABLE I. ANALYSES OF NITRATE OF SODA, ETC.

Station No.	Manufacturer or Jobber	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
Nitrate of Soda				
3899	American Agricultural Chemical Co., New York City ..	Station agent. Stock of S. P. Strole, New Britain	16.14	15.22
3194	Anglo-Chilean Nitrate Sales Corp., New York City ..	American Sumatra Tobacco Co., Bloomfield	16.00	15.50
3195	Anglo-Chilean Nitrate Sales Corp., New York City ..	American Sumatra Tobacco Co., Bloomfield	15.76	15.50
3196	Anglo-Chilean Nitrate Sales Corp., New York City ..	American Sumatra Tobacco Co., Bloomfield	16.04	15.50
3197	Anglo-Chilean Nitrate Sales Corp., New York City ..	American Sumatra Tobacco Co., Bloomfield	15.84	15.50
4069	Anglo-Chilean Nitrate Sales Corp., New York City ..	Station agent. Stock of J. A. Smith, Highwood	16.12	15.50
4097	Apothecaries Hall Co., Waterbury	Station agent. Stock of J. A. Glasnapp, West Cheshire ..	16.00	15.21
3307	Apothecaries Hall Co., Waterbury	Hatheway & Steane, Inc., Hartford	16.10	15.21
3374	Apothecaries Hall Co., Waterbury	Hatheway & Steane, Inc., Hartford	15.88	15.21
3485	Apothecaries Hall Co., Waterbury	Hatheway & Steane, Inc., Hartford	16.04	15.21
2472 ¹	Apothecaries Hall Co., Waterbury	W. L. Harris, Hartford	14.84	14.80
4118	Apothecaries Hall Co., Waterbury	P. Lorillard Co., Windsor ..	16.04	15.21
4301	Apothecaries Hall Co., Waterbury	A. N. Shepard & Son, Hartford ..	15.80	15.21
4429	Armour Fertilizer Works, New York City ..	Station agent. Stock of Carman Pompey, Plainville ..	16.04	14.81
3980	Associated Seed Growers, New Haven ..	Station agent at factory	15.04	15.00
3962	Arcadian, The Barrett Co., New York City ..	Station agent. Stock of L. T. Frisbie Co., New Haven ..	16.32	16.25
4514	Eastern States Farmers' Exchange, Springfield, Mass.	Station agent. Stock of H. H. McKnight, Ellington	15.96	15.00
4219	Old Deerfield Fertz. Co., So. Deerfield, Mass.	Station agent. Stock of Joseph Winn, Enfield	15.90	15.50
3953	Olds & Whipple, Inc., Hartford ..	Station agent at factory	16.00	15.00
3898	The Rogers & Hubbard Co., Portland ..	Station agent. Stock of Cadwell & Jones, Hartford ..	15.46	14.80
4078	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Station agent. Stock of Rippe Bros., Westport	16.10	15.00

¹ 1929 stock.

TABLE I. ANALYSES OF NITRATE OF SODA, ETC.—*Concluded.*

Station No.	Manufacturer or Jobber	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
Nitrate of Soda				
4191	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Station agent. Stock of Lyman Bros., Talcottville	15.78	15.00
4067	I. P. Thomas & Son Co., Philadelphia, Pa.	Station agent. Stock of L. M. Benham, Highwood	16.00	15.00
2167 ¹	Manufacturer unknown	John M. Herr, Burnside	16.00	.....
2170 ¹	Manufacturer unknown	John M. Herr, Burnside	15.50	.....
4249	Manufacturer unknown	Station agent. Stock of Tobacco Station, Windsor ...	15.88	.....
Calcium Nitrate (Nitrate of Lime)				
3895	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of J. E. Shepard, So. Windsor	15.76	15.00
4236	Manufacturer unknown	Station agent. Stock of Tobacco Station, Windsor ...	14.54	.....
Cal-Nitro				
4243	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Tobacco Station, Windsor ...	20.57	20.50
4666	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Olds & Whipple, Inc., Hartford	20.66 ²	20.50
Calurea				
2165	Berkshire Chemical Co., Bridgeport	John M. Herr, Burnside	33.32	.....
4432	Eastern States Farmers' Exchange, Springfield, Mass.	Station agent. Stock of E. W. Woolam, Warehouse Point	33.84	34.00
4778	Synthetic Nitrogen Products Corp., New York City ...	John M. Herr, Burnside	33.20	34.00
3955	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Olds & Whipple, Inc., Hartford	34.68	34.00
4361	Synthetic Nitrogen Products Corp., New York City ...	L. Wetstone & Sons, Hartford	34.08	34.00
4240	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Tobacco Station, Windsor ..	34.28	34.00
Urea				
3956	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Olds & Whipple, Inc., Hartford	46.12	46.00
4235	Synthetic Nitrogen Products Corp., New York City ...	Station agent. Stock of Tobacco Station, Windsor ..	45.92	.....

¹ 1929 stock.² Nitrogen in Nitrates 10.45%; Nitrogen in Ammonia 10.00%.

TABLE II. ANALYSES OF SULFATE OF AMMONIA.

Station No.	Manufacturer or Jobber	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
3900	American Agricultural Chemical Co., New York City ..	Station agent. Stock of S. P. Strople, New Britain	20.64	20.56
4436	Apothecaries Hall Co., Waterbury	Station agent at factory	20.88	20.58
4430	Armour Fertilizer Works, New York City	Station agent. Stock of Bartlett Tree Expert Co., Stamford	20.62	20.56
3906	Arcadian. Barrett Co., New York City	Station agent. Stock of The Rogers & Hubbard Co., Portland	20.62	20.56
4081	The Barrett Co., New York City	Station agent. Stock of Berkshire Chemical Co., Bridgeport	20.96	20.56
3967	Consolidated Rendering Co., Boston, Mass.	Station agent. Stock of L. T. Frisbie Co., New Haven ..	20.82	20.50
4494	Eastern States Farmers' Exchange, Springfield, Mass.	Station agent. Stock of P. W. Caldwell, New Milford ...	20.68	20.50
4897	Ford Motor Co., Fordson, Mich.	Station agent. Stock of Ford Agency, New Haven	20.88	20.80
4223	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Station agent. Stock of Joseph Winn, Enfield	20.76	20.50
3915	Olds & Whipple, Inc., Hartford	Station agent at factory	20.62	20.58
4189	Standard Wholesale Phos. & Acid Works, Baltimore, Md.	Station agent. Stock of Lyman Bros., Talcottville	21.04	20.56
4037	Koppers Velvet Lawn. Koppers Products Co., Pittsburgh, Pa.	Station agent. Stock of Jordan Hardware Co., Willimantic	20.88	20.75

AMMONIUM SULFATE

Sulfate of ammonia is made in this country almost entirely from sulfuric acid and ammonia obtained in the production of illuminating gas and coke. In Europe it is made on a large scale from synthetic ammonia, gypsum and carbon dioxide. Arcadian sulfate of ammonia is specially treated, dried and screened to remove lumps and insure good mechanical condition.

The usual guaranty is about 20.5 per cent of nitrogen for the grade offered for fertilizer purposes. This year the 12 samples analyzed averaged 20.78 per cent of nitrogen. This raw material is one of the cheapest sources of mineral nitrogen, costing 15 cents per pound or less.

Koppers Velvet Lawn was sampled from a two-pound package selling for 35 cents.

Analyses are given in Table II.

CASTOR POMACE

When the oil is removed from castor beans the press cake is ground and becomes the castor pomace of the fertilizer trade. It is valuable chiefly for its nitrogen, although it contains about one per cent of potash and two per cent of phosphoric acid. Castor pomace is poisonous to farm animals and it should always be stored where they will not have access to it.

There appears to have been an increased use of this raw material this year.

Guaranties for this material are generally placed at 4.50 per cent of nitrogen. Sixty-one samples were examined and the average nitrogen content was 4.84. Individual guaranties were met or exceeded in nearly all samples; only three deficiencies greater than 0.1 per cent were found. Quality of castor pomace as judged by the nitrogen content has remained fairly constant, varying in the last four years between 4.75 per cent and 5.10 per cent.

Based upon available price quotations, nitrogen from this source has cost about 29 cents per pound. This is without allowance for the phosphoric acid and potash in the material and compares with 31.5 cents last year and 30, 24 and 23.2 cents for the three years preceding.

Analyses are given in Table III.

TABLE III. ANALYSES OF CASTOR POMACE.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
3911	American Agricultural Chemical Co. New York City	Station agent. Stock of E. J. Bantle, Glastonbury	4.80	4.52
4448	Apothecaries Hall Co., Waterbury, Conn.	Station agent at factory	4.58	4.52
3308	Car No. 34298	Hatheway & Steane, Inc., Hart- ford	4.20	4.52
3486	Car No. 17661	Hatheway & Steane, Inc., Hart- ford	4.93	4.52
3487	Car No. 17388	Hatheway & Steane, Inc., Hart- ford	5.16	4.52
3488	Car No. 10147	Hatheway & Steane, Inc., Hart- ford	4.91	4.52
3489	Car No. 37293	Hatheway & Steane, Inc., Hart- ford	5.66	4.52
3490	Car No. 10352	Hatheway & Steane, Inc., Hart- ford	4.97	4.52
3695	Car No. 17112	Hatheway & Steane, Inc., Hart- ford	5.00	4.52
3696	Car No. 162076	Hatheway & Steane, Inc., Hart- ford	4.82	4.52
4006		Anthony Smith, North Franklin	4.63	4.52
3934		Yantic Grain & Products Co., Norwich	4.76	4.52
4678	Armour Fertilizer Works, New York City	Station agent. Stock of A. Kots, Granby	4.59	4.52
4496	Baker Castor Oil Co., New York City	Station agent. Stock of George A. Peckham, Suffield	4.62	4.50
3264	Car No. 12937	American Sumatra Tobacco Co., Bloomfield	4.72	4.50
3265	Car No. 17770	American Sumatra Tobacco Co., Bloomfield	4.53	4.50
3266	Car No. 11927	American Sumatra Tobacco Co., Bloomfield	4.82	4.50
3533	Car N. J. 34220	American Sumatra Tobacco Co., Bloomfield	4.80	4.50
3534	Car N. J. 12534	American Sumatra Tobacco Co., Bloomfield	4.44	4.50
3535	Car N. J. 10839	American Sumatra Tobacco Co., Bloomfield	4.52	4.50

TABLE III. ANALYSES OF CASTOR POMACE—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Berkshire Chemical Co., Bridgeport, Conn.			
4088	.....	Station agent at factory	4.84	4.31
4294	.....	Charter Oak Tobacco Co., Warehouse Point	4.86	4.31
4543	.....	J. T. Burgess & Son, Thomp- sonville	4.62	4.31
2715 ¹	Car No. 171759	Consolidated Cigar Corp., Hart- ford	5.00	4.52
2803 ¹	Car No. 38367	Consolidated Cigar Corp., Hart- ford	4.66	4.52
2875 ¹	Car No. 170313	Consolidated Cigar Corp., Hart- ford	4.41	4.52
2919 ¹	Car No. 161481	Consolidated Cigar Corp., Hart- ford	4.56	4.52
2949 ¹	Car No. 171798	Consolidated Cigar Corp., Hart- ford	4.34	4.52
3013 ¹	Car No. 167679	Consolidated Cigar Corp., Hart- ford	4.51	4.52
3014 ¹	Car No. 158179	Consolidated Cigar Corp., Hart- ford	4.69	4.52
3996	Car No. 167594	Consolidated Cigar Corp., Hart- ford	5.26	4.31
3997	Car No. 163010	Consolidated Cigar Corp., Hart- ford	5.00	4.31
3998	Car No. 45664	Consolidated Cigar Corp., Hart- ford	4.53	4.31
4049	Car No. 162075	Consolidated Cigar Corp., Hart- ford	5.24	4.31
4050	Car No. 168142	Consolidated Cigar Corp., Hart- ford	5.17	4.31
4125	Car No. 245071, Lot 0	Consolidated Cigar Corp., Hart- ford	4.91	4.31
4183	Car No. 165401	Consolidated Cigar Corp., Hart- ford	4.91	4.31
4319	Car No. 217090	Consolidated Cigar Corp., Hart- ford	4.77	4.31
4529	Car No. 164729	Consolidated Cigar Corp., Hart- ford	4.76	4.31
4530	Car No. 161513	Consolidated Cigar Corp., Hart- ford	4.74	4.31
4699	Car No. 171311	Consolidated Cigar Corp., Hart- ford	5.22	4.31
3586	Dubon Farm	Cullman Bros., Hartford	4.92	4.31
3846	Car N. H. 71008	Cullman Bros., Hartford	4.60	4.31
4777	.....	John M. Herr, Burnside	4.74	4.31
4267	No. 5	Silberman & Kahn, Hartford ..	4.99	4.31

¹ 1929 stock.

TABLE III. ANALYSES OF CASTOR POMACE—*Concluded.*

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Berkshire Chemical Co., Bridgeport, Conn.			
4283	No. 21	Silberman & Kahn, Hartford ..	5.00	4.31
4285	No. 23	Silberman & Kahn, Hartford ..	4.83	4.31
4178	Car N. Y. 163137	Spencer Bros., Inc., Suffield ...	5.02	4.31
4181	Car N. Y. 166653	Spencer Bros., Inc., Suffield ...	4.82	4.31
	Consolidated Rendering Co., Boston, Mass.			
4560	.....	Station agent. Stock of L. T. Frisbie Co., New Haven	5.48	4.52
	Central Chemical Co., Inc., Hagerstown, Md.			
4636	.....	Station agent. Stock of Jos. Norton, Broad Brook	4.70	4.53
	Eastern States Farmers' Exchange, Springfield, Mass.			
4433	.....	Station agent. Stock of E. W. Woolam, Warehouse Point..	4.64	4.50
	Spencer Kellogg & Sons, Buffalo, N. Y.			
4501	.....	Station agent. Stock of E. W. Woolam, Warehouse Point..	4.71	4.50
	Old Deerfield Fertilizer Co., So. Deerfield, Mass.			
4637	.....	Station agent. Stock of Adolph Kleszczewski, Somers	4.60	4.52
	Olds & Whipple, Inc., Hartford, Conn.			
3918	.....	Station agent at factory	4.60	4.53
	Standard Wholesale Phos- phate & Acid Works, Baltimore, Md.			
4553	.....	Station agent. Stock of H. H. McKnight, Ellington	4.43	3.70
	I. P. Thomas & Son, Philadelphia, Pa.			
4470	.....	Station agent. Stock of J. C. Thompson, Unionville	5.05	4.52
	Manufacturer Unknown			
4232	.....	Station agent. Stock of Tobacco Station, Windsor	5.11	.....
2168 ¹	.....	John M. Herr, Burnside	4.40	.....
2280 ¹	.....	Peter Nosal, Glastonbury	7.82	.....
4269	.....	Silberman & Kahn, Hartford..	4.58	.....

¹ 1929 stock.

COTTONSEED MEAL

Large quantities of cottonseed meal are used annually in this State as a fertilizer for tobacco. The grade used is chiefly that containing 6.58 per cent nitrogen (41 per cent protein). This is shown by the following summary of samples by grades:

Nitrogen, %	No. samples	Average nitrogen found
5.75	9	5.84
6.58	189	6.59
6.88	3	6.80
Guaranty, none or odd	47	6.25

A total of 245 samples were examined chiefly for purchasers. More than 95 per cent of the total number was of the 6.58 grade.

Of 202 samples for which guaranties were stated, 165 satisfied the guaranties given. This is about 82 per cent of the total number. Thirty-seven fell short of guaranties by 0.1 per cent or more of nitrogen. A considerable improvement is shown this year as compared with the preceding year, when less than 65 per cent of the samples examined were found to contain the percentage of nitrogen claimed.

Price quotations are incomplete, but an average of 60 quoted prices is \$45.30, which makes the cost of nitrogen in meal of 6.50 grade about 35 cents per pound.

Analyses are given in Table IV.

LINSEED MEAL

Linseed meal is used in mixed fertilizers to some extent to replace cottonseed, or to supplement it. "Old process" meal is made from flaxseed by crushing, cooking and pressing the seed. In the "new process" oil is removed by the use of solvents.

Thirteen samples were analyzed, nine of which were accompanied by guaranties. Only two deficiencies were found, and the average nitrogen found was 5.40 per cent, which is nearly equal to the prevailing guaranty (5.44).

Linseed meal is an expensive source of nitrogen, judging from the information furnished us as to ton prices. The average price per ton was \$57.48, which makes the cost of a pound of nitrogen about 53 cents. Similar estimates for the two preceding years were 48 and 50 cents.

Analyses are given in Table IV.

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
2236 ¹	American Agricultural Chemical Co., New York City	Station agent. Stock of E. J. Bantle, Glastonbury	5.79	.....
4449	Apothecaries Hall Co., Waterbury, Conn.	Station agent at factory	6.54	6.58
3215	Car No. 50655	Hatheway & Steane, Inc., Hart- ford	6.70	6.58
3216	Car No. 166216	Hatheway & Steane, Inc., Hart- ford	6.64	6.58
3217	Car No. 169570	Hatheway & Steane, Inc., Hart- ford	6.94	6.58
3218	Car No. 7195	Hatheway & Steane, Inc., Hart- ford	6.37	6.58
3219	Car No. 56286	Hatheway & Steane, Inc., Hart- ford	6.42	6.58
3220	Car No. 8206	Hatheway & Steane, Inc., Hart- ford	6.47	6.58
3221	Car No. 162216	Hatheway & Steane, Inc., Hart- ford	6.86	6.58
3222	Car No. 51466	Hatheway & Steane, Inc., Hart- ford	6.72	6.58
3223	Car No. 240802	Hatheway & Steane, Inc., Hart- ford	6.52	6.58
3304	Car No. 156779	Hatheway & Steane, Inc., Hart- ford	6.68	6.58
3305	Car No. 38060	Hatheway & Steane, Inc., Hart- ford	6.60	6.58
3370	Car No. 168319	Hatheway & Steane, Inc., Hart- ford	5.64	6.58
3371	Car No. 156988	Hatheway & Steane, Inc., Hart- ford	6.54	6.58
3372	Car No. 18807	Hatheway & Steane, Inc., Hart- ford	6.48	6.58
3373	Car No. 155889	Hatheway & Steane, Inc., Hart- ford	6.58	6.58
3479	Car No. 7015	Hatheway & Steane, Inc., Hart- ford	6.43	6.58
3480	Truck 1000	Hatheway & Steane, Inc., Hart- ford	6.52	6.58
4003	Car. No. 7481	Hatheway & Steane, Inc., Hart- ford	6.55	6.58
4004	Car No. 55910	Hatheway & Steane, Inc., Hart- ford	6.64	6.58

¹ 1929 stock.

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Apothecaries Hall Co., Waterbury, Conn.			
4117	Car No. 162480	P. Lorillard Co., Windsor	6.72	6.58
4295	Car No. 157335	A. N. Shepard & Son, Hartford	6.57	6.58
4296	Car No. 122228	A. N. Shepard & Son, Hartford	6.59	6.58
	Armour Fertilizer Works, New York City			
4668	.....	Station agent. Stock of James Caffrey, Cromwell	6.02	5.76
	Ashcraft-Wilkinson Co., Atlanta, Ga.			
3912	Helmet	Station agent. Stock of E. J. Bantle, Glastonbury	6.66	6.58
4687	Paramount	Station agent. Stock of Henry Roach, Suffield	5.80	5.76
4027	.....	S. F. Brown, Poquonock	6.65	6.56
4610	Helmet, Car C. of Ga. 57833	Charles D. Cannon, Windsor Locks	6.70	6.58
2286 ¹	Monarch	The Coles Co., Middletown ...	6.62	6.88
3011 ¹	Car No. 18581	Consolidated Cigar Corp., Hart- ford	6.77	.....
3012 ¹	Car No. 17908	Consolidated Cigar Corp., Hart- ford	6.82	.....
3085 ¹	Car No. 30454	Consolidated Cigar Corp., Hart- ford	6.82	.....
3086 ¹	Car No. 18927	Consolidated Cigar Corp., Hart- ford	6.84	.....
3409	Car No. 56883	Consolidated Cigar Corp., Hart- ford	6.44	.....
3145	Car No. 17105	Consolidated Cigar Corp., Hart- ford	6.90	.....
3146	Car No. 30893	Consolidated Cigar Corp., Hart- ford	6.63	.....
3147	Car No. 17362	Consolidated Cigar Corp., Hart- ford	6.78	.....
3148	Car No. 7571	Consolidated Cigar Corp., Hart- ford	6.98	.....
3149	Car No. 34006	Consolidated Cigar Corp., Hart- ford	6.90	.....
3150	Car No. 234814	Consolidated Cigar Corp., Hart- ford	6.68	.....
3151	Car No. 19049	Consolidated Cigar Corp., Hart- ford	6.79	.....
3152	Car No. 18790	Consolidated Cigar Corp., Hart- ford	6.84	.....

¹ 1929 stock.

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Ashcraft-Wilkinson Co., Atlanta, Ga.			
3184	Helmet, Car No. 50714	Consolidated Cigar Corp., Hart- ford	6.59	6.58
3185	Helmet, Car No. 18520	Consolidated Cigar Corp., Hart- ford	6.57	6.58
3186	Helmet, Car No. 37398	Consolidated Cigar Corp., Hart- ford	6.74	6.58
3187	Helmet, Car No. 50582	Consolidated Cigar Corp., Hart- ford	6.70	6.58
3388	Car No. 55978	Consolidated Cigar Corp., Hart- ford	6.83	.....
3407	Car No. 36632	Consolidated Cigar Corp., Hart- ford	6.49	.....
3408	Car No. 51193	Consolidated Cigar Corp., Hart- ford	6.74	.....
3661	Car No. 30085	Consolidated Cigar Corp., Hart- ford	6.44	.....
3662	Car No. 40417	Consolidated Cigar Corp., Hart- ford	6.56	.....
3663	Car No. 52752	Consolidated Cigar Corp., Hart- ford	6.51	.....
3664	Car No. 57454	Consolidated Cigar Corp., Hart- ford	6.79	.....
3665	Car No. 58441	Consolidated Cigar Corp., Hart- ford	6.56	.....
3697	Car No. 162372	Consolidated Cigar Corp., Hart- ford	6.91	.....
3992	Car No. 32405	Consolidated Cigar Corp., Hart- ford	6.39	.....
3993	Car No. 237501	Consolidated Cigar Corp., Hart- ford	6.73	.....
3994	Car No. 243236	Consolidated Cigar Corp., Hart- ford	6.83	.....
4042	Car No. 156880	Consolidated Cigar Corp., Hart- ford	6.74	.....
4043	Car No. 157370	Consolidated Cigar Corp., Hart- ford	6.69	.....
4044	Car No. 157353	Consolidated Cigar Corp., Hart- ford	7.14	.....
4045	Car No. 157006	Consolidated Cigar Corp., Hart- ford	6.98	.....
4046	Car No. 158839	Consolidated Cigar Corp., Hart- ford	6.79	.....
4047	Car No. 176628	Consolidated Cigar Corp., Hart- ford	6.47	.....

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—*Continued.*

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Ashcraft-Wilkinson Co., Atlanta, Ga.			
4122	Car No. 174634	Consolidated Cigar Corp., Hart- ford	6.80	....
4123	Car No. 24333	Consolidated Cigar Corp., Hart- ford	6.89	....
4124	Car No. 171973	Consolidated Cigar Corp., Hart- ford	6.76	....
4201	Helmet, Car No. 154760	Consolidated Cigar Corp., Hart- ford	6.75	6.58
4202	Helmet, Car No. 159233	Consolidated Cigar Corp., Hart- ford	6.55	6.58
4203	Helmet, Car No. 166072	Consolidated Cigar Corp., Hart- ford	6.92	6.58
4312	Helmet, Car No. 173687	Consolidated Cigar Corp., Hart- ford	6.80	6.58
4318	Helmet, Car No. 147874	Consolidated Cigar Corp., Hart- ford	7.04	6.58
4323	Helmet, Car I. C. 156427 ...	Consolidated Cigar Corp., Hart- ford	6.82	6.58
4355	Helmet, Car No. 156971	Consolidated Cigar Corp., Hart- ford	6.60	6.58
4378	Helmet, Car No. 50756	Consolidated Cigar Corp., Hart- ford	6.74	6.58
4379	Helmet, Car No. 157527	Consolidated Cigar Corp., Hart- ford	6.56	6.58
4527	Helmet, Car No. 73853	Consolidated Cigar Corp., Hart- ford	6.54	6.58
4528	Helmet, Car No. 71560	Consolidated Cigar Corp., Hart- ford	6.74	6.58
4695	Paramount, Car No. 57886 ..	Consolidated Cigar Corp., Hart- ford	5.78	5.76
4696	Paramount, Car No. 27026 ..	Consolidated Cigar Corp., Hart- ford	5.72	5.76
4697	Paramount, Car No. 171550 ..	Consolidated Cigar Corp., Hart- ford	5.82	5.76
4698	Paramount, Car No. 56753 ...	Consolidated Cigar Corp., Hart- ford	5.84	5.76
3260	Helmet, Car No. 57315	Cullman Bros., Inc., Hartford ..	6.64	6.58
3298	Helmet, Car No. 17651	Cullman Bros., Inc., Hartford ..	6.54	6.58
3299	Helmet, Car No. 79463	Cullman Bros., Inc., Hartford ..	6.58	6.58
3300	Helmet, Car No. 165800	Cullman Bros., Inc., Hartford ..	6.37	6.58
3301	Helmet, Car No. 12967	Cullman Bros., Inc., Hartford ..	6.56	6.58
3363	Helmet, Car No. 89121	Cullman Bros., Inc., Hartford ..	6.56	6.58
3364	Helmet, Car No. 57311	Cullman Bros., Inc., Hartford ..	6.52	6.58
3365	Helmet, Car No. 56566	Cullman Bros., Inc., Hartford ..	6.89	6.58

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Ashcraft-Wilkinson Co., Atlanta, Ga.			
3585	Helmet, Car No. 165800	Cullman Bros., Inc., Hartford . .	6.41	6.58
4107	Helmet, Car C. of Ga. 57989 . .	Cullman Bros., Inc., Hartford . .	6.59	6.58
4108	Helmet, Car C. of Ga. 56474 . .	Cullman Bros., Inc., Hartford . .	6.54	6.58
4109	Helmet, Car Ill. C. 171170 . .	Cullman Bros., Inc., Hartford . .	6.74	6.58
4110	Helmet, Car Ill. C. 156920 . .	Cullman Bros., Inc., Hartford . .	6.67	6.58
4126	Helmet, Car I. C. 157453	Cullman Bros., Inc., Hartford . .	6.70	6.58
4127	Helmet, Car C. of Ga. 50800 . .	Cullman Bros., Inc., Hartford . .	6.60	6.58
4128	Car Penn. 52837	Cullman Bros., Inc., Hartford . .	6.40	6.58
4129	Helmet, Car Penn. 38879	Cullman Bros., Inc., Hartford . .	6.25	6.58
4130	Helmet, Car South 163081	Cullman Bros., Inc., Hartford . .	6.51	6.58
4306	Helmet, Car No. 10290	L. B. Haas & Co., Hartford	6.35	6.58
4307	Helmet, Car No. 9148	L. B. Haas & Co., Hartford	6.64	6.58
4308	Helmet, Car No. 162750	L. B. Haas & Co., Hartford	6.58	6.58
4309	Helmet, Car No. 161246	L. B. Haas & Co., Hartford	6.16	6.58
4310	Helmet, Car No. 46449	L. B. Haas & Co., Hartford	6.60	6.58
4311	Helmet, Car No. 375471	L. B. Haas & Co., Hartford	6.72	6.58
4312	Helmet, Car No. 96975	L. B. Haas & Co., Hartford	6.63	6.58
4339	Helmet, Car No. 128124	L. B. Haas & Co., Hartford	6.88	6.58
4721	Helmet, Car No. 10290	L. B. Haas & Co., Hartford	6.53	6.58
4775	Helmet	John M. Herr, Burnside	6.74	6.58
4337	Helmet, Car No. 160029	Julius Marqusee & Son, Inc., Hartford	6.46	6.58
4350	Helmet, Car L. & N. 17648	Julius Marqusee & Son, Inc., Hartford	6.29	6.58
4351	Helmet, Car I. C. 171487	Julius Marqusee & Son, Inc., Hartford	6.32	6.58
4207	Helmet, Car M. P. 93352	Henry Oppenheimer & Co., East Hartford	6.53	6.58
4298	Paramount, Car No. 49430	A. N. Shepard & Son, Hart- ford	5.73	5.76
4497	Helmet, Car R. I. 57990	J. E. Shepard, Windsor	7.10	6.58
4152	Helmet, Car South 375498	Spencer Bros., Inc., Suffield	6.63	6.58
4153	Helmet, Car S. A. L. 13148	Spencer Bros., Inc., Suffield	6.64	6.58
4154	Helmet, Car G. M. & N. 4326	Spencer Bros., Inc., Suffield	6.90	6.58
4157	Helmet, Car South 162765	Spencer Bros., Inc., Suffield	6.64	6.58
4391	Helmet, Car South 134522	Spencer Bros., Inc., Suffield	6.52	6.58
4114	Helmet, Car No. 45003	Henry E. Wells, Warehouse Point	6.60	6.58
4115	Helmet, Car No. 86547	Henry E. Wells, Warehouse Point	6.61	6.58
4367	Helmet, Car No. 46483	L. Wetstone & Sons., Inc., Hart- ford	6.86	6.58
4368	Helmet, Car No. 129881	L. Wetstone & Sons., Inc., Hart- ford	6.82	6.58

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
F. W. Brode Corp., Memphis, Tenn.				
4216	Owl Brand 41%, Car No. 133911	Station agent. Stock of J. E. Shepard, So. Windsor	6.70	6.56
4217	Owl Brand 41%, Car No. 148837	Station agent. Stock of J. E. Shepard, So. Windsor	6.67	6.56
4293	Owl Brand 41%	Charter Oak Tobacco Co., Warehouse Point	6.73	6.56
3848	Owl Brand 41%, Car B 453610	Rockville Grain & Coal Co., Rockville	6.54	6.56
4024	Car S. F. 130170	Jos. Rostek, Melrose	5.98	5.76
4025	Car No. 128003	Jos. Rostek, Melrose	6.23	6.24
Humphreys-Godwin Co., Memphis, Tenn.				
3749	Dixie, Car Southern 169528	Arthur Case, West Suffield	6.54	6.58
3353	Dixie, Car No. 166219	Cullman Bros., Inc., Hartford	6.30	6.58
3354	Dixie, Car No. 163755	Cullman Bros., Inc., Hartford	6.42	6.58
3404	Dixie, Car No. 157090	Cullman Bros., Inc., Hartford	6.47	6.58
3405	Dixie, Car No. 16085	Cullman Bros., Inc., Hartford	6.85	6.58
3406	Dixie, Car No. 7343	Cullman Bros., Inc., Hartford	6.60	6.58
3491	Dixie, Car No. 153513	Cullman Bros., Inc., Hartford	6.68	6.58
3492	Dixie, Car No. 160670	Cullman Bros., Inc., Hartford	6.60	6.58
3500	Dixie, Car No. 135295	Cullman Bros., Inc., Hartford	6.35	6.58
3501	Dixie, Car No. 8847	Cullman Bros., Inc., Hartford	6.71	6.58
3502	Dixie, Car No. 20878	Cullman Bros., Inc., Hartford	6.60	6.58
3503	Dixie, Car No. 125987	Cullman Bros., Inc., Hartford	6.60	6.58
3508	Dixie, Car No. 155952	Cullman Bros., Inc., Hartford	6.60	6.58
3510	Dixie, Car No. 164607	Cullman Bros., Inc., Hartford	6.52	6.58
3587	Dixie, Dubon Farm	Cullman Bros., Inc., Hartford	6.38	6.58
3590	Dubon Farm, No. 5	Cullman Bros., Inc., Hartford	6.70	6.58
3267	Dixie, Car No. 154740	L. B. Haas & Co., Hartford	6.62	6.58
3268	Dixie, Car No. 156537	L. B. Haas & Co., Hartford	6.74	6.58
3269	Dixie, Car No. 241474	L. B. Haas & Co., Hartford	6.54	6.58
3270	Dixie, Car No. 164480	L. B. Haas & Co., Hartford	6.70	6.58
3525	Dixie, Car No. 160297	L. B. Haas & Co., Hartford	6.46	6.58
3546	Dixie, Car No. 162995	L. B. Haas & Co., Hartford	6.68	6.58
3547	Dixie, Car No. 154011	L. B. Haas & Co., Hartford	6.66	6.58
3595	Dixie, Car No. 26824	L. B. Haas & Co., Hartford	6.64	6.58
3596	Dixie, Car No. 161225	L. B. Haas & Co., Hartford	6.80	6.58
3597	Dixie, Car No. 14493	L. B. Haas & Co., Hartford	6.72	6.58
3671	Dixie, Car No. 304271	L. B. Haas & Co., Hartford	6.60	6.58
3355	Dixie, Car No. 254050	Hartman Tobacco Co., Hartford	6.54	6.58
3356	Dixie, Car No. 86702	Hartman Tobacco Co., Hartford	6.50	6.58
3232	Dixie, Car No. 302150	I. Kaffenburgh & Son, Inc., Hartford	6.50	6.58

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Humphreys-Goodwin Co., Memphis, Tenn.			
3233	Dixie, Car No. 33171	I. Kaffenburgh & Sons, Inc., Hartford	6.45	6.58
3692	Dixie, Car No. 253178	L. A. Kent, Suffield	6.55	6.58
4010	Dixie, Car Southern 163221..	Julius Marqusee & Son, Inc., Hartford	6.67	6.58
4113	Dixie, Car C. of Ga. 55745 ..	Julius Marqusee & Son, Inc., Hartford	6.67	6.58
4315	Dixie, Car I. C. 341351	Julius Marqusee & Son, Inc., Hartford	6.38	6.58
4160	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.30	6.58
4161	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.80	6.58
4162	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.57	6.58
4163	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.59	6.58
4166	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.56	6.58
4168	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.61	6.58
4169	Dixie	Station agent. Stock of Meyer & Mendelsohn, Hartford ...	6.70	6.58
3658	Dixie	H. P. Nelson, West Suffield ..	6.58	6.58
3691	Dixie, Car Sou. 156471	Henry C. Nelson, Suffield ...	6.74	6.58
4205	Dixie, Car Sou. 132310	Henry Oppenheimer & Co., East Hartford	6.48	6.58
4206	Dixie, Car I. C. 155071	Henry Oppenheimer & Co., East Hartford	6.64	6.58
4451	Dixie, Car No. 126528	Station agent. Stock of Geo. A. Peckham, Suffield	6.40	6.58
3798	Dixie	Tobacco Station, Windsor ...	6.58	6.58
3748	Dixie, Car Southern 17575 ..	E. A. Root, East Granby ...	6.54	6.58
4291	Dixie	The George T. Soule Co., New Milford	6.56	6.58
4158	Dixie, Car N. Y. 165622	Spencer Bros., Inc., Suffield ..	6.40	6.58
4174	Dixie, Car I. C. 158342	Spencer Bros., Inc., Suffield ..	6.44	6.58
4175	Dixie, Car L. & N. 101856 ..	Spencer Bros., Inc., Suffield ..	6.62	6.58
4176	Dixie, Car N. Y. 165053	Spencer Bros., Inc., Suffield ..	6.75	6.58
4177	Bull, Car A. C. L. 18912	Spencer Bros., Inc., Suffield ..	6.88	6.88
4179	Bull, Car A. C. L. 35332	Spencer Bros., Inc., Suffield ..	6.91	6.88
4180	Dixie, Car South 14638	Spencer Bros., Inc., Suffield ..	6.71	6.58
4182	Dixie, Car N. Y. 163640	Spencer Bros., Inc., Suffield ..	6.62	6.58
4387	Dixie, Car I. C. 249206	Spencer Bros., Inc., Suffield ..	6.58	6.58

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Humphreys-Goodwin Co., Memphis, Tenn.			
4388	Dixie, Car I. C. 156954	Spencer Bros., Inc., Suffield ..	6.44	6.58
4389	Dixie, Car I. C. 156922	Spencer Bros., Inc., Suffield ..	6.61	6.58
4390	Dixie, Car U. P. 126528	Spencer Bros., Inc., Suffield ..	6.38	6.58
4393	Dixie, Car I. C. 158680	Spencer Bros., Inc., Suffield ..	6.49	6.58
4394	Dixie, Car I. C. 341669	Spencer Bros., Inc., Suffield ..	6.61	6.58
4359	Dixie, Car No. 156590	L. Wetstone & Sons, Inc., Hart- ford	6.38	6.58
4222	Dixie	Station agent. Stock of Joseph Winn, Enfield	6.72	6.58
	L. B. Lovitt & Co., Memphis, Tenn.			
3804	"Lovit Brand" 41%	Station agent. Stock of John B. Cannon, Granby	6.54	6.56
3499	"Lovit Brand" 41%	Cullman Bros., Inc., Hartford ..	6.21	6.56
3509	"Lovit Brand" 41%	Cullman Bros., Inc., Hartford ..	6.68	6.56
3588	"Lovit Brand" 41%	Cullman Bros., Inc., Hartford ..	6.44	6.56
3589	"Lovit Brand" 41%	Cullman Bros., Inc., Hartford ..	6.32	6.56
3477	"Lovit Brand" 41%	Hatheway & Steane, Inc., Hart- ford	6.49	6.56
3478	"Lovit Brand" 41%	Hatheway & Steane, Inc., Hart- ford	6.47	6.56
3950	"Lovit Brand" 41%, Car No. 11576	D. E. Neelans, Hazardville ...	6.44	6.56
4434	"Lovit Brand" 41%	Station agent. Stock of Joseph Norton, Broad Brook	6.72	6.56
4802	"Lovit Brand" 41%	Arthur E. Pascoe, Warehouse Point	6.34	6.56
3828	"Lovit Brand" 41%	Station agent. Stock of J. E. Shepard, South Windsor ...	6.47	6.56
4193	"Lovit Brand" 41%, Car No. 230959	Station agent. Stock of J. E. Shepard, South Windsor ...	6.33	6.56
4213	"Lovit Brand" 41%, Car No. 133734	Station agent. Stock of J. E. Shepard, South Windsor ...	6.46	6.56
4214	"Lovit Brand" 41%, Car No. 38778	Station agent. Stock of J. E. Shepard, South Windsor ...	6.60	6.56
4155	"Lovit Brand" 41%, Car South 164356	Spencer Bros., Inc., Suffield ..	6.56	6.56
4156	"Lovit Brand" 36%, Car S. A. L. 89817	Spencer Bros., Inc., Suffield ..	5.83	5.76
4159	"Lovit Brand" 41%, Car S. A. L. 163387	Spencer Bros., Inc., Suffield ..	6.62	6.56
4392	"Lovit Brand" 41%, Car South 160810	Spencer Bros., Inc., Suffield ..	6.70	6.56

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—Continued.

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
4622	Meech & Stoddard, Inc., Middletown, Conn. Car No. 170761	Consolidated Cigar Corp., Hart- ford	5.72	6.58
	Memphis Cottonseed Products Co., Memphis, Tenn.			
4210	Car No. 164946	Station agent. Stock of J. E. Shepard, South Windsor ...	6.34	.....
4211	Car No. 172303	Station agent. Stock of J. E. Shepard, South Windsor ...	6.23	.....
4212	Car No. 73512	Station agent. Stock of J. E. Shepard, South Windsor ...	6.24	.....
4215	Car No. 171357	Station agent. Stock of J. E. Shepard, South Windsor ...	6.36	.....
	Olds & Whipple, Inc., Hartford, Conn.			
3283	Car No. 155698	L. B. Haas & Co., Inc., Hartford	6.65	.....
3728	Car No. 156507	L. B. Haas & Co., Inc., Hartford	6.70	6.58
3729	Car No. 157150	L. B. Haas & Co., Inc., Hartford	6.59	6.58
3730	Car No. 165134	L. B. Haas & Co., Inc., Hartford	6.54	6.58
3750	Car No. 100334	L. B. Haas & Co., Inc., Hartford	6.77	6.58
3751	Car No. 121609	L. B. Haas & Co., Inc., Hartford	6.74	6.58
3752	Car No. 15982	L. B. Haas & Co., Inc., Hartford	6.61	6.58
3357	Car No. 47625	Hartman Tobacco Co., Hartford	6.61	6.58
3358	Car No. 200952	Hartman Tobacco Co., Hartford	6.87	6.58
3359	Car No. 5487	Hartman Tobacco Co., Hartford	6.64	6.58
3360	Car No. 49787	Hartman Tobacco Co., Hartford	6.40	6.58
3361	Car No. 168687	Hartman Tobacco Co., Hartford	6.71	6.58
4352	Car Southern 155720	Julius Marqusee & Son, Inc., Hartford	6.71	.....
4619	.....	Walter R. Miller, East Granby	6.35	6.58
4265	Car No. 121743	Silberman & Kahn, Hartford ..	6.69	6.58
4268	Car No. 164408	Silberman & Kahn, Hartford ..	7.00	6.58
4272	Car No. 171596	Silberman & Kahn, Hartford ..	5.88	6.58
4275	Car No. 176022	Silberman & Kahn, Hartford ..	6.71	6.58
4276	No. 14	Silberman & Kahn, Hartford ..	6.69	6.58
4278	Car No. 159238	Silberman & Kahn, Hartford ..	6.85	6.58
4279	No. 17	Silberman & Kahn, Hartford ..	6.61	6.58
4280	No. 18	Silberman & Kahn, Hartford ..	7.00	6.58
4281	Car No. 72144	Silberman & Kahn, Hartford ..	6.95	6.58
4287	No. 25	Silberman & Kahn, Hartford ..	6.69	6.58
	Manufacturer Unknown			
4234	.....	Tobacco Station, Windsor	6.53	.....
4237	.....	Tobacco Station, Windsor	6.53	.....
4776	.....	John M. Herr, Burnside	5.32	.....

TABLE IV. ANALYSES OF COTTONSEED AND LINSEED MEALS—*Concluded.*

Station No.	Manufacturer or Jobber, Car No. or Mark	Purchased, Sampled or Sent by	Per cent nitrogen	
			Found	Guaranteed
	Apothecaries Hall Co., Waterbury, Conn.	Linseed Meal		
3311	Car No. 86562	Hatheway & Steane, Inc., Hart- ford	5.81	.....
3312	Car No. 85507	Hatheway & Steane, Inc., Hart- ford	5.72	.....
3514	Car L. V. 60030	L. B. Haas & Co., Inc., Hartford	6.23	.....
3515	Car D. L. W. 43815	L. B. Haas & Co., Inc., Hartford	6.17	.....
	Archer-Daniels-Midland Co., Buffalo, N. Y.			
3378	Car No. 50025	Hatheway & Steane, Inc., Hart- ford	5.82	5.44
3379	Car No. 86072	Hatheway & Steane, Inc., Hart- ford	5.90	5.44
3380	Car No. 85479	Hatheway & Steane, Inc., Hart- ford	5.74	5.44
3381	Car No. 82923	Hatheway & Steane, Inc., Hart- ford	5.80	5.44
3382	Car No. 85635	Hatheway & Steane, Inc., Hart- ford	5.76	5.44
3383	Car No. 86183	Hatheway & Steane, Inc., Hart- ford	5.78	5.44
4121	.....	P. Lorillard & Co., Windsor ..	5.29	5.44
4303	Car No. 163735	A. N. Shepard & Son, Hartford	5.20	5.44
	Spencer Kellogg & Sons, Buffalo, N. Y.			
4023	Car No. 161053	L. B. Haas & Co., Inc., Hartford	5.32	5.12

HORN AND HOOF MEAL

This raw material is made by processing, drying and grinding hoofs and horns. It contains from 10.7 to 15.6 per cent of nitrogen.

Three samples were submitted by purchasers.

3155 and 4321. Submitted by the Consolidated Cigar Corp., Hartford, purchased of the Berkshire Chemical Co. They contained 14.75 and 15.30 per cent of nitrogen respectively.

4365. Submitted by L. Wetstone and Sons, Inc., Hartford, purchased of Olds & Whipple, Inc., Hartford. It contained 15.02 per cent of nitrogen.

II. RAW MATERIALS CHIEFLY VALUABLE FOR
PHOSPHORIC ACID

PRECIPITATED BONE PHOSPHATE

This raw material is obtained as a by-product in the manufacture of gelatin and glue stock from bone. The available phosphoric acid in it is usually guaranteed at 36 or 38 per cent, nearly all of which is soluble in ammonium citrate but very little is soluble in water.

A precipitated phosphate is made from rock phosphate, and this likewise is but slightly soluble in water but largely soluble in ammonium citrate. The term "precipitated bone phosphate" is correctly applied only to the article derived from bone.

Thirteen samples were analyzed, all of which exceeded guarantees or were of satisfactory grade. The average percentage of available phosphoric acid found was 40.9 and at \$45 per ton the cost of available phosphoric acid was about 5.5 cents per pound.

Analyses are given in Table V.

SUPERPHOSPHATE

This raw material, formerly called "acid phosphate," contains about 16 per cent of available phosphoric acid, practically all of which is soluble in water.

Only two of the 20 samples examined failed to meet the guarantees made for them.

Prices quoted averaged about \$20 per ton, at which figure the cost of available phosphoric acid from this source was 5.8 cents per pound. The average percentage of available phosphoric acid was 17.4.

Analyses are given in Table VI.

BASIC SLAG

Basic slag is a by-product in the manufacture of steel. It should contain not less than 12 per cent of total phosphoric acid, of which not less than 80 per cent should be "available" by the Wagner method.

Two samples were analyzed.

2970. International Agricultural Corp., sample submitted by B. A. Brown, Storrs. It contained 16.54 per cent of total and 14.53 per cent of available phosphoric acid. It also contained 49.37 per cent of calcium oxide and 4.12 per cent of magnesium oxide.

4450. Apothecaries Hall Co., sampled by Station Agent from the warehouse at East Windsor. The total phosphoric acid was 17.45 per cent and the available 15.24.

LIME PHOSPHATE

4413. Ruhm Phosphate and Chemical Co., sample submitted by the manufacturer. It contained 33.40 per cent of total phosphoric acid.

TABLE V. ANALYSES OF PRECIPITATED BONE PHOSPHATE.

Station No.	Manufacturer or Wholesale Dealer	Place of Sampling	Phosphoric acid			
			Citrate insoluble	Total	"Available"	
					Found	Guaranteed
			%	%	%	%
4437	<i>Sampled by Station</i>		0.88	40.68	39.80	36.00
4082	Apothecaries Hall Co., Waterbury	At factory	0.97	39.07	38.10	38.00
4453	Berkshire Chemical Co., Bridgeport	At factory				
	Eastern States Farmers' Exchange, Springfield, Mass.	H. H. McKnight, Ellington	0.28	44.83	44.55	38.00
4220	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Joseph Winn, Enfield	1.23	39.50	38.27	38.00
3917	Olds & Whipple, Inc., Hartford	At factory	5.33	45.53	40.20	38.00
	<i>Sampled by Purchaser</i>					
3482	Apothecaries Hall Co., Waterbury	Hatheway & Steane, Inc., Hartford	1.98	42.90	40.92	36.00
4204	Berkshire Chemical Co., Bridgeport	Consolidated Cigar Corp., Hartford	2.64	42.25	39.61	38.00
4264	Berkshire Chemical Co., Bridgeport	Silberman & Kahn, Hartford	1.49	42.61	41.12	38.00
4274	Berkshire Chemical Co., Bridgeport	Silberman & Kahn, Hartford	2.16	41.70	39.54	38.00
4338	L. T. Frisbie Co., New Haven	Mr. Bushnell, Brookfield	0.30	40.73	40.43	38.00
4022	Olds & Whipple, Inc., Hartford	L. B. Haas & Co., Hartford	0.29	45.28	44.99	38.00
4370	Olds & Whipple, Inc., Hartford	L. Wetstone & Sons, Inc., Hartford	0.18	46.21	46.03	38.00
2169 ¹	Manufacturer unknown	John M. Herr, Burnside	0.40	38.00	37.60	.....

¹ 1929 stock.

SUPERPHOSPHATE

TABLE VI. ANALYSES OF SUPERPHOSPHATE (ACID PHOSPHATE).

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid			
			Citrale insoluble	Total	"Available"	
					Found	Guaranteed
			%	%	%	%
<i>Sampled by Station</i>						
4255	American Agricultural Chemical Co., New York City	South Norwalk: Roodner Grain Co.	0.17	17.35	17.18	16.00
4095	Apothecaries Hall Co., Waterbury	West Cheshire: Cheshire Reformatory	0.96	15.48	14.52	16.00
4252	Armour Fertilizer Works, New York City	Seymour: Seymour Grain & Coal Co.	0.43	17.06	16.63	16.00
4463	Armour Fertilizer Works, New York City	Stamford: Bartlett Tree Expert Co.	0.19	20.33	20.14	20.00
3978	Associated Seed Growers, New Haven	Sampled at factory	0.14	17.58	17.44	16.00
4068	Berkshire Chemical Co., Bridgeport	Highwood: J. A. Smith	0.27	17.84	17.57	16.00
3969	Consolidated Rendering Co., Boston, Mass.	New Haven: L. T. Frisbie Co.	0.13	19.24	19.11	16.00
4559	Consolidated Rendering Co., Boston, Mass.	New Haven: L. T. Frisbie Co.	0.06	20.86	20.80	20.00
4728	Consolidated Rendering Co., Boston, Mass.	Woodstock: H. F. Joy	0.63	17.68	17.05	16.00
4144	Eastern States Farmers' Exchange, Springfield, Mass.	North Haven: C. O. Prentice	1.28	17.57	16.29	16.00
4688	International Agricultural Corp., Boston, Mass.	Suffield: Hill Top Farm	0.40	16.84	16.44	16.00
4334	Miller Fertilizer Co., Baltimore, Md.	Mystic: J. F. Brown	0.52	16.38	15.86	16.00
3954	Olds & Whipple, Inc., Hartford	Sampled at factory	1.04	17.35	16.31	16.00
3903	The Rogers & Hubbard Co., Portland	Sampled at factory	0.08	17.63	17.55	16.00

TABLE VI. ANALYSES OF SUPERPHOSPHATE (ACID PHOSPHATE)—*Concluded.*

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid			
			Citrate insoluble	Total	"Available"	
			%	%	Found	Guaranteed
3982	<i>Sampled by Station</i> Standard Wholesale Phosphate & Acid Works, Baltimore, Md. Standard Wholesale Phosphate & Acid Works, Baltimore, Md. I. P. Thomas & Sons, Philadelphia, Pa.	Willimantic: Willimantic Grain Co. ... Talcottville: Lyman Bros. Hamden: Ira Beers	0.08	14.95	14.87	16.00
4188			0.61	17.32	16.71	16.00
4038			0.49	18.55	18.06	16.00
4007	<i>Sampled by Purchaser</i> Apothecaries Hall Co., Waterbury International Agricultural Corp., Boston, Mass. Olds & Whipple, Inc., Hartford	North Franklin: Anthony Smith Middlefield: The Lyman Farm Hartford: L. Wetstone & Sons, Inc. ...	0.19	18.78	18.59	16.00
3755			0.16	18.74	18.58	18.00
4364			0.65	18.15	17.50	16.00

III. RAW MATERIALS CHIEFLY VALUABLE
FOR POTASH

CARBONATE OF POTASH

Pure, dry carbonate of potash contains 68 per cent of actual potash (K_2O), but commercial grades as sold for fertilizer usually contain from 62 to 65 per cent.

Twenty-seven samples were analyzed, one of which was last year's stock of unknown manufacture and considerably below the usual grade. The average of all samples was 65 per cent of potash, the average of guaranties, so far as given, being 62.10 per cent.

Based on the prices quoted, \$6.25 per 100 pounds, potash from this source cost about 9.6 cents per pound, or \$1.92 per unit.

Analyses are given in Table VII.

MURIATE OF POTASH

This potash sale as sold for fertilizer purposes contains from 48 to 50 per cent of actual potash. The average percentage found this year was a little more than 51 per cent and all individual samples exceeded guaranties or were of satisfactory grade. Prices were not quoted for the samples examined but four to five cents a pound is a fair price for potash in this material.

Ten samples were examined and analyses are given in Table VII.

SULFATE OF POTASH

This salt should supply not less than 48 per cent of potash and should contain not more than 2.5 per cent of chlorine. The samples examined averaged 49.51 per cent and individual samples equalled or exceeded guaranties, excepting two instances.

The average price per ton was \$57.50, at which figure potash from this source cost 5.8 cents per pound.

Twenty-three samples were analyzed and the results are given in Table VII.

SULFATE OF POTASH AND MAGNESIA

This is a double sulfate of potash and magnesia containing about 25 per cent of potash and should not contain in excess of 2.5 per cent of chlorine.

Only two samples were examined, both of which satisfied guaranties.

Analyses are given in Table VII.

COTTON HULL ASHES

This material is used extensively in this state as a tobacco fertilizer. As a source of potash it is extremely variable. Samples this year ranged from 17 to 38 per cent of potash. Individual lots, however, are more uniform than formerly because most of the material distributed is screened and remixed.

The average composition this year is about three per cent of phosphoric acid and 26 per cent of potash. The average price quoted was \$2.60 per unit, at which figure potash from this source has cost about 12.5 cents per pound, reckoning the value of the phosphoric acid supplied at four cents per pound.

Sixty-five samples have been analyzed and results are given in Table VIII.

WOOD ASHES

One sample of Canada wood ashes was submitted by a purchaser. The sample contained 2.15 per cent of phosphoric acid and 5.42 per cent of potash.

TABLE VII. ANALYSES OF POTASH SALTS, ETC.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Potash	
			Found	Guaranteed
	Carbonate of Potash			
	<i>Sampled by Station</i>			
4651	Apothecaries Hall Co., Waterbury	Sampled at factory	% 66.29	% 60.00
4582	Berkshire Chemical Co., Bridgeport	Sampled at factory	67.01	60.00
4558	Olds & Whipple, Inc., Hartford	Sampled at factory	65.92	65.00
	<i>Sampled by Purchaser</i>			
3815	Apothecaries Hall Co., Waterbury, Car No. 161228	Hatheway & Steane, Inc., Hartford	65.10	60.00
3816	Apothecaries Hall Co., Waterbury, Car No. 14161	Hatheway & Steane, Inc., Hartford	65.40	60.00
3817	Apothecaries Hall Co., Waterbury, Car No. 149204	Hatheway & Steane, Inc., Hartford	65.75	60.00
4002	Apothecaries Hall Co., Waterbury, Car No. 13513	Hatheway & Steane, Inc., Hartford	65.82	60.00
4618	Apothecaries Hall Co., Waterbury	A. N. Shepard & Son, Hartford	66.00	60.00
4532	Berkshire Chemical Co., Bridgeport	Consolidated Cigar Corp., Hartford	64.87	60.00
3799	Berkshire Chemical Co., Bridgeport	Tobacco Station, Windsor	64.71	65.40
4645	O. Hommel Co., Inc., Pittsburgh, Pa.	Cullman Bros., Inc., Hartford	61.73	64.00
3528	A. Klipstein Co., New York City, Car No. 171350	American Sumatra Tobacco Co., Bloomfield	67.44	.....
3529	A. Klipstein Co., New York City, Car No. 172328	American Sumatra Tobacco Co., Bloomfield	67.60	.....
3530	A. Klipstein Co., New York City, Car No. 164230	American Sumatra Tobacco Co., Bloomfield	66.14	.....
3531	A. Klipstein Co., New York City, Car No. 160188	American Sumatra Tobacco Co., Bloomfield	67.17	.....
3532	A. Klipstein Co., New York City, Car No. 164052	American Sumatra Tobacco Co., Bloomfield	65.03	.....
3706	A. Klipstein Co., New York City, Car No. 169609	American Sumatra Tobacco Co., Bloomfield	67.71	.....
3832	A. Klipstein Co., New York City, Car No. 169606	American Sumatra Tobacco Co., Bloomfield	67.45	.....
3183	A. Klipstein Co., New York City, Car No. 160151	Consolidated Cigar Corp., Hartford	66.34	.....

TABLE VII. ANALYSES OF POTASH SALTS, ETC.—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Potash	
			Found	Guaranteed
			%	%
4340	Manufacturer unknown	Aaron Lerman, Colchester	50.26	.....
4341	Manufacturer unknown	Aaron Lerman, Colchester	51.64	.....
	Muriate of Potash <i>Sampled by Purchaser</i>			
	Manufacturer unknown	E. J. Bantle, Glastonbury	50.06	48.00
3914	American Agricultural Chemical Co., New York City	Sampled at factory	48.91	48.00
4447	Apothecaries Hall Co., Waterbury	James Caffrey, Cromwell	48.44	48.00
4669	Armour Fertilizer Works, New York City	Sampled at factory	48.59	48.00
4086	Berkshire Chemical Co., Bridgeport	Joseph Norton, Broad Brook	49.09	48.00
4646	Central Chemical Co., Hagerstown, Md.	L. T. Frisbie Co., New Haven	49.74	48.00
3968	Consolidated Rendering Co., Boston, Mass.	E. W. Woolam, Warehouse Point	50.40	48.00
4549	Eastern States Farmers' Exchange, Springfield, Mass.	Joseph Winn, Enfield	49.39	48.00
4221	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Sampled at factory	49.60	48.65
3916	Olds & Whipple, Inc., Hartford	Sampled at factory	49.46	48.00
3904	The Rogers & Hubbard Co., Portland	H. H. McKnight, Ellington	47.61	48.00
4454	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.			
	<i>Sampled by Purchaser</i>			
3310	Apothecaries Hall Co., Waterbury, Car No. 164946	Hatheway & Steane, Inc., Hartford	48.28	48.00
3483	Apothecaries Hall Co., Waterbury, Car No. 166610	Hatheway & Steane, Inc., Hartford	49.73	48.00

TABLE VII. ANALYSES OF POTASH SALTS, ETC.—*Concluded.*

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Potash	
			Found	Guaranteed
	Sulfate of Potash			
	<i>Sampled by Purchaser</i>			
3484	Apothecaries Hall Co., Waterbury, Truck 1943	Hatheway & Steane, Inc., Hartford	% 48.90	% 48.00
4119	Apothecaries Hall Co., Waterbury	P. Lorillard Co., Windsor	48.52	48.00
3317	Harshaw, Fuller & Goodwin, New York City, Car No. 167425	American Sumatra Tobacco Co., Bloomfield	50.04	.....
3318	Harshaw, Fuller & Goodwin, New York City, Car No. 164023	American Sumatra Tobacco Co., Bloomfield	49.04	.....
4536	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	53.40	48.00
4701	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	53.72	48.00
4623	Olds & Whipple, Inc., Hartford	Consolidated Cigar Corp., Hartford	49.10	48.65
4398	Olds & Whipple, Inc., Hartford	Herbert N. Cotton, East Granby	48.99	48.65
4780	Olds & Whipple, Inc., Hartford	John M. Herr, Burnside	47.67	48.65
4284	Olds & Whipple, Inc., Hartford, Car No. 162045	Silberman & Kahn, Hartford	50.02	48.65
4438	Apothecaries Hall Co., Waterbury	Sampled at factory	29.92	26.00
4363	Olds & Whipple, Inc., Hartford, Car No. 171738	L. Wetstone & Sons, Inc., Hartford	25.99	26.00

TABLE VIII. ANALYSES OF COTTON HULL ASHES.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid	Potash
			%	%
3910	<i>Sampled by Station</i>	F. R. Goodrich, Portland	2.15	31.45
4324	Ed. Eggert, Hartford	George A. Peckham, Suffield	3.36	34.17
3827	Ed. Eggert, Hartford	J. E. Shepard, So. Windsor	1.88	33.57
3826	Ed. Eggert, Hartford	J. E. Shepard, So. Windsor	2.33	23.03
4198	Ed. Eggert, Hartford	J. E. Shepard, So. Windsor	5.12	16.73
3990	International Agricultural Corp., Boston, Mass.	Robert Gregg, West Suffield	2.80	38.17
4686	International Agricultural Corp., Boston, Mass.	L. W. Lloyd, Suffield	6.51	37.84
3601	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	L. B. Haas & Co., Hartford	2.15	31.67
4196	Olds & Whipple, Inc., Hartford	J. E. Shepard, So. Windsor	3.25	21.57
4611	<i>Sampled by Purchaser</i>	Charter Oak Tobacco Co., Warehouse Point	2.90	29.68
4612	Ed. Eggert, Hartford	Charter Oak Tobacco Co., Warehouse Point	3.03	26.34
4702	Ed. Eggert, Hartford	Charter Oak Tobacco Co., Warehouse Point	2.19	21.75
3254	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	4.05	22.45
3256	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	3.95	20.61
3261	Ed. Eggert, Hartford, No. 1	Cullman Bros., Inc., Hartford	3.54	20.45
3262	Ed. Eggert, Hartford, No. 2	Cullman Bros., Inc., Hartford	3.84	20.28
3497	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	3.47	24.60
3498	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	4.00	21.09

TABLE VIII. ANALYSES OF COTTON HULL ASHES—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid	Potash
	<i>Sampled by Purchaser</i>			
3511	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	3.81	20.65
3366	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	2.73	23.46
3786	Ed. Eggert, Hartford	Cullman Bros., Inc., Hartford	2.72	29.97
3548	Ed. Eggert, Hartford	L. B. Haas & Co., Hartford	2.70	24.32
3693	Ed. Eggert, Hartford	Hatheway & Steane, Inc., Hartford	3.07	22.95
3694	Ed. Eggert, Hartford	Hatheway & Steane, Inc., Hartford	2.86	23.64
3818	Ed. Eggert, Hartford	Hatheway & Steane, Inc., Hartford	2.65	29.07
4001	Ed. Eggert, Hartford	Hatheway & Steane, Inc., Hartford	2.40	27.37
2269 ¹	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.20	28.98
3667	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.90	23.35
3668	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.80	24.60
3669	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.78	24.79
4299	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.86	24.07
4305	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.49	27.56
4707	Ed. Eggert, Hartford	A. N. Shepard & Son, Hartford	2.59	27.09
4277	Ed. Eggert, Hartford	Silberman & Kahn, Hartford	2.85	22.69
3239	Ed. Eggert, Hartford	Spencer Bros., Suffield	2.85	28.12
3240	Ed. Eggert, Hartford	Spencer Bros., Suffield	3.80	20.22
3542	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	3.48	35.40
3666	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	1.54	19.61

¹ 1929 stock.

TABLE VIII. ANALYSES OF COTTON HULL ASHES—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid	Potash
	<i>Sampled by Purchaser</i>			
3698	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	% 3.50	% 37.30
4052	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	3.82	23.54
4185	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.55	28.27
4356	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.76	32.33
4357	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.56	31.22
4380	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.15	31.27
4381	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.25	32.29
4534	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.75	32.86
4535	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.66	31.25
4624	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	2.16	20.94
4625	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	1.84	21.59
3949	Olds & Whipple, Inc., Hartford	P. J. Anderson, Windsor	3.18	20.97
3272	Olds & Whipple, Inc., Hartford, Car No. 168830	Consolidated Cigar Corp., Hartford	3.60	24.73
3389	Olds & Whipple, Inc., Hartford, Car No. 160109	Consolidated Cigar Corp., Hartford	4.25	25.16
4101	Olds & Whipple, Inc., Hartford	Cullman Bros., Inc., Hartford	4.01	26.15
4102	Olds & Whipple, Inc., Hartford, Car S. A. L. 12969	Cullman Bros., Inc., Hartford	3.23	30.53
4103	Olds & Whipple, Inc., Hartford, Car S. L. S. F. 146320	Cullman Bros., Inc., Hartford	2.07	31.40
4017	Olds & Whipple, Inc., Hartford, Car No. 101090	Edwards & Brewer, Inc., Hartford	3.10	19.58
4314	Olds & Whipple, Inc., Hartford, Car No. 166646	Edwards & Brewer, Inc., Hartford	3.99	24.69
3753	Olds & Whipple, Inc., Hartford	L. B. Haas & Co., Hartford	3.71	25.27

TABLE VIII. ANALYSES OF COTTON HULL ASHES—Concluded.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Phosphoric acid	Potash
			%	%
4020	Olds & Whipple, Inc., Hartford, Car No. 112280	L. B. Haas & Co., Hartford	3.00	19.74
4021	Olds & Whipple, Inc., Hartford, Car No. 154817	L. B. Haas & Co., Hartford	3.09	18.66
4353	Olds & Whipple, Inc., Hartford	Julius Marqusee & Sons, Inc., Hartford	3.88	26.70
4354	Olds & Whipple, Inc., Hartford	Julius Marqusee & Sons, Inc., Hartford	3.96	26.65
4282	Olds & Whipple, Inc., Hartford, Car No. 162045	Silberman & Kahn, Hartford	3.58	26.23
4372	Olds & Whipple, Inc., Hartford	L. Wetstone & Sons, Inc., Hartford	2.60	28.18
4443	Manufacturer unknown	Charter Oak Tobacco Co., Warehouse Point	2.77	19.59

Sampled by Purchaser

IV. RAW MATERIALS CONTAINING NITROGEN
AND POTASH

NITRATE OF POTASH, ETC.

Nitrate of potash (saltpeter), should contain not less than 12 per cent of nitrogen and 44 per cent of potash.

Nitrate of soda-potash is a mixture of about three parts nitrate of soda and one part of nitrate of potash. It therefore contains about 14 per cent of nitrogen and 10 per cent or more of potash.

Seven samples of nitrate of potash, two of which were deficient in nitrogen, and three samples of nitrate of soda-potash were examined and results are given in Table IX.

TABLE IX. ANALYSES OF NITRATE OF POTASH, ETC.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Equivalent to ammonia		Potash	
			Found	Guaranteed	Found	Guaranteed	Found	Guaranteed
	Nitrate of Potash <i>Sampled by Station</i>							
4435	Apothecaries Hall Co., Waterbury ..	Sampled at factory	% 13.72	% 13.00	% 16.68	%	% 45.36	% 44.00
4197	Eastern States Farmers' Exchange, Springfield, Mass.	J. E. Shepard, So. Windsor	13.10	13.00	15.93	15.79	44.28	44.00
3952	Olds & Whipple, Inc., Hartford	Sampled at factory	13.82	12.35	16.80	15.00	46.06	44.00
	<i>Sampled by Purchaser</i>							
4779	Olds & Whipple, Inc., Hartford	John M. Herr, Burnside	13.34	12.35	16.22	15.00	45.22	44.00
4286	Olds & Whipple, Inc., Hartford	Silberman & Kahn, Hartford	13.66	12.35	16.61	15.00	45.59	44.00
4360	Olds & Whipple, Inc., Hartford, Car No. 171738	L. Wetstone & Sons, Inc., Hartford	13.50	12.35	16.41	15.00	45.66	44.00
4369	Olds & Whipple, Inc., Hartford	L. Wetstone & Sons, Inc., Hartford	13.20	12.35	16.05	15.00	45.03	44.00
	Nitrate of Soda-Potash <i>Sampled by Station</i>							
3599	Berkshire Chemical Co., Bridgeport..	L. B. Haas, Hartford	14.36	14.80	17.46	18.00	14.27	12.00
3600	Berkshire Chemical Co., Bridgeport..	L. B. Haas, Hartford	14.30	14.80	17.39	18.00	14.29	12.00
	<i>Sampled by Purchaser</i>							
3756	Apothecaries Hall Co., Waterbury ..	The Lyman Farm, Middlefield	15.00	.....	18.24	18.00	12.25	12.00

V. RAW MATERIALS CONTAINING NITROGEN AND PHOSPHORIC ACID

DRY GROUND FISH

Dry ground fish is made from non-edible fish and the offal from fish canneries. It may be acidulated to prevent decomposition. The product is generally sold on a guaranty of 8.20 per cent of nitrogen and five to six per cent of phosphoric acid.

Fifty-six samples have been examined, 12 of which were official and the remainder were submitted by purchasers. The average guaranties were 8.50 for nitrogen and 5.8 for phosphoric acid, while 8.8 per cent nitrogen and 7.2 per cent phosphoric acid were found. Only six deficiencies greater than 0.1 per cent nitrogen were found.

Ammonium sulfate was found in a number of samples but in none to an extent suggesting adulteration. Nitrogen in the form of ammonia salts did not exceed 0.25 per cent in any case. Calcium carbonate and mineral phosphate (superphosphate) were also found but in no considerable amounts. The deficiencies in nitrogen could not be attributed to admixtures of these materials.

Analyses are given in Table X.

TANKAGE

Tankage is the refuse material derived from meat and bone. The refuse is treated with steam and then pressed to remove fat, after which the residue is dried and ground. High grade tankage contains 8 to 10 per cent of nitrogen and 5 to 10 per cent of phosphoric acid. Such tankage contains a considerable quantity of meat. If bone predominates there will be more phosphoric acid and less nitrogen.

Eight samples were analyzed, two of which were somewhat below guaranties in nitrogen and one in phosphoric acid. The average nitrogen content of nitrogen found was 6.34 per cent as compared with an average guaranty of 6.11 per cent. The average content of phosphoric acid was 13.88 per cent as compared with an average guaranty of 12.90 per cent.

One sample, 4079, contained 0.8 per cent of nitrogen in the form of ammonium salt and ammonium sulfate was found by microscopic examination.

Analyses are given in Table XI.

GROUND BONE

Raw ground bone is made by drying and grinding animal bones that have not been previously steamed. Steamed bone is the

product made by steaming bones under pressure after which they are dried and ground. Steamed bone contains considerably less nitrogen than raw bone.

Twenty-two samples were drawn by the Station Agent and 29 were submitted by purchasers, making a total of 51. There was only one considerable deficiency in nitrogen as compared with the guaranty, and two in phosphoric acid. The average nitrogen found was 2.73 per cent and the average phosphoric acid 25.24.

Analyses are given in Table XII.

TABLE X. ANALYSES OF DRY GROUND FISH.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		Station No.
			Total found	Total guaranteed		Total found	Total guaranteed	
<i>Sampled by Station</i>								
3913	American Agricultural Chemical Co., New York City	E. J. Bantle, Glastonbury	8.28	8.23	10.07	8.96	6.00	3913
4439	Apothecaries Hall Co., Waterbury	Sampled at factory	8.78	8.20	10.67	4.71	5.00	4439
4667	Armour Fertilizer Works, New York City	James Caffrey, Cromwell	8.90	8.23	10.82	9.50	4.00	4667
4083	Berkshire Chemical Co., Bridgeport	Sampled at factory	9.50	9.45	11.55	6.79	6.00	4083
4084	Berkshire Chemical Co., Bridgeport	Sampled at factory	8.36	8.22	10.16	7.41	6.00	4084
3970	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	9.76	8.22	11.87	7.86	6.40	3970
4550	Eastern States Farmers' Exchange, Springfield, Mass.	Jos. Norton, Broad Brook	8.37	8.00	10.18	8.51	6.00	4550
4218	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Joseph Winn, Enfield	9.37	9.46	11.39	8.03	5.00	4218
3907	Olds & Whipple, Inc., Hartford	J. E. Shepard, So. Windsor	8.34	8.23	10.14	8.90	5.00	3907
3902	The Rogers & Hubbard Co., Portland	Sampled at factory	8.42	8.22	10.24	6.89	6.00	3902
4142	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	E. O. Chapman, North Haven	8.45	8.22	10.27	10.03	10.00	4142
4574	Wilcox Fertilizer Co., Mystic	Richards & Cooley, Silver Lane	9.00	8.23	10.94	7.05	6.00	4574

TABLE X. ANALYSES OF DRY GROUND FISH—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		Station No.
			Total found	Total guaranteed		Total found	Total guaranteed	
	<i>Sampled by Purchaser</i>							
3512	Apothecaries Hall Co., Waterbury	L. B. Haas & Co., Hartford	8.67	8.20	10.54	5.27	5.00	3512
3513	Apothecaries Hall Co., Waterbury	L. B. Haas & Co., Hartford	8.63	8.20	10.49	4.80	5.00	3513
3309	Apothecaries Hall Co., Waterbury, Car No. 164946	Hatheway & Steane, Inc., Hartford	8.76	8.20	10.65	7.15	5.00	3309
3375	Apothecaries Hall Co., Waterbury, Car No. 73512	Hatheway & Steane, Inc., Hartford	8.34	8.20	10.14	4.50	5.00	3375
3376	Apothecaries Hall Co., Waterbury, Truck 1943	Hatheway & Steane, Inc., Hartford	8.53	8.20	10.37	6.19	5.00	3376
3481	Apothecaries Hall Co., Waterbury, Truck 1001	Hatheway & Steane, Inc., Hartford	8.34	8.20	10.14	4.81	5.00	3481
4120	Apothecaries Hall Co., Waterbury	P. Lorillard Co., Windsor	9.03	8.20	10.98	4.75	5.00	4120
4300	Apothecaries Hall Co., Waterbury, Car No. 170146	A. N. Shepard & Son, Hartford	9.30	8.20	11.31	4.60	5.00	4300
3174	Berkshire Chemical Co., Bridgeport, Car No. 83968	American Sumatra Tobacco Co., Bloomfield	7.88	8.22	9.58	6.53	6.00	3174
3175	Berkshire Chemical Co., Bridgeport, Car No. 5758	American Sumatra Tobacco Co., Bloomfield	8.23	8.22	10.01	7.19	6.00	3175
3176	Berkshire Chemical Co., Bridgeport, Car No. 166471	American Sumatra Tobacco Co., Bloomfield	8.22	8.22	9.99	7.16	6.00	3176

DRY GROUND FISH

TABLE X. ANALYSES OF DRY GROUND FISH—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		Station No.
			Total found	Total guaranteed		Total found	Total guaranteed	
	<i>Sampled by Purchaser</i>							
3177	Berkshire Chemical Co., Bridgeport, Car No. 171519	American Sumatra Tobacco Co., Bloomfield	8.17	8.22	9.93	7.41	6.00	3177
3178	Berkshire Chemical Co., Bridgeport, Car No. 246489	American Sumatra Tobacco Co., Bloomfield	8.02	8.22	9.75	6.91	6.00	3178
3319	Berkshire Chemical Co., Bridgeport, Car No. 168937	American Sumatra Tobacco Co., Bloomfield	7.96	8.22	9.68	6.22	6.00	3319
3320	Berkshire Chemical Co., Bridgeport, Car No. 71500	American Sumatra Tobacco Co., Bloomfield	8.48	8.22	10.31	7.49	6.00	3320
3321	Berkshire Chemical Co., Bridgeport, Car No. 170573	American Sumatra Tobacco Co., Bloomfield	7.93	8.22	9.64	6.16	6.00	3321
3402	Berkshire Chemical Co., Bridgeport, Car No. 162250	American Sumatra Tobacco Co., Bloomfield	8.89	8.22	10.81	7.66	6.00	3402
3403	Berkshire Chemical Co., Bridgeport, Car No. 168466	American Sumatra Tobacco Co., Bloomfield	9.06	8.22	11.02	6.90	6.00	3403
2713	Berkshire Chemical Co., Bridgeport, Car No. 161352	Consolidated Cigar Corp., Hartford ..	9.63	9.45	11.71	7.85	6.00	2713
2714	Berkshire Chemical Co., Bridgeport, Car No. 166735	Consolidated Cigar Corp., Hartford ..	9.67	9.45	11.76	7.84	6.00	2714

TABLE X. ANALYSES OF DRY GROUND FISH—Continued.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		Station No.
			Total found	Total guaranteed		Total found	Total guaranteed	
	<i>Sampled by Purchaser</i>							
2876	Berkshire Chemical Co., Bridgeport, Car No. 38981	Consolidated Cigar Corp., Hartford ..	9.64	9.45	%	%	6.00	2876
3153	Berkshire Chemical Co., Bridgeport, Car No. 166388	Consolidated Cigar Corp., Hartford ..	9.40	.....	11.43	7.08	6.00	3153
3995	Berkshire Chemical Co., Bridgeport, Car No. 171306	Consolidated Cigar Corp., Hartford ..	8.78	8.22	10.67	7.50	6.00	3995
4051	Berkshire Chemical Co., Bridgeport, Car No. 91442	Consolidated Cigar Corp., Hartford ..	8.90	8.22	10.82	7.33	6.00	4051
4184	Berkshire Chemical Co., Bridgeport, Car No. 171100	Consolidated Cigar Corp., Hartford ..	7.96	8.22	9.68	5.83	6.00	4184
4320	Berkshire Chemical Co., Bridgeport, Car No. 71311	Consolidated Cigar Corp., Hartford ..	8.35	8.22	10.15	6.45	6.00	4320
4322	Berkshire Chemical Co., Bridgeport, Car No. 88511	Consolidated Cigar Corp., Hartford ..	9.64	9.45	11.72	6.50	6.00	4322
4531	Berkshire Chemical Co., Bridgeport, Car No. 84925	Consolidated Cigar Corp., Hartford ..	8.89	8.22	10.81	7.16	6.00	4531
3253	Berkshire Chemical Co., Bridgeport, Car No. 169317	Cullman Bros., Inc., Hartford ..	9.52	9.45	11.57	7.04	6.00	3253
3255	Berkshire Chemical Co., Bridgeport	Cullman Bros., Inc., Hartford ..	9.58	9.45	11.65	6.96	6.00	3255

TABLE X. ANALYSES OF DRY GROUND FISH—Concluded.

Station No.	Manufacturer or Wholesale Dealer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		Station No.
			Total found	Total guaranteed		Total found	Total guaranteed	
	<i>Sampled by Purchaser</i>							
3258	Berkshire Chemical Co., Bridgeport, Car No. 166333	Cullman Bros., Inc., Hartford	9.26	9.45	11.26	6.84	6.00	3258
3259	Berkshire Chemical Co., Bridgeport, Car No. 169972	Cullman Bros., Inc., Hartford	9.56	9.45	11.62	6.96	6.00	3259
3524	Berkshire Chemical Co., Bridgeport, Car No. 170597	L. B. Haas & Co., Hartford	8.70	8.22	10.58	7.63	6.00	3524
4266	Berkshire Chemical Co., Bridgeport	Silberman & Kahn, Hartford	9.76	9.45	11.87	8.08	6.00	4266
4273	Berkshire Chemical Co., Bridgeport	Silberman & Kahn, Hartford	9.45	9.45	11.49	7.36	6.00	4273
4700	Old Deerfield Fertilizer Co., So. Deerfield, Mass.	Consolidated Cigar Corp., Hartford	9.06	8.23	11.02	8.35	5.00	4700
4395	Olds & Whipple, Inc., Hartford	Herbert N. Cotton, East Granby	8.24	8.23	10.02	8.99	5.00	4395
4104	Olds & Whipple, Inc., Hartford	Cullman Bros., Inc., Hartford	8.42	8.23	10.24	8.38	8.00	4104
4313	Olds & Whipple, Inc., Hartford	L. B. Haas & Co., Hartford	8.73	8.23	10.61	8.50	5.00	4313
4366	Olds & Whipple, Inc., Hartford	L. Wetstone & Sons, Inc., Hartford	8.60	8.23	10.46	8.60	5.00	4366
4105	The Wilcox Fertilizer Co., Mystic, Car No. H. 164033	Cullman Bros., Inc., Hartford	9.35	8.23	11.37	7.25	6.00	4105
4106	The Wilcox Fertilizer Co., Mystic, Car No. 166771	Cullman Bros., Inc., Hartford	8.90	8.23	10.82	6.79	6.00	4106
4258	Manufacturer unknown	Tobacco Station, Windsor	8.07	8.23	9.81	8.45	6.00	4258
4804	Manufacturer unknown	Paul P. Rostek, Melrose	8.60	8.23	10.46	7.38	6.00	4804

TABLE XI. ANALYSES OF TANKAGE.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total nitrogen		Phosphoric acid		Mechanical analysis		Station No.
			Total found	Total guaranteed	%	Total guaranteed	Total found	Total guaranteed	Finer than 1.50 inch	Coarser than 1.50 inch	
	<i>Sampled by Station</i>										
4096	Apothecaries Hall Co., Waterbury	J. A. Giasnapp, West Cheshire	4.22	3.29	5.13	20.50	20.00	47.0	53.0	4096	
4257	Apothecaries Hall Co., Waterbury	J. B. McArdle, Greenwich	9.07	7.40	11.03	5.60	3.00	37.5	62.5	4257	
3966	Connecticut Fat Rendering & Fertilizer Corp., New Haven	Sampled at factory	4.21	...	5.12	21.00	25.00	38.0	62.0	3966	
3972	Consolidated Rendering Co., Boston, Mass.	L. T. Frisbie Co., New Haven	7.76	7.41	9.43	10.70	9.15	37.0	63.0	3972	
4592	Consolidated Rendering Co., Boston, Mass.	Burr Nurseries, Manchester	6.20	4.92	7.54	15.71	14.00	31.0	69.0	4592	
4632	Olds & Whipple, Inc., Hartford	Julius Lewis, Southington	7.27	7.40	8.84	12.73	9.15	34.0	66.0	4632	
4079	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	W. H. Burr, Westport	4.97	4.94	6.04	15.17	13.73	52.5	47.5	4079	
4231	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Rand & Christensen, Wilson	6.98	7.40	8.49	10.64	9.15	32.5	67.5	4231	

TABLE XII. ANALYSES OF GROUND BONE.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total 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	
	<i>Sampled by Station</i>									
3901	American Agricultural Chemical Co., New York City	S. P. Stropple, New Britain	2.75	2.47	3.34	27.76	22.88	47.5	52.5	3901
4256	Apothecaries Hall Co., Waterbury	J. B. McArdle, Greenwich	3.81	3.29	4.63	20.06	20.00	52.5	47.5	4256
4452	Apothecaries Hall Co., Waterbury	Rockville Milling Co., Rockville	3.28	2.46	3.99	22.32	22.00	46.0	54.0	4452
4072	Armour Fertilizer Works, New York City	Harrison & Gould, Milford	2.54	2.47	3.09	23.84	22.00	66.0	34.0	4072
4075	Berkshire Chemical Co., Bridgeport	C. Buckingham & Co., Southport	2.70	2.47	3.28	23.60	20.00	60.0	40.0	4075
4087	Berkshire Chemical Co., Bridgeport	Sampled at factory	0.90	0.82	1.09	32.95	27.46	75.5	24.5	4087
3964	Consolidated Rendering Co., Boston, Mass.	Lightbourn & Pond, New Haven	3.88	2.05	4.72	22.75	22.90	33.0	67.0	3964
4194	Eastern States Farmers' Exchange, Springfield, Mass.	J. E. Shepard, So. Windsor	2.63	2.50	3.20	23.70	23.00	60.5	39.5	4194
4195	Eastern States Farmers' Exchange, Springfield, Mass.	J. E. Shepard, So. Windsor	2.48	2.50	3.02	25.80	23.00	62.5	37.5	4195
4725	Eastern States Farmers' Exchange, Springfield, Mass.	Jos. Norton, Broad Brook	2.52	2.50	3.06	24.24	23.00	64.0	36.0	4725
3959	L. T. Frisbie Co., New Haven	Frank S. Platt Co., New Haven	4.13	3.28	5.02	23.68	22.00	34.0	66.0	3959
4884	Goulard & Olena, Inc., New York City	S. P. Stropple, New Britain	2.57	2.46	3.12	27.45	22.85	77.5	22.5	4884

TABLE XII. ANALYSES OF GROUND BONE—Continued.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total 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	
<i>Sampled by Station</i>										
4332	Miller Fertilizer Co., Baltimore, Md.	A. E. Shedd, Norwich	2.74	2.47	3.33	23.16	22.88	56.0	44.0	4332
3602	Olds & Whipple, Inc., Hartford, Car N. H. 171400	L. B. Haas & Co., Hartford	2.80	...	3.40	23.03	...	66.0	34.0	3602
3896	The Rogers & Hubbard Co., Portland	Cadwell & Jones, Hartford	3.83	3.69	4.66	26.08	24.70	72.5	27.5	3896
3897	The Rogers & Hubbard Co., Portland	Cadwell & Jones, Hartford	4.14	3.29	5.03	23.01	20.50	46.5	53.5	3897
3909	The Rogers & Hubbard Co., Portland	Sampled at factory	2.68	2.46	3.26	23.82	22.88	53.0	47.0	3909
4029	M. L. Shoemaker & Co., Philadelphia, Pa.	E. J. Bantle, Glastonbury	2.36	2.47	2.87	23.70	23.00	68.0	32.0	4029
4503	M. L. Shoemaker & Co., Philadelphia, Pa.	Geo. T. Soule Co., New Milford	3.73	3.69	4.53	22.60	21.51	23.0	77.0	4503
4080	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Rippe Bros., Westport	2.79	2.47	3.39	23.99	22.00	36.5	63.5	4080
4428	Standard Wholesale Phosphate & Acid Works, Baltimore, Md.	Stanley Svea Coal Co., New Britain	2.10	2.05	2.55	16.43	22.00	52.0	48.0	4428
4089	I. P. Thomas & Son, Philadelphia, Pa.	Ira W. Beers, Hamden	2.32	2.45	2.82	24.87	23.00	60.0	40.0	4089

GROUND BONE

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TABLE XII. ANALYSES OF GROUND BONE—Continued.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total 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		
	<i>Sampled by Purchaser</i>										
3224	Apothecaries Hall Co., Waterbury, Car No. 161143	Hatheway & Steane, Inc., Hartford..	3.60	4.40	4.38	24.42	..	44.5	55.5	3224	
3225	Apothecaries Hall Co., Waterbury, Car No. 171790	Hatheway & Steane, Inc., Hartford..	4.30	4.40	5.23	21.88	..	42.0	58.0	3225	
3306	Apothecaries Hall Co., Waterbury, Car No. 169780	Hatheway & Steane, Inc., Hartford..	4.33	..	5.26	20.62	..	47.5	52.5	3306	
3377	Apothecaries Hall Co., Waterbury, Car No. 166610	Hatheway & Steane, Inc., Hartford..	3.22	3.29	3.91	26.37	20.00	44.5	55.5	3377	
4116	Apothecaries Hall Co., Waterbury	P. Lorillard Co., Windsor	3.09	2.46	3.76	24.30	22.00	61.0	39.0	4116	
4302	Apothecaries Hall Co., Waterbury, Car No. 163735	A. N. Shepard & Son, Hartford	4.84	3.29	5.88	19.35	20.00	53.0	47.0	4302	
3154	Berkshire Chemical Co., Bridge- port, Car No. 161247	Consolidated Cigar Corp., Hartford..	2.60	2.06	3.16	23.10	23.00	..	..	3154
3273	Berkshire Chemical Co., Bridge- port, Car No. 172376	Consolidated Cigar Corp., Hartford..	2.59	..	3.15	21.52	..	68.0	32.0	3273	
3274	Berkshire Chemical Co., Bridge- port, Car No. 89343	Consolidated Cigar Corp., Hartford..	2.02	..	2.46	24.78	..	65.5	34.5	3274	
4048	Berkshire Chemical Co., Bridge- port, Car No. 229984	Consolidated Cigar Corp., Hartford..	0.92	0.82	1.12	31.52	27.46	76.5	23.5	4048	

TABLE XII. ANALYSES OF GROUND BONE—Continued.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total 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	
	<i>Sampled by Purchaser</i>									
3286	Berkshire Chemical Co., Bridgeport	Cullman Bros., Inc., Hartford	1.07	0.82	1.30	32.20	27.46	61.5	38.5	3286
3302	Berkshire Chemical Co., Bridgeport, Car No. 33979	Cullman Bros., Inc., Hartford	1.18	0.82	1.43	32.48	27.46	42.0	58.0	3302
3303	Berkshire Chemical Co., Bridgeport	Cullman Bros., Inc., Hartford	1.13	0.82	1.37	33.22	27.46	48.0	52.0	3303
3368	Berkshire Chemical Co., Bridgeport, Car No. 54406	Cullman Bros., Inc., Hartford	1.10	0.82	1.34	32.80	27.46	42.0	58.0	3368
3847	Berkshire Chemical Co., Bridgeport, Car N. H. 71008	Cullman Bros., Inc., Hartford	2.78	0.82	3.38	25.37	27.46	55.5	44.5	3847
3886	Berkshire Chemical Co., Bridgeport	A. D. Ellsworth, Broad Brook	0.92	0.82	1.12	32.38	27.46	72.5	27.5	3886
3212	Harshaw Chemical Co., New York City	American Sumatra Tobacco Co., Bloomfield	2.66	...	3.23	25.56	...	...	...	3212
3213	Harshaw Chemical Co., New York City, Car No. 21356	American Sumatra Tobacco Co., Bloomfield	2.96	...	3.60	26.00	...	...	...	3213
3214	Harshaw Chemical Co., New York City, Car No. 10923	American Sumatra Tobacco Co., Bloomfield	2.77	...	3.37	26.60	...	...	...	3214
3263	Harshaw Chemical Co., New York City, Car No. 14997	American Sumatra Tobacco Co., Bloomfield	2.71	...	3.29	27.16	...	...	...	3263
3398	Harshaw Chemical Co., New York City, Car No. 569275	American Sumatra Tobacco Co., Bloomfield	2.83	2.47	3.44	26.50	22.80	45.0	55.0	3398

TABLE XII. ANALYSES OF GROUND BONE—Concluded.

Station No.	Manufacturer	Dealer or Purchaser	Nitrogen		Ammonia equivalent to total 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	
	<i>Sampled by Purchaser</i>									
3399	Harshaw Chemical Co., New York City, Car No. 12264	American Sumatra Tobacco Co., Bloomfield	3.15	2.47	3.83	26.13	22.88	46.5	53.5	3399
3400	Harshaw Chemical Co., New York City, Car No. 12028	American Sumatra Tobacco Co., Bloomfield	2.66	2.47	3.23	27.32	22.88	52.5	47.5	3400
3401	Harshaw Chemical Co., New York City, Car No. 17644	American Sumatra Tobacco Co., Bloomfield	2.72	2.47	3.31	27.35	22.88	47.5	52.5	3401
4396	Olds & Whipple, Inc., Hartford	Herbert N. Cotton, East Granby	2.64	2.50	3.21	23.09	22.00	57.0	43.0	4396
3367	Olds & Whipple, Inc., Hartford	Cullman Bros., Inc., Hartford	2.50	2.50	3.04	25.06	22.00	63.0	37.0	3367
4100	Olds & Whipple, Inc., Hartford	Cullman Bros., Inc., Hartford	2.89	2.50	3.51	24.99	22.00	61.0	39.0	4100
3670	Olds & Whipple, Inc., Hartford, Car No. 71345	L. B. Haas & Co., Hartford	3.08	2.50	3.74	23.39	22.00	66.5	33.5	3670
4781	Olds & Whipple, Inc., Hartford	John M. Herr, Burnside	2.64	2.50	3.21	23.16	22.00	56.7	43.3	4781

VI. MIXED FERTILIZERS

MIXTURES CONTAINING NITROGEN AND PHOSPHORIC ACID

Nine samples of this class of materials were examined and results are given in Table XIII. All guaranties were satisfied except that Ammo-Phos A and B were somewhat low in nitrogen.

MIXTURES CONTAINING ONLY PHOSPHORIC ACID AND POTASH

One sample was analyzed.

4509. Eastern States 0-14-6, sampled by the Station Agent from stock of O. D. Fuller, West Simsbury. It contained 14.88 per cent available phosphoric acid and 6.71 per cent of potash and fully satisfied the guaranty.

MIXTURES CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH

(Analyses are given in Table XIV)

In this group are 226 official samples of registered brands and seven samples drawn and submitted by purchasers, 233 samples in all. The results of the inspection and analyses are briefly summarized in the following tabulated statement:

Total number of official samples analyzed	226
Samples considerably deficient in	
one item	43
two items	5
three items	0
Total items of plant food guaranteed (226 x 3)	678
Total items found deficient:	
nitrogen	28
available phosphoric acid	9
potash	17
Total guaranties substantially met or exceeded	624
Per cent of guaranties substantially met or exceeded	92
Samples showing approximate commercial deficiencies exceeding \$1.00 per ton	7
Percentage of samples deficient by more than \$1.00 per ton	3

It is interesting to note that the percentage of guaranties substantially met or exceeded is 92; and the percentage of samples showing approximate commercial deficiencies in excess of \$1.00 per ton is only three. In other words the percentage of samples that may be passed without criticism as to maintenance of guaranties is 92 and the percentage that may be passed without question of significant commercial deficiency is 97. These figures, taken together, are better than corresponding figures in any year in the last ten. It should be understood that the commercial value of deficiencies is approximated by balancing shortages against overruns in guaranteed items of plant food and that such items are evaluated at what appear to be fair trade values. This year in mixed fertilizers ammonia was reckoned at 20 cents per pound, available phosphoric acid at 5.5 cents, and potash at five cents.

TABLE XIII. ANALYSES OF MIXED FERTILIZERS CONTAINING NITROGEN AND PHOSPHORIC ACID.

Station No.	Manufacturer or Jobber	Sampled by	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		
			Found	Guaranteed		Total	"Available"	
							Found	Guaranteed
	American Cyanamid Co., New York City							
4446	Ammo-Phos A	Station agent. Stock of Julius Lewis, Southington	% 10.82	% 11.00	% 13.15	% 48.54	% 47.32	% 46.00
3905	Ammo-Phos B	Station agent. Stock of the Rogers & Hubbard Co., Portland	16.34	16.50	19.87	22.09	21.66	20.00
	Apothecaries Hall Co., Waterbury, Conn.							
4404	Lawn Fertilizer	Station agent. Stock of J. B. McArdle, Greenwich	4.22	3.29	5.13	19.62	8.42	4.00
4464	Liberty Tobacco Starter	Station agent at factory	3.44	3.29	4.18	12.03	11.09	10.00
	Milwaukee Sewerage Commission, Milwaukee, Wis.							
4461	Milorganite	Station agent. Stock of J. S. Griswold, West Hartford	5.00	5.00	6.08	2.34	1.91	2.00

TABLE XIII. ANALYSES OF MIXED FERTILIZERS CONTAINING NITROGEN AND PHOSPHORIC ACID—Concluded.

Station No.	Manufacturer or Jobber	Sampled by	Nitrogen		Ammonia equivalent to total nitrogen	Phosphoric acid		
			Found	Guaranteed		Total	"Available"	
			%	%	%	%	Found	Guaranteed
4557	Olds & Whipple, Inc., Hartford, Conn.	Station agent. Stock of A. G. Hinckley, Suffield	8.54	8.23	10.38	5.84	4.89	3.00
4362	O. & W. High Grade Tobacco Starter	L. Wetstone & Sons, Inc., Hartford ..	11.36	9.87	13.81	50.20	49.44	48.00
3937	M. L. Shoemaker & Co., Philadelphia, Pa.	Station agent. Stock of F. S. Bidwell, Windsor Locks	3.36	3.28	4.09	14.34	11.28	10.00
3884	Shoemaker's Swift-Sure Tobacco Starter	Cullman Bros., Inc., Hartford	3.41	3.28	4.14	14.85 ¹	.....	.....

¹ Total P₂O₅ guaranteed 11.00%.

TABLE XIV A. SUMMARY OF CHEMICAL DEFICIENCIES

	No. of samples	No. of guaranties	Deficiencies in			Per cent of guaranties met
			Nitrogen	Avail. P ₂ O ₅	Potash	
American Agricultural Chemical Co. . .	39	117	7	0	4	91
Apothecaries Hall Co.	15	45	0	1	2	93
Armour Fertilizer Works	11	33	1	2	0	91
Associated Seed Growers	3	9	0	0	0	100
Bartlett, F. A., Tree Expert Co.	1	3	0	0	0	100
Berkshire Chemical Co.	11	33	2	0	1	91
Bridge's, A. D., Sons	2	6	0	0	0	100
Central Chemical Co.	8	24	5	1	1	71
Davy Tree Expert Co.	1	3	0	0	0	100
Eastern States Farmers' Exchange . . .	10	30	1	0	0	97
Essex Fertilizer Co.	5	15	1	0	1	87
Frisbie, L. T., Co.	9	27	0	0	0	100
Goulard and Olena, Inc.	1	3	0	1	0	67
Grasselli Chemical Co.	1	3	1	0	0	67
International Agricultural Corp.	2	6	0	0	1	83
James, Henry, and Son	2	6	1	0	0	83
Lowell Fertilizer Co.	6	18	1	1	0	89
Maine Farmers' Exchange	3	9	2	1	0	67
Mapes Formula and Peruvian Guano Co.	11	33	0	0	0	100
Millane Nurseries and Tree Expert Co.	1	3	0	0	0	100
Miller Fertilizer Co.	3	9	1	0	0	89
New England Fertilizer Co.	6	18	0	1	2	83
Old Deerfield Fertilizer Co.	6	18	1	0	0	94
Olds and Whipple, Inc.	10	30	0	0	0	100
Parmenter and Poley	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
The Rogers and Hubbard Co.	19	57	1	0	0	98
Shoemaker, M. L., & Co.	1	3	0	1	0	67
Springfield Rendering Co.	3	9	0	0	0	100
Standard Wholesale Phosphate and Acid Works	10	30	2	0	1	90
Swift & Co.	1	3	0	0	0	100
Synthetic Nitrogen Products Co.	2	6	0	0	2	67
Tennessee Copper and Chemical Corp.	1	3	0	0	0	100
Thomas, I. P., & Sons	8	24	0	0	0	100
Virginia-Carolina Chemical Co.	3	9	0	0	0	100
Walker-Gordon Co.	1	3	0	0	1	67
Woodruff, S. D., & Sons	1	3	1	0	0	67
Worcester Rendering Co.	5	15	0	0	1	93
Totals	226	678	28	9	17	92

SAMPLES SHOWING COMMERCIAL DEFICIENCIES

Samples showing commercial deficiencies in excess of \$1.00 per ton, estimated as already described, are as follows:

4516	National Complete Tobacco Fertilizer	\$1.25
4467	Sanderson's Complete Tobacco Grower	1.44
4641	Central Chemical Co, Grow-All Cobbler Brand	3.06
4634	Central Chemical Co., Grow-All Potato Special	1.19
4517	Eastern States 10-5-10 Tobacco	2.33
4335	Miller Fertilizer Co., Top Dresser	2.04
4192	Standard Wholesale Phosphate & Acid Works 7-6-6	4.09

For a number of years we have compiled the data on commercial deficiencies to show the cumulative record over a period of time. The data now covers a period of 10 years and are given in Table XIVb. No manufacturer is included unless 10 or more samples of his goods have been examined in the period covered. The list changes somewhat from year to year by reason of change in firm name, discontinuance of business, or other reasons. Reference to the table shows that, for the manufacturers listed, 94 per cent of the samples analyzed have shown no commercial deficiencies, or none in excess of \$1.00 per ton, for the 10-year period; and it also shows that for the season 1930 the corresponding percentage is 98. The percentages comparable to these in past years have been very good, 90 per cent or more, but never have they been so satisfactory as this year.

TABLE XIV B. COMMERCIAL DEFICIENCIES FOR THE PERIOD 1921-1930

Manufacturer	Total number of samples	Number equaling or exceeding guaranties in money value	Per cent for 10 yr. period	No. of samples for 1930	Per cent for 1930
American Agricultural Chemical Co.	429	412	96	39	95
Apothecaries Hall Co.	102	101	99	15	100
Armour Fertilizer Works	107	88	82	11	100
Berkshire Chemical Co.	90	90	100	11	100
Bridge's, A. D., Sons Co.	21	21	100	2	100
Eastern States Farmers' Exchange	103	88	85	10	90
Essex Fertilizer Co.	64	61	95	5	100
Frisbie, L. T., Co.	98	88	90	9	100
International Agricultural Corp. ..	65	59	90	2	100
Lowell Fertilizer Co.	98	88	90	6	100
Mapes Formula and Peruvian Guano Co.	129	128	99	11	100
New England Fertilizer Co.	74	71	96	6	100
Olds and Whipple, Inc.	67	67	100	10	100
Parmenter and Polsey	31	30	97	1	100
Platt, Frank S., Co.	12	11	92	2	100
Rogers & Hubbard Co., The	151	146	97	19	100
Royster, F. S., Guano Co.	67	54	81 ¹	0	...
Shoemaker, M. L., & Co.	27	27	100	1	100
Springfield Rendering Co.	40	38	95	3	100
Standard Wholesale Acid and Phosphate Works	28	26	93 ²	10	90
Thomas, I. P., & Sons	49	49	100	8	100
Virginia-Carolina Chemical Co. ..	63	59	94	3	100
Worcester Rendering Co.	43	39	91	5	100
Totals	1958	1841	94	189	98

¹ No samples in 1930.² For three years.

STATEMENT OF GRADE

Not much progress appears to have been made on the part of manufacturers to change the significance of the statement of grade, that is to have the first numeral in the grade symbol represent "nitrogen" instead of ammonia. From our registrations it appears that only three manufacturers have adopted that plan. This Station has no objection to the proposed change in the form of statement but if made, the nitrogen should be stated in even units. Our law requires that the guaranteed analysis shall state not only nitrogen but the equivalent ammonia also.

QUALITY OF THE ORGANIC NITROGEN

Ten samples contained insoluble organic nitrogen that showed less than 50 per cent activity by the alkaline method and less than 80 per cent by the neutral method, indicating organic nitrogen of questionable character. However, it seems fair to pass these samples without special criticism because in most of them the water soluble nitrogen (mineral and organic) and the estimated active insoluble organic practically equals the guaranties, and because in the other cases the actual amount of insoluble organic nitrogen constitutes such a small proportion of the total nitrogen present.

SPECIAL MIXTURES AND HOME MIXTURES

Forty-nine samples of mixed fertilizers have been examined for individuals, in most cases the samples being drawn by the persons interested. The Station is responsible only for the correctness of the analyses of such materials as received.

Analyses are given in Table XV.

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i> American Agricultural Chemical Co., New York City			
4473	AA Top Dresser	8-6-6	Simsbury
4507	AAC Acme Fertilizer	1-9-4	Norfolk
4139	AAC Aroostook Potato Manure	5-8-7	Plantsville
4462	AAC Complete General Fertilizer	3-8-4	Bloomfield
4511	AAC Double A Tobacco Fertilizer	5-3-5	Granby
4254	AAC General Crop Fertilizer	2-9-3	So. Norwalk
3908	AAC Grass & Lawn Top Dressing	6-6-4	New Britain
4164	AAC Hi-Grade Tobacco Manure	7-3-7	Hartford
3944	AAC Monarch Fertilizer	4-8-4	New Britain
3945	AAC Peerless Potato Manure	4-8-7	New Britain
4476	AAC Prolific 10% Potash Fertilizer	2-8-10	Granby
4472	AAC Tobacco Starter	3-7-16	Simsbury
4474	Agrico	6-9-6	Simsbury
4460	Agrico for Aroostook	6-8-7	Farmington
4406	Agrico for Corn	3-10-6	Greenwich
4420	Agrico for Corn	3-10-6	East River
4407	Agrico for Truck	5-10-5	Greenwich
4226	Bowker's All Round Fertilizer	3-8-4	Thompsonville ..
4410	Bowker's Market Garden Fertilizer	4-8-4	New Canaan
4411	Bowker's Stockbridge Early Crop Manure	5-8-7	New Canaan
4457	Bowker's Stockbridge Hill & Drill Fertilizer	4-8-7	Bristol
4564	Bowker's Stockbridge Tobacco Manure	5-3-5	West Haven
4567	Bradley's Blood, Bone & Potash	5-8-7	West Haven
4565	Bradley's Complete Tobacco Manure	5-3-5	West Haven
4586	Bradley's Northland Potato Grower	4-8-4	Colchester
4225	Bradley's Potato Manure	3-8-4	Thompsonville ..
4466	Bradley's XL Superphosphate of Lime	3-10-4	Windsor Locks ..
4729	Bradley's XL Superphosphate of Lime	3-10-4	Windsor Locks ..
4458	National Aroostook Special Fertilizer	5-8-7	Farmington
4516	National Complete Tobacco Fertilizer	5-3-5	Rockville
4860	National Complete Tobacco Fertilizer	5-3-5	Suffield
4459	National Market Garden Fertilizer	3-8-4	Farmington
4566	National Pine Tree State Potato Fertilizer	4-8-4	West Haven
4467	Sanderson's Complete Tobacco Grower	5-3-5	Suffield
4756	Sanderson's Complete Tobacco Grower	5-3-5	Glastonbury
4757	Sanderson's Complete Tobacco Grower	5-3-5	Suffield
4485	Sanderson's Corn Superphosphate	2-9-3	So. Coventry ...
4419	Sanderson's Formula A	4-8-4	Guilford
4502	Sanderson's Formula B	4-8-7	Gaylordsville ...

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.73	4.84	0.08	0.64	6.29	7.65	0.44	7.28	6.84	5.87	5.87	4473
0.00	0.56	0.49	0.25	1.30	1.58	0.55	9.35	8.80	4.00	4.00	4507
0.44	3.00	0.16	0.43	4.03	4.90	0.31	8.50	8.19	7.27	7.27	4139
0.11	1.58	0.54	0.40	2.63	3.20	0.19	8.12	7.93	4.35	4.35	4462
0.46	0.96	0.28	2.32	4.02	4.89	0.20	3.45	3.25	0.22	5.37	4511
0.08	1.52	0.02	0.30	1.92	2.33	1.13	10.91	9.78	3.26	3.26	4254
0.56	3.82	0.18	0.59	5.15	6.26	0.09	6.50	6.41	3.02	3.02	3908
0.59	1.28	0.60	3.35	5.82	7.08	0.26	3.56	3.30	0.52	7.92	4164
0.59	2.66	0.26	0.35	3.86	4.69	0.51	8.55	8.04	4.71	4.71	3944
0.40	2.46	0.12	0.44	3.42	4.16	0.51	9.40	8.89	7.08	7.08	3945
0.00	1.44	0.01	0.30	1.75	2.13	1.48	10.08	8.60	10.39	10.39	4476
0.00	1.96	0.30	0.36	2.62	3.19	0.30	8.16	7.86	1.29	15.46	4472
0.34	4.44	0.24	0.07	5.09	6.19	1.39	10.48	9.09	0.24	6.00	4474
0.66	3.84	0.22	0.26	4.98	6.05	0.45	8.89	8.44	7.01	7.01	4460
0.13	2.00	0.34	0.15	2.62	3.19	1.10	10.98	9.88	5.83	5.83	4406
0.30	2.04	0.36	0.17	2.87	3.49	0.89	10.75	9.86	6.08	6.08	4420
0.45	3.04	0.20	0.43	4.12	5.01	0.63	11.00	10.37	5.45	5.45	4407
0.00	1.64	0.42	0.40	2.46	2.99	0.25	8.15	7.90	4.16	4.16	4226
0.35	2.48	0.06	0.37	3.26	3.96	0.95	9.22	8.27	4.13	4.13	4410
0.55	2.96	0.20	0.42	4.13	5.02	0.50	8.70	8.20	7.22	7.22	4411
0.29	2.42	0.18	0.37	3.26	3.96	0.41	9.04	8.63	6.89	6.89	4457
0.58	1.20	0.12	2.15	4.05	4.92	0.21	3.40	3.19	0.19	5.45	4564
0.55	3.00	0.12	0.37	4.04	4.91	0.40	8.94	8.54	7.04	7.04	4567
0.48	0.96	0.26	2.24	3.94	4.79	0.20	3.30	3.10	0.23	5.43	4565
0.41	2.28	0.12	0.34	3.15	3.83	0.94	9.23	8.29	4.12	4.12	4586
0.04	1.64	0.56	0.42	2.66	3.23	0.23	8.36	8.13	4.05	4.05	4225
0.19	1.48	0.52	0.37	2.56	3.11	0.65	11.24	10.59	3.61	3.61	4466
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.32	4729
0.54	3.12	0.02	0.40	4.08	4.96	0.32	9.01	8.69	7.48	7.48	4458
0.63	1.40	0.16	1.65	3.84	4.67	0.25	4.45	4.20	0.29	3.75	4516
.....	.....	.....	.....	3.95	4.80	0.15	4.80	4.65	.....	5.69	4860
0.00	1.76	0.38	0.43	2.57	3.12	0.45	8.80	8.35	4.13	4.13	4459
0.39	2.44	0.14	0.41	3.38	4.11	0.90	9.16	8.26	4.14	4.14	4566
0.30	0.84	0.28	2.30	3.72	4.52	0.21	3.33	3.12	0.31	5.35	4467
0.60	0.88	0.28	2.35	4.11	5.00	0.24	3.78	3.54	0.43	5.34	4756
.....	.....	.....	.....	3.93	4.78	0.20	3.54	3.34	.....	5.25	4757
0.00	1.54	0.13	0.43	2.10	2.55	1.00	10.21	9.21	3.60	3.60	4485
0.39	2.28	0.22	0.37	3.26	3.96	0.79	9.06	8.27	4.21	4.21	4419
0.37	2.20	0.36	0.51	3.44	4.18	0.18	9.00	8.14	0.98	7.00	4502

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station: Apothecaries Hall Co., Waterbury, Conn.</i>			
4479	Liberty Corn & All Crops 2-8-2	2-8-2	Rockville
4141	Liberty Corn Fruit & All Crops 2-12-4	2-12-4	North Haven
4561	Liberty Fertilizer 8-16-8	8-16-8	North Haven
4562	Liberty Fertilizer 10-16-14	10-16-14	North Haven
4643	Liberty Fish, Bone & Potash 3-8-3	3-8-3	East Windsor
4032	Liberty High Grade Market Gardener's 5-8-7	5-8-7	Yantic
4650	Liberty High Grade Tobacco Manure 7-3-7	7-3-7	East Windsor
4649	Liberty Onion Special (Potash as Sulphate) 4-8-7	4-8-7	East Windsor
3985	Liberty Potato & General Crops 4-8-10	4-8-10	Yantic
3986	Liberty Potato & Market Gardener's Special 4-8-4	4-8-4	Yantic
4593	Liberty Potato & Vegetable 2-8-10	2-8-10	East Windsor
3984	Liberty Special Fertilizer for Fruit, 7-8-6	7-8-6	Yantic
4403	Liberty 3-10-6	3-10-6	Westville
4493	Liberty Tobacco Special (Cottonseed Meal Base) 5-3-5	5-3-5	New Milford
4031	Liberty Top Dresser for Grass and Grain, 10-3½-8	10-3-5-8	Yantic
Armour Fertilizer Works, New York City			
4229	Armour's Big Crop Fertilizer 3-8-4	3-8-4	Thompsonville ..
4402	Armour's Big Crop Fertilizer 4-6-10	4-6-10	Seymour
4071	Armour's Big Crop Fertilizer 4-8-4	4-8-4	Milford
4724	Armour's Big Crop Fertilizer 4-8-4	4-8-4	Plainville
4673	Armour's Big Crop Fertilizer 4-16-4	4-16-4	Wallingford
4573	Armour's Big Crop Fertilizer 5-8-7	5-8-7	Silver Lane
4572	Armour's Big Crop Fertilizer 7-11-10	7-11-10	Silver Lane
4228	Armour's Big Crop Fertilizer 8-6-6	8-6-6	Thompsonville ..
4526	Armour's Big Crop Tobacco Special 5-3-5	5-3-5	Enfield
4525	Armour's Big Crop Tobacco Special 5-3-5	5-3-5	Enfield
4571	Armour's Big Crop Tobacco Special 5-3-5	5-3-5	Silver Lane
Associated Seed Growers, Inc., New Haven, Conn.			
3975	Special Mixture General Use	4-8-4	Milford
4073	Special Mixture 6% Potash	4-8-6	Milford
3976	Tip Top Brand	5-8-7	Milford

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.00	1.12	0.39	0.51	2.02	2.46	0.70	8.75	8.05	2.58	2.58	4479
0.11	1.76	0.36	0.18	2.41	2.93	0.95	12.75	11.80	4.16	4.16	4141
0.83	5.16	0.34	0.73	7.06	8.58	0.50	16.68	16.18	7.64	7.64	4561
0.49	5.68	1.60	0.59	8.36	10.16	0.38	16.50	16.12	13.26	13.26	4562
0.00	2.00	0.33	0.42	2.75	3.34	1.00	8.73	7.73	3.19	3.19	4643
0.90	2.84	0.48	0.11	4.33	5.26	0.48	9.10	8.62	7.60	7.60	4032
1.10	0.80	0.22	3.81	5.93	7.21	0.25	4.28	4.03	0.69	8.81	4650
0.00	2.44	0.60	0.52	3.56	4.33	1.77	11.40	9.63	0.80	7.87	4649
0.84	2.00	0.36	0.16	3.36	4.09	0.83	9.21	8.38	10.21	10.21	3985
0.00	2.12	0.36	0.84	3.32	4.04	0.78	9.17	8.39	4.46	4.46	3986
0.00	1.12	0.46	0.58	2.16	2.63	0.52	8.55	8.03	11.84	11.84	4593
0.97	4.02	0.66	0.37	6.02	7.32	1.60	11.08	9.48	6.36	6.36	3984
0.00	1.60	0.39	0.79	2.78	3.38	0.87	11.16	10.29	6.71	6.71	4403
0.00	1.60	0.31	2.29	4.20	5.11	0.25	5.81	5.56	0.94	6.80	4493
0.00	7.06	0.15	1.37	8.58	10.43	0.05	4.12	4.07	8.95	8.95	4031
0.00	2.97	0.00	0.05	3.02	3.67	0.38	8.85	8.47	4.43	4.43	4229
0.00	3.34	0.00	0.08	3.42	4.16	0.38	6.10	5.72	10.07	10.07	4402
1.22	2.10	0.00	0.30	3.62	4.40	0.30	8.90	8.60	4.31	4.31	4071
0.00	3.00	0.09	0.13	3.22	3.91	0.30	8.28	7.98	3.93	3.93	4724
0.00	3.16	0.18	0.05	3.39	4.12	0.48	16.00	15.52	4.28	4.28	4673
0.41	3.96	0.00	0.08	4.45	5.41	0.28	8.86	8.58	7.26	7.26	4573
0.38	4.88	0.12	0.12	5.50	6.69	0.45	12.15	11.70	9.85	9.85	4572
0.06	6.68	0.00	0.07	6.81	8.28	0.12	6.45	6.33	6.03	6.03	4228
.....	.....	.....	.....	4.56	5.54	0.20	4.78	4.58	0.51	5.56	4526
.....	.....	.....	.....	4.18	5.08	0.10	3.21	3.11	0.33	5.38	4525
1.88	0.04	0.24	2.12	4.28	5.20	0.18	4.08	3.90	0.52	5.21	4571
0.20	1.92	0.38	0.86	3.36	4.09	0.59	8.95	8.36	4.37	4.37	3975
0.17	2.26	0.28	0.66	3.37	4.10	0.32	8.75	8.43	5.92	5.92	4073
0.50	2.40	0.42	0.86	4.18	5.08	0.53	8.90	8.37	7.64	7.64	3976

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i> F. A. Bartlett Tree Expert Co., Stamford, Conn.			
4409	Bartlett Green Tree Food	6-7-4	Stamford
Berkshire Chemical Co., Bridgeport, Conn.			
4074	Berkshire Complete Fertilizer	2-12-2	Southport
4655	Berkshire Complete Tobacco Fertilizer	5-3-5	Suffield
4250	Berkshire Grass Special Fertilizer	7-6-5	Seymour
4717	Berkshire High Grade Tobacco Fertilizer	6-3-6	Suffield
4030	Berkshire Long Island Special Fertilizer	5-8-7	Milford
4076	Berkshire Market Garden Fertilizer	4-8-4	Southport
4664	Berkshire Tobacco Special	7-3-7	East Windsor Hill
4680	Berkshire Tobacco Special	7-3-7	Hazardville
4681	Berkshire Tobacco Special	7-3-7	Hazardville
4519	Berkshire Tobacco Starter Fertilizer	5-8-10	Ellington
4581	Berkshire Truck Fertilizer	5-8-5	Bridgeport
Amos D. Bridge's Sons, Inc., Hazardville, Conn.			
4224	Corn, Onion, Potato and General Purpose	4-8-4	Hazardville
4652	Special Tobacco Fertilizer	5-3-5	Hazardville
Central Chemical Co., Inc., Hagerstown, Md.			
4641	Gro-All Cobbler Brand	7-6-5	Glastonbury
4633	Gro-All Corn and Grain	2-9-3	Bloomfield
4648	Gro-All Garden Brand	3-8-4	Tolland
4647	Gro-All High Grade Potato	5-8-7	Tolland
4634	Gro-All Potato Special	4-8-4	Bloomfield
4642	Gro-All Tobacco Special	5-4-5	Glastonbury
4635	Gro-All Tobacco Starter	4-6-10	Bloomfield
4640	Gro-All Wrapper Brand	6.5-3-7	Glastonbury
Davey Tree Expert Co., Kent, Ohio			
4408	Davey Tree Food	12-3-3	Sound Beach
Eastern States Farmers' Exchange, Springfield, Mass.¹			
4143	E. S. 4-8-8	4-8-8	North Haven
4726	E. S. 4-8-8	4-8-8	Broad Brook
4589	E. S. 4-10-6	4-10-6	Woodstock

¹ First figure in "grade" column represents "nitrogen," not ammonia.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.00	4.48	0.07	1.03	5.58	6.78	2.78	10.13	7.35	3.88	3.88	4409
0.00	0.80	0.33	0.66	1.79	2.18	0.79	13.51	12.72	2.37	2.37	4074
1.40	0.00	0.32	2.39	4.11	5.00	0.16	3.23	3.07	1.00	5.64	4655
3.26	2.08	0.20	0.51	6.05	7.36	0.23	6.70	6.47	5.93	5.93	4250
1.25	0.10	0.33	3.13	4.81	5.85	0.21	3.55	3.34	0.33	5.52	4717
0.87	2.30	0.36	0.81	4.34	5.28	0.47	9.06	8.59	7.29	7.29	4030
0.00	2.36	0.37	0.70	3.43	4.17	0.41	8.84	8.43	4.34	4.34	4076
2.26	0.04	0.44	3.26	6.00	7.29	0.22	3.68	3.46	0.54	8.05	4664
2.49	0.00	0.50	2.75	5.74	6.98	0.15	3.57	3.42	0.48	7.09	4680
.....	.....	.....	.....	5.62	6.83	0.18	3.20	3.02	0.77	6.89	4681
2.72	0.42	0.30	0.93	4.37	5.31	0.30	8.75	8.45	1.73	14.77	4519
0.63	2.04	0.82	0.66	4.15	5.05	0.60	9.44	8.84	5.50	5.50	4581
0.83	1.72	0.16	0.69	3.42	4.16	0.71	9.46	8.75	4.43	4.43	4224
0.75	0.00	0.36	3.19	4.30	5.23	0.23	4.20	3.97	0.52	5.11	4652
0.24	4.16	0.19	0.38	4.97	6.04	0.25	6.58	6.33	5.13	5.42	4641
0.21	1.28	0.24	0.43	2.16	2.63	0.85	10.58	9.73	3.22	3.66	4633
0.37	2.52	0.14	0.29	3.32	4.04	0.36	8.51	8.15	4.33	4.33	4648
0.38	3.28	0.24	0.27	4.17	5.07	1.05	8.70	7.65	2.11	7.26	4647
0.00	2.56	0.14	0.29	2.99	3.64	1.35	9.39	8.04	3.24	4.21	4634
0.73	1.52	0.32	1.40	3.97	4.83	0.19	5.19	5.00	0.58	5.39	4642
0.46	2.32	0.20	0.19	3.17	3.85	0.75	7.45	6.70	2.10	9.75	4635
0.67	1.76	0.28	2.44	5.15	6.26	0.18	4.08	3.90	2.87	7.69	4640
0.79	5.80	0.16	3.29	10.04	12.21	0.08	3.81	3.73	1.22	3.13	4408
0.73	3.06	0.06	0.32	4.17	5.07	0.39	9.00	8.61	8.54	8.54	4143
0.76	2.64	0.51	0.11	4.02	4.89	0.35	8.43	8.08	8.41	8.41	4726
0.30	2.68	0.92	0.26	4.16	5.06	0.70	11.28	10.58	5.95	5.95	4589

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i>			
Eastern States Farmers' Exchange, Springfield, Mass.¹			
4518	E. S. 4-12-4	4-12-4	Ellington
4421	E. S. 6-8-6	6-8-6	Clinton
4455	E. S. 6-15-9	6-15-9	Meriden
4515	E. S. 6-18-6	6-18-6	Ellington
4444	E. S. 8-16-16	8-16-16	Meriden
4495	E. S. 8-4-8	8-4-8	New Milford ..
4517	E. S. 10-5-10	10-5-10	Ellington
Essex Fertilizer Co., Boston, Mass.			
4145	Essex Complete Manure 5-8-7	5-8-7	Wallingford
4138	Essex Fish Brand Fertilizer for All Crops, 3-8-4	3-8-4	Plantsville
4137	Essex Market Garden 4-8-4	4-8-4	Plantsville
4400	Essex Peerless Potato Manure 4-6-10	4-6-10	Wallingford
4401	Essex Top Dressing 7-6-5	7-6-5	So. Manchester..
L. T. Frisbie Co., New Haven, Conn.			
4415	Frisbie's Corn and Grain Fertilizer 2-10-2	2-10-2	Branford
4727	Frisbie's 5-8-7	5-8-7	So. Britain
4583	Frisbie's 5-10-5	5-10-5	East Haven
3963	Frisbie's Market Garden 5-8-7	5-8-7	New Haven
4091	Frisbie's Market Garden 5-8-7	5-8-7	West Cheshire ..
4491	Frisbie's Special 3-8-4	3-8-4	Waterbury
4090	Frisbie's Special Vegetable and Potato Grower 4-8-4	4-8-4	West Cheshire ..
4677	Frisbie's Tobacco Grower 7-3-7	7-3-7	Collinsville
4506	Frisbie's Top Dresser 8-6-6	8-6-6	Torrington
Goulard & Olena, Inc., New York, City			
3991	G. & O. Lawn and Garden No-Filler Fertilizer	5-8-5 ²	New Britain
Grasselli Chemical Co., Cleveland, Ohio			
3965	Du Gro (Grasselli Plant Food)	5-13-4	New Haven
International Agricultural Corp., Boston, Mass.			
4684	Caribee 5-8-7	5-8-7	Suffield
4716	Crop Grower 5-8-7	5-8-7	Suffield

¹ First figure in "grade" column represents "nitrogen," not ammonia.² Total P₂O₅.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
1.11	2.58	0.42	0.13	4.24	5.15	0.65	12.90	12.25	3.93	3.93	4518
2.19	3.28	0.14	0.43	6.04	7.34	0.22	8.70	8.48	6.08	6.08	4421
1.18	4.32	0.24	0.32	6.06	7.37	0.68	16.00	15.32	9.25	9.25	4455
1.19	3.92	0.52	0.29	5.92	7.20	0.65	18.85	18.20	6.61	6.61	4515
1.42	6.38	0.13	0.32	8.25	10.03	0.67	17.24	16.57	16.77	16.77	4444
1.76	0.32	3.68	2.26	8.02	9.75	0.10	4.25	4.15	0.60	7.84	4495
2.59	0.44	4.36	1.99	9.38	11.40	0.10	5.82	5.72	0.54	9.84	4517
0.43	3.04	0.52	0.41	4.40	5.35	0.39	9.55	9.16	6.81	6.81	4145
0.00	1.66	0.36	0.51	2.53	3.08	0.55	8.50	7.95	3.93	3.93	4138
0.35	2.06	0.42	0.47	3.30	4.01	0.36	8.43	8.07	3.78	3.78	4137
0.27	2.28	0.42	0.41	3.38	4.11	0.37	6.75	6.38	10.95	10.95	4400
0.00	5.18	0.22	0.14	5.54	6.74	0.25	6.31	6.06	5.02	5.02	4401
0.00	0.84	0.47	0.51	1.82	2.21	0.73	10.85	10.12	2.09	2.09	4415
0.18	3.08	0.66	0.40	4.32	5.25	0.44	9.06	8.62	0.48	7.26	4727
0.30	3.12	0.40	0.38	4.20	5.11	0.70	10.83	10.13	5.10	5.10	4583
0.28	3.10	0.36	0.53	4.27	5.19	0.41	8.34	7.93	7.38	7.38	3963
0.19	3.22	0.32	0.46	4.19	5.09	0.48	8.38	7.90	7.17	7.17	4091
0.00	1.68	0.30	0.53	2.51	3.05	0.58	8.83	8.25	4.25	4.25	4491
0.38	2.24	0.42	0.35	3.39	4.12	0.46	8.76	8.30	4.17	4.17	4090
1.87	0.04	0.84	3.22	5.97	7.26	0.27	4.40	4.13	0.61	7.59	4677
1.20	4.72	0.32	0.36	6.60	8.02	0.30	6.68	6.38	6.14	6.14	4506
0.18	3.34	0.10	0.56	4.18	5.08	0.32	7.94	7.62	5.32	5.32	3991
0.00	3.74	0.00	0.21	3.95	4.80	1.43	16.40	14.97	4.25	4.25	3965
1.86	1.04	0.36	0.86	4.12	5.01	0.67	8.58	7.91	1.13	6.78	4684
0.40	2.82	0.44	0.36	4.02	4.89	0.46	8.55	8.09	7.24	7.24	4716

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i> Henry James & Son, Springfield, Mass.			
4591	4-6-10 Fertilizer	4-6-10	Mansfield Depot
4590	4-8-4 Fertilizer	4-8-4	Mansfield Depot
Lowell Fertilizer Co., Boston, Mass.			
4098	Lowell Animal Brand, A High Grade Manure for all Crops 3-8-4	3-8-4	Southington
4092	Lowell Corn & Vegetable 4-8-4	4-8-4	West Cheshire ..
4093	Lowell Market Garden Manure 5-8-7	5-8-7	West Cheshire ..
4492	Lowell Potato Grower 4-6-10	4-6-10	Southbury
4465	Lowell Tobacco Manure 5-3-5	5-3-5	Warehouse Point
4094	Lowell Top Dressing 7-6-5	7-6-5	West Cheshire ..
Maine Farmers' Exchange, Boston, Mass.			
4555	M. F. E. Produce-More 3-12-3	3-12-3	New Milford ...
4556	M. F. E. Produce-More 4-6-10	4-6-10	New Milford ...
4504	M. F. E. Produce-More 5-8-7	5-8-7	New Milford ...
Mapes Formula & Peruvian Guano Co., New York City			
4477	The Mapes Connecticut Valley Special	6-4-7	Warehouse Point
4512	The Mapes Connecticut Valley Special	6-4-7	Windsor Locks..
3940	The Mapes Corn Manure	3-8-3	Windsor Locks..
4468	The Mapes General Tobacco Manure	5-4-5	West Suffield ...
4578	The Mapes General Truck Manure	5-6-5	Hartford
3938	The Mapes General Use Manure	3-6-4	Windsor Locks..
4663	The Mapes Onion Manure	4-6-4	Broad Brook ...
3939	The Mapes Potato Manure	4-7-5	Windsor Locks..
4478	The Mapes Special Trucker	5-8-7	Hartford
4657	The Mapes Tobacco Ash Constituents	1-4-15	Broad Brook ...
4579	The Mapes Tobacco Manure Wrapper Brand..	7.5-2-10.5	So. Windsor
Millane Nurseries & Tree Export Co., Cromwell, Conn.			
4670	Millane Shade Tree Food	10-12-4	Cromwell

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.44	1.88	0.56	0.30	3.18	3.87	0.53	6.43	5.90	10.09	10.09	4591
0.50	1.88	0.60	0.30	3.28	3.99	0.85	9.00	8.15	4.00	4.00	4590
0.00	1.68	0.45	0.30	2.43	2.95	0.30	7.85	7.55	4.15	4.15	4098
0.32	2.10	0.47	0.37	3.26	3.96	0.46	8.70	8.24	4.14	4.14	4092
0.23	2.84	0.57	0.39	4.03	4.90	0.45	8.60	8.15	6.92	6.92	4093
0.00	2.20	0.72	0.38	3.30	4.01	0.33	6.60	6.27	10.83	10.83	4492
1.93	0.08	0.28	2.85	5.14	6.25	0.37	4.48	4.11	0.47	5.33	4465
0.00	5.28	0.19	0.09	5.56	6.76	0.27	6.66	6.39	4.93	4.93	4094
0.12	1.80	0.24	0.19	2.35	2.86	0.68	11.40	10.72	4.15	4.15	4555
0.00	2.72	0.31	0.10	3.13	3.81	0.55	6.60	6.05	10.28	10.28	4556
0.00	3.68	0.06	0.48	4.22	5.13	0.60	9.28	8.68	7.29	7.29	4504
0.12	1.18	0.52	3.22	5.04	6.13	0.33	5.11	4.78	1.10	7.90	4477
0.52	1.16	0.72	2.82	5.22	6.35	0.26	4.73	4.47	0.88	7.86	4512
0.03	1.42	0.20	0.92	2.57	3.12	1.53	10.57	9.04	3.54	3.54	3940
1.56	0.04	1.12	1.45	4.17	5.07	1.00	5.59	4.59	0.74	6.04	4468
0.12	3.12	0.34	0.96	4.54	5.52	1.59	9.03	7.44	5.96	5.96	4578
0.21	1.54	0.26	0.71	2.72	3.31	1.21	8.33	7.12	3.77	4.24	3938
0.00	1.76	0.60	1.12	3.48	4.23	1.04	8.65	7.61	0.45	4.42	4663
0.22	2.88	0.30	0.54	3.94	4.79	0.83	7.61	6.78	4.12	5.01	3939
0.42	2.56	0.00	1.52	4.50	5.47	1.43	11.59	10.16	7.19	7.19	4478
0.00	0.04	0.21	0.85	1.10	1.34	0.74	6.00	5.26	0.96	16.55	4657
0.53	0.36	2.64	2.88	6.41	7.79	2.58	6.67	4.09	1.06	11.47	4579
5.00	2.24	0.95	0.19	8.38	10.19	0.42	13.24	12.82	4.66	4.66	4670

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i> Miller Fertilizer Co., Baltimore, Md.			
4336	Miller Crop Grower 5-8-7	5-8-7	Mystic
4333	Miller's Onion and Vegetable 4-8-4	4-8-4	Norwich
4335	Miller's Top Dresser 8-6-6	8-6-6	Mystic
New England Fertilizer Co., Boston, Mass.			
4552	New England Complete Manure 4-6-10	4-6-10	Unionville
4554	New England Corn Phosphate 2-10-2	2-10-2	Merrow
4146	New England Market Garden Manure 5-8-7 ..	5-8-7	Meriden
4147	New England Potato & Vegetable Manure 4-8-4 ..	4-8-4	Meriden
4469	New England Super, A High Grade Fertilizer for All Crops 3-8-4	3-8-4	Unionville
4551	New England Tobacco Manure 5-3-5	5-3-5	Unionville
Old Deerfield Fertilizer Co., South Deerfield, Mass.			
4508	J. W. Alsop Special 7-4-6	7-4-6	Avon
4522	Old Deerfield 4-8-4	4-8-4	Somers
4638	Old Deerfield 5-3-5	5-3-5	Somers
4521	Old Deerfield 5-8-7	5-8-7	Somers
4523	Old Deerfield Complete Tobacco 7-3-7	7-3-7	Somers
4520	Old Deerfield Tobacco Starter 6-8-12	6-8-12	Somers
Olds & Whipple, Inc., Hartford, Conn.			
4165	O & W Blue Label Tobacco Fertilizer	6-3-6	Hartford
4187	O & W Complete Market Garden Fertilizer ...	4-8-4	So. Manchester ..
4665	O & W Complete Tobacco Fertilizer	5-3-5	East Windsor Hill
4171	O & W Grass Fertilizer	6-6-4	So. Manchester ..
4170	O & W High Grade Potato & Vegetable Fertz	5-8-7	So. Manchester ..
4656	O & W High Grade Starter & Potash Compound	5-4-15	Suffield
4584	Wilcox Corn Special	3-10-4	Mystic
4487	Wilcox High Grade Fish & Potash	4-8-4	Mystic
4036	Wilcox Potato and Vegetable Phosphate	5-8-7	Willimantic
4739	Wilcox Top Dresser	7-6-5	East Hartford...
Parmenter & Polsey, Boston, Mass.			
4563	P & P Maine Potato Fertilizer 4-6-10	4-6-10	Wallingford

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.00	3.62	0.17	0.38	4.17	5.07	0.50	8.58	8.08	7.00	7.00	4336
0.00	3.04	0.19	0.29	3.52	4.28	0.80	9.37	8.57	5.14	5.14	4333
0.00	5.48	0.00	0.36	5.84	7.10	0.19	7.29	7.10	6.35	6.35	4335
0.31	2.36	0.40	0.37	3.44	4.18	0.35	7.31	6.96	10.14	10.14	4552
0.00	0.92	0.58	0.40	1.90	2.31	0.50	10.65	10.15	2.59	2.59	4554
0.26	3.04	0.41	0.37	4.08	4.96	0.51	8.18	7.67	6.74	6.74	4146
0.28	2.20	0.56	0.33	3.37	4.10	0.25	8.85	8.60	3.90	3.90	4147
0.00	1.80	0.39	0.48	2.67	3.25	0.55	8.57	8.02	4.07	4.07	4469
0.77	0.08	0.60	2.81	4.26	5.18	0.30	4.20	3.90	0.41	5.47	4551
1.17	0.08	1.76	3.35	6.36	7.73	0.10	4.82	4.72	0.77	6.15	4508
0.76	1.64	0.72	0.45	3.57	4.34	0.55	9.20	8.65	4.00	4.00	4522
1.18	0.04	0.56	2.82	4.60	5.59	0.88	5.68	4.80	0.73	8.92	4638
0.64	1.88	0.88	1.10	4.50	5.47	0.87	9.05	8.18	0.60	7.49	4521
0.82	0.12	1.44	3.26	5.64	6.86	0.13	5.13	5.00	0.44	8.93	4523
0.91	0.20	1.80	2.40	5.31	6.46	1.97	10.36	8.39	1.00	13.20	4520
1.05	0.08	0.16	3.79	5.08	6.18	0.31	4.15	3.84	0.40	6.23	4165
0.84	1.74	0.18	0.70	3.46	4.21	0.62	9.62	9.00	4.31	4.31	4187
0.66	0.00	0.40	3.24	4.30	5.23	0.33	4.24	3.91	0.49	6.12	4665
1.94	1.76	0.32	0.89	4.91	5.97	0.58	7.13	6.55	4.79	4.79	4171
1.04	2.00	0.42	0.90	4.36	5.30	0.55	9.10	8.55	0.31	7.29	4170
1.15	0.76	0.32	2.11	4.34	5.28	1.02	5.85	4.83	1.24	15.27	4656
0.77	1.12	0.16	0.71	2.76	3.36	0.87	12.17	11.30	4.18	4.18	4584
0.64	1.72	0.20	0.94	3.50	4.26	0.91	9.45	8.54	4.50	4.50	4487
2.03	2.12	0.13	0.30	4.58	5.57	0.54	9.45	8.91	6.47	7.34	4036
3.06	2.12	0.32	0.46	5.96	7.25	1.43	9.26	7.83	0.40	5.88	4739
0.21	2.12	0.80	0.29	3.42	4.16	0.35	6.50	6.15	10.19	10.19	4563

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
	<i>Sampled by Station:</i> Plantspur Products Co., Ridgefield, N. J.		
4416	Plantspur Fertilizer	3.5-1-1.5	Branford
	Frank S. Platt Co., New Haven, Conn.		
3958	Platt's Special Concentrated Lawn Dressing ..	16-5-5	New Haven
3957	Platco Special 5-8-7	5-8-7	New Haven
	The Rogers & Hubbard Co., Portland, Conn.		
4918	3-8-4	3-8-4	Portland
3942	4-8-4	4-8-4	Hartford
4639	4-8-10	4-8-10	Wallingford
3941	5-8-7	5-8-7	Hartford
4569	6-6-4	6-6-4	Portland
4901	6-6-4	6-6-4	Portland
4570	8-6-6	8-6-6	Portland
3951	Gro-Fast Lawn Fertilizer	7.5-2-4.5	Portland
3948	Hubbard's "Bone Base" Fertilizer for Seeding Down	3-5-6	Portland
4033	Hubbard's "Bone Base" Oats & Top Dressing ..	10-3-8	Norwich
4417	Hubbard's "Bone Base" Soluble Corn and Gen- eral Crops Manure	3-8-6	Branford
4418	Hubbard's "Bone Base" Soluble Potato Manure ..	6-8-5	Branford
4505	Hubbard's "Bone Base" Soluble Tobacco Manure ..	6-8-10	New Milford
4486	Rogers & Hubbard's All Soils, All Crops Fer- tilizer	4-10-4	Merrow
4510	Rogers & Hubbard's Climax Tobacco Brand ..	5-3-5	Granby
4422	Rogers & Hubbard's Corn & Grain Fertilizer ..	1-10-3	Fair Haven
4445	Rogers & Hubbard's High Potash Fertilizer ..	3-8-10	New Britain
4423	Rogers & Hubbard's Potato Fertilizer	2-10-4	Fair Haven
4653	Rogers & Hubbard's Tobacco Grower Vegeta- ble Formula	6-3-5	Poquonock
	M. L. Shoemaker & Co., Philadelphia, Pa.		
4475	Swift-Sure Tobacco and General Use 3-10-3 ..	3-10-3	Granby
	Springfield Rendering Co., Springfield, Mass.		
4230	Springfield 3-8-4 Fertilizer	3-8-4	Thompsonville ..
4227	Springfield 4-8-4 Fertilizer	4-8-4	Thompsonville ..
4679	Springfield 5-8-7 Fertilizer	5-8-7	West Suffield

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.00	2.84	0.11	0.64	3.59	4.36	0.33	3.76	3.43	1.86	1.86	4416
0.27	13.42	0.22	0.54	14.45	17.57	0.07	6.40	6.33	0.07	6.61	3958
0.36	2.98	0.44	0.58	4.36	5.30	0.38	9.04	8.66	7.60	7.60	3957
0.00	1.84	0.71	0.08	2.63	3.20	0.58	9.33	8.75	4.28	4.28	4918
0.00	2.92	0.52	0.12	3.56	4.33	0.29	8.97	8.68	4.33	4.33	3942
1.38	1.40	0.60	0.08	3.46	4.21	0.40	9.05	8.65	10.65	10.65	4639
0.00	3.64	0.55	0.12	4.31	5.24	0.86	9.22	8.36	7.55	7.55	3941
1.57	2.40	0.59	0.10	4.66	5.67	0.43	6.72	6.29	5.16	5.16	4569
0.77	4.24	0.08	0.09	5.18	6.30	0.70	7.40	6.70	.....	4.28	4901
2.67	3.04	0.62	0.42	6.75	8.21	1.63	8.00	6.37	4.55	6.21	4570
4.28	0.10	0.14	2.21	6.73	8.18	0.63	4.83	4.20	1.95	5.49	3951
0.00	1.34	0.28	1.00	2.62	3.19	6.95	12.93	5.98	6.78	6.78	3948
8.22	0.16	0.00	0.24	8.62	10.48	3.15	8.88	5.73	3.14	8.59	4033
0.09	0.64	1.32	0.48	2.53	3.08	1.40	10.40	9.00	6.58	6.58	4417
2.50	0.30	1.52	0.62	4.94	6.01	1.93	10.85	8.92	0.35	5.27	4418
1.36	0.92	2.04	0.65	4.97	6.04	1.55	10.37	8.82	0.68	10.50	4505
0.16	2.28	0.72	0.34	3.50	4.26	1.14	11.55	10.41	4.22	4.22	4486
0.08	0.08	1.32	2.73	4.21	5.12	0.51	4.18	3.67	0.58	5.41	4510
0.16	0.20	0.60	0.12	1.08	1.31	0.79	11.03	10.24	3.21	3.21	4422
0.00	1.64	0.79	0.26	2.69	3.27	1.05	10.27	9.22	10.63	10.63	4445
0.18	0.94	0.62	0.20	1.94	2.36	0.61	11.05	10.44	4.28	4.28	4423
1.38	0.04	0.44	3.31	5.17	6.29	0.58	3.95	3.37	0.54	5.30	4653
0.13	1.78	0.10	0.49	2.50	3.04	1.42	11.03	9.61	3.12	3.12	4475
0.03	1.68	0.36	0.34	2.41	2.93	0.18	8.13	7.95	4.15	4.15	4230
0.71	2.00	0.28	0.32	3.31	4.02	0.71	8.73	8.02	4.10	4.10	4227
0.36	2.32	1.04	0.36	4.08	4.96	0.71	8.75	8.04	7.14	7.14	4679

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
<i>Sampled by Station:</i>			
Standard Wholesale Phosphate & Acid Works, Baltimore, Md.			
4070	5-10-5	5-10-5	Milford
4192	7-6-6	7-6-6	Talcottville
4331	Connecticut Valley Prize Tobacco Grower	5-4-5	Ellington
3983	Evergreen Fish Guano	4-8-4	Willimantic
3981	Fish, Bone & Potash	5-8-7	Willimantic
4190	Fish, Bone & Potash	5-8-7	Talcottville
4136	Grain Grower	2-8-2	Plantsville
4546	Mammoth Potato Grower	2-8-10	North Haven
4547	Potato & Vegetable Fertilizer	2-8-2	Norwalk
4480	Royal Potato Grower	4-8-7	Ellington
Swift & Co., Baltimore, Md.¹			
3943	Vigoro	4-12-4	Hartford
Synthetic Nitrogen Products Co., New York City			
3979	Nitrophoska No. 1	18.2-30-15	Milford
3977	Nitrophoska No. 2	20-16.5-21.5	Milford
Tenn. Copper & Chemical Corp., Cincinnati, Ohio¹			
4405	Loma	5-10-4	Greenwich
I. P. Thomas & Son, Philadelphia, Pa.			
4674	Economy Fertilizer 3-12-3	3-12-3	Wallingford
4490	Long Island Special 4-8-7	4-8-7	Hamden
4066	7% Guano	7-6-5	Highwood
4064	I. P. Thomas 5-8-7	5-8-7	Hamden
4654	Thomas Tobacco Grower (Sulfate of Potash) 5-4-5	5-4-5	East Granby
4063	Tip Top Super Phosphate 3-10-6	3-10-6	Hamden
4065	Truckers High Grade Guano 4-8-4	4-8-4	Highwood
4524	Victor Potash Fertilizer 2-8-5	2-8-5	Willimantic
Virginia-Carolina Chemical Co., New York City			
4672	Bloomaid	6-10-4	New Britain
4585	V-C XXXX Fish & Potash	4-8-4	Norwich
4671	V-C Fairway Fertilizer	8-6-5	New Britain

¹ First figure in "grade" column represents "nitrogen," not ammonia.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—Continued.

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.00	3.44	0.04	0.38	3.86	4.69	0.73	10.98	10.25	5.28	5.28	4070
0.04	3.16	0.26	0.70	4.16	5.06	0.35	6.63	6.28	9.36	9.36	4192
0.00	3.20	0.05	1.19	4.44	5.40	0.45	5.17	4.72	0.28	5.36	4331
0.11	2.60	0.17	0.47	3.35	4.07	0.73	9.17	8.44	4.45	4.45	3983
0.03	3.80	0.05	0.37	4.25	5.17	0.45	9.23	8.78	7.76	7.76	3981
0.00	3.70	0.33	0.23	4.26	5.18	0.35	8.66	8.31	7.60	7.60	4190
0.00	1.30	0.07	0.37	1.74	2.11	0.49	8.38	7.89	3.02	3.02	4136
0.00	1.60	0.05	0.43	2.08	2.53	0.66	8.97	8.31	10.20	10.20	4546
0.00	1.72	0.04	0.34	2.10	2.55	0.52	8.59	8.07	2.71	2.71	4547
0.21	2.28	0.32	0.49	3.30	4.01	1.10	9.10	8.00	6.74	6.74	4480
0.36	3.36	0.12	0.36	4.20	5.11	1.41	13.50	12.09	4.00	4.45	3943
.....	.....	.....	.....	15.66	19.04	0.26	31.46	31.20	.....	14.01	3979
.....	.....	.....	.....	16.56	20.13	0.08	17.80	17.72	.....	21.02	3977
0.34	4.06	0.34	0.46	5.20	6.32	1.04	11.28	10.24	3.41	3.97	4405
0.00	2.36	0.22	0.50	3.08	3.74	1.00	13.60	12.60	3.48	3.80	4674
0.00	3.00	0.19	0.40	3.59	4.36	1.55	9.66	8.11	7.17	7.17	4490
0.38	4.20	0.30	0.91	5.79	7.04	0.70	7.33	6.63	3.81	4.92	4066
0.00	3.96	0.06	0.34	4.36	5.30	1.50	10.07	8.57	6.98	7.40	4064
0.00	1.00	0.18	3.06	4.24	5.15	3.60	11.61	8.01	0.69	5.78	4654
0.00	2.16	0.08	0.42	2.66	3.23	1.60	12.09	10.49	5.69	6.37	4063
0.00	3.10	0.00	0.43	3.53	4.29	1.01	9.75	8.74	0.17	4.46	4065
0.00	1.24	0.27	0.38	1.89	2.30	0.68	9.62	8.94	5.25	5.25	4524
0.87	2.84	0.28	1.22	5.21	6.33	0.31	10.93	10.62	0.57	4.24	4672
0.00	2.32	0.61	0.50	3.43	4.17	1.00	9.49	8.49	4.03	4.03	4585
0.35	4.28	0.52	1.47	6.62	8.05	0.33	6.78	6.45	5.81	5.81	4671

TABLE XIV. ANALYSES OF MIXED FERTILIZERS

Station No.	Manufacturer and Brand	Grade	Place of Sampling
	<i>Sampled by Station:</i> Walker-Gordon Co., Plainsboro, N. J.		
4414	Driconure	1.8-1 ² -2	New Haven
	S. D. Woodruff & Sons, Orange, Conn.		
3974	Woodruff's Home Mixed Fertilizer	4-8-6	Orange
	Worcester Rendering Co., Auburn, Mass.		
4588	Prosperity Brand Corn & Grain	2-10-2	Putnam
4035	Prosperity Market Garden Fertilizer	5-8-7	Norwich
4489	Prosperity Brand Potato & Vegetable Fertilizer	4-8-4	Groton
4587	Prosperity Brand Special Potato	4-6-10	Putnam
4488	Prosperity Brand Superior Top Dressing	8-6-6	Groton
	<i>Sampled by Purchaser:</i> Apothecaries Hall Co., Waterbury, Conn.		
2967	Liberty Fertilizer 10-16-14 (fine)	10-16-14	Storrs
2968	Liberty Fertilizer 10-16-14 (coarse)	10-16-14	Storrs
4723	Liberty High Grade Market Gardeners 5-8-7	5-8-7	Windsorville
4658	Liberty High Grade Tobacco Manure 7-3-7	7-3-7	Windsor
4005	Liberty Top Dresser for Grass & Grain 10-3½-8	10-3-5-8	Norwich
	Olds & Whipple, Inc., Hartford, Conn.		
4660	O. & W. Complete Tobacco Fertilizer	5-3-5	Windsor
	The Rogers & Hubbard Co., Portland, Conn.		
3496	Oats and Top Dressing Fertilizer	10-3-8	Portland

¹ Total P₂O₅.

CONTAINING NITROGEN, PHOSPHORIC ACID AND POTASH—*Concluded.*

Nitrogen					Ammonia equivalent to total 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	
%	%	%	%	%	%	%	%	%	%	%	
0.06	0.16	0.16	1.52	1.90	2.31	0.15	1.00	0.85	0.56	1.63	4414
1.76	0.06	0.08	0.94	2.84	3.45	0.36	9.20	8.84	6.54	6.54	3974
0.00	0.80	0.69	0.41	1.90	2.31	1.48	11.35	9.87	2.67	2.67	4588
0.35	2.96	0.50	0.45	4.26	5.18	0.70	8.90	8.20	7.00	7.00	4035
0.20	2.12	0.56	0.38	3.26	3.96	0.75	8.78	8.03	4.47	4.47	4489
0.62	1.56	0.81	0.51	3.50	4.26	0.93	7.33	6.40	9.88	9.88	4587
0.39	5.26	0.56	0.38	6.49	7.89	0.55	6.99	6.44	5.67	5.67	4488
.....	.....	.....	.....	7.32	8.90	0.50	13.03	12.53	.....	12.00	2967
.....	.....	.....	.....	10.82	13.15	0.20	20.95	20.75	.....	14.03	2968
0.81	2.96	0.48	0.10	4.35	5.29	0.55	8.60	8.05	6.78	6.78	4723
.....	.....	.....	.....	6.10	7.42	0.19	4.48	4.29	0.47	8.35	4658
.....	.....	.....	.....	8.41	10.22	0.05	2.93	2.88	10.06	10.06	4005
.....	.....	.....	.....	4.46	5.42	0.36	4.22	3.86	0.39	5.56	4660
.....	.....	.....	.....	8.17	9.93	3.08	8.54	5.46	.....	9.16	3496

TABLE XV. ANALYSES OF SPECIAL AND HOME MIXTURES.

Station No.	Manufacturer and Brand	Place of Sampling	Total nitrogen %	Ammonia equivalent to total nitrogen	Phosphoric acid			Potash		Station No.
					Citrate-insoluble %	Total %	"Available" %	As muriate %	Total %	
	<i>Sampled by Station</i>									
4580	Special Mixture	Adolph Koskie, Thompsonville	5.84	7.10	0.95	5.66	4.71	1.61	6.71	4580
4685	Home Mixture for Corn	L. W. Lloyd, Suffield	6.24	7.59	0.20	10.16	9.96	1.61	1.80	4685
4167	Special Formula Fertilizer M. & M. "A"	Meyer & Mendelsohn, Hartford	5.00	6.08	2.00	4.61	2.61	0.70	13.57	4167
4577	Special Formula Fertilizer M. & M. "A"	Meyer & Mendelsohn, Hartford	5.01	6.09	2.38	4.20	1.82	.....	13.95	4577
4576	Special Home Mixture	Meyer & Mendelsohn, Hartford	4.95	6.02	2.78	4.15	1.37	.....	13.74	4576
4575	M. & M. Special Mixture	Meyer & Mendelsohn, Hartford	5.58	6.78	0.50	3.58	3.08	.....	6.05	4575
	<i>Sampled by Purchaser</i>									
3526	Formula A	American Sumatra Tobacco Co., Bloomfield	6.22	7.56	0.80	5.27	4.47	.....	5.59	3526
3591	Formula A	American Sumatra Tobacco Co., Bloomfield	6.25	7.60	1.10	4.90	3.80	.....	5.39	3591
3527	Formula B	American Sumatra Tobacco Co., Bloomfield	5.94	7.22	1.06	6.03	4.97	.....	7.26	3527
3592	Formula B	American Sumatra Tobacco Co., Bloomfield	6.05	7.36	1.17	5.78	4.61	.....	7.65	3592
3593	Formula E	American Sumatra Tobacco Co., Bloomfield	5.88	7.15	0.42	3.62	3.20	.....	6.10	3593

TABLE XV. ANALYSES OF SPECIAL AND HOME MIXTURES—Continued.

Station No.	Manufacturer and Brand	Place of Sampling	Total nitrogen %	Ammonia equivalent to total nitrogen	Phosphoric acid			Potash		Station No.
					Citrate-insoluble	Total	% Available?	As sulfate	Total	
3705	<i>Sampled by Purchaser</i> Formula E	American Sumatra Tobacco Co., Bloomfield	5.93	7.21	0.30	3.94	3.64	6.02	3705	
4544	Open Formula Fertilizer	J. T. Burgess & Son, Thompsonville Charter Oak Tobacco Co., Ware- house Point	6.48	7.88	1.24	6.10	4.86	9.28	4544	
4292	Home Mixture Fertilizer	Charter Oak Tobacco Co., Ware- house Point	4.75	5.78	0.05	2.65	2.60	3.55	4292	
4545	Special Mixture Fertilizer	Charter Oak Tobacco Co., Ware- house Point	4.34	5.28	0.06	2.44	2.38	4.93	4545	
3326	Fertilizer No. 1	Consolidated Cigar Corp., Hartford Consolidated Cigar Corp., Hartford	5.75	6.99	1.45	4.29	2.84	4.56	3326	
3327	Fertilizer No. 5	Consolidated Cigar Corp., Hartford	5.87	7.14	1.35	4.60	3.25	5.24	3327	
4626	Special Tobacco Mixture Fer- tilizer, Formula A, Rislely	Consolidated Cigar Corp., Hartford	5.22	6.35	0.16	3.96	3.80	6.03	4626	
4627	Special Tobacco Mixture Fer- tilizer, Formula A, Lata	Consolidated Cigar Corp., Hartford	5.26	6.40	0.21	4.29	4.08	5.56	4627	
4628	Special Tobacco Mixture Fer- tilizer, Formula A, Dickau	Consolidated Cigar Corp., Hartford	5.08	6.18	0.04	4.25	4.21	4.72	4628	
4629	Special Tobacco Mixture Fer- tilizer, Formula A, Mullin	Consolidated Cigar Corp., Hartford	4.70	5.71	0.20	3.82	3.60	6.70	4629	
4630	Special Tobacco Mixture Fer- tilizer, Formula A, Bidwell	Consolidated Cigar Corp., Hartford	5.26	6.40	0.24	4.12	3.88	5.89	4630	
4631	Special Tobacco Fertilizer, Formula A, Bidwell	Consolidated Cigar Corp., Hartford	5.44	6.61	0.23	4.08	3.85	6.35	4631	

TABLE XV. ANALYSES OF SPECIAL AND HOME MIXTURES—Continued.

Station No.	Manufacturer and Brand	Place of Sampling	Total nitrogen %	Ammonia equivalent to total nitrogen %	Phosphoric acid			Potash		Station No.
					Citrate-insoluble %	Total %	So-called "Available" %	As muriate %	Total %	
4373	<i>Sampled by Purchaser</i> Fertilizer, Formula K ₂	I. Kaffenburgh & Sons, Inc., Hartford	6.17	7.50	0.46	4.14	3.68	3.04	4373	
4374	Fertilizer, Formula K ₄	I. Kaffenburgh & Sons, Inc., Hartford	5.53	6.72	0.84	3.56	2.72	2.15	4374	
4375	Fertilizer, Formula K ₆	I. Kaffenburgh & Sons, Inc., Hartford	5.20	6.32	0.66	3.15	2.49	2.22	4375	
4376	Fertilizer, Formula K ₈	I. Kaffenburgh & Sons, Inc., Hartford	5.36	6.52	0.60	3.30	2.70	2.03	4376	
4377	Fertilizer, Formula K ₁₀	I. Kaffenburgh & Sons, Inc., Hartford	5.46	6.64	0.54	3.61	3.07	2.56	4377	
4861	Special Mixture 5-8-15	F. R. Kirkbride, Windsor	4.32	5.25	0.35	9.00	8.65	15.21	4861	
4613	Kulle No. 1 Formula Special Mixture	Karl C. Kulle, Suffield	6.25	7.60	0.19	4.58	4.39	6.24	4613	
4614	No. 2—Kulle X Special	Karl C. Kulle, Suffield	7.79	9.47	0.36	2.45	2.09	23.14	4614	
4615	No. 3—Kulle Special No. 2	Karl C. Kulle, Suffield	7.00	8.51	0.19	2.99	2.80	7.69	4615	
4616	No. 4—Kulle Special No. 2	Karl C. Kulle, Suffield	6.48	7.88	0.15	2.55	2.40	7.03	4616	
4617	No. 5—Kulle Special No. 2	Karl C. Kulle, Suffield	6.54	7.95	0.15	2.29	2.14	6.18	4617	
4761	No. 6—1930 Kulle Special Mixture	Karl C. Kulle, Suffield	6.75	8.21	0.27	2.89	2.62	7.90	4761	

TABLE XV. ANALYSES OF SPECIAL AND HOME MIXTURES—Concluded.

Station No.	Manufacturer and Brand	Place of Sampling	Total nitrogen		Ammonia equivalent to total nitrogen		Phosphoric acid			Potash		"Available"
			%		%		Citrate-insoluble	Total	"So-called" "Available"	As murate	Total	
4762	<i>Sampled by Purchaser</i> No. 7-1930 Kulle Special Mixture No. 1	Karl C. Kulle, Suffield	6.32		7.68		0.27	4.57	4.30	0.31	5.55	4762
4763	No. 8-1930 Kulle Special Mixture No. 1	Karl C. Kulle, Suffield	6.53		7.94		0.15	4.55	4.40	0.35	6.04	4763
4764	No. 9-1930 Kulle Special Mixture No. 1	Karl C. Kulle, Suffield	6.41		7.79		0.27	4.42	4.15	0.85	5.83	4764
4765	No. 10-1930 Kulle Special Mixture No. 1	Karl C. Kulle, Suffield	6.40		7.78		0.24	4.66	4.42	1.12	5.74	4765
4766	No. 10-1930 Kulle Special Mixture No. 2	Karl C. Kulle, Suffield	6.82		8.29		0.38	2.78	2.40	0.31	7.72	4766
4412	Home Mixture Fertilizer	Leslie W. Newberry, So. Windsor	7.66		9.31		0.22	3.13	2.91	0.85	8.10	4412
4659	6-5.5-7.5 Fertilizer	Morris Rosenberg, Windsor	5.18		6.30		1.33	7.37	6.04	0.85	7.67	4659
4805	Special Mixture	Paul P. Kostek, Melrose	5.88		7.15		0.57	3.73	3.16	0.85	6.87	4805
4263	Mixed Fertilizer No. 1	Silberman & Kahn, Hartford	4.27		5.19		0.90	8.14	7.24	1.12	11.70	4263
4270	Mixed Fertilizer No. 8	Silberman & Kahn, Hartford	5.86		7.12		0.41	6.62	6.21	0.44	8.38	4270
4271	Mixed Fertilizer No. 9	Silberman & Kahn, Hartford	5.21		6.33		0.44	6.22	5.78	0.60	10.16	4271
4484	Fertilizer	Tree Farms, Inc., Cromwell	1.18		1.43		0.10	0.85	0.75	0.10	2.60	4484
4620	Special Tobacco Mixture Fertilizer No. 10	Henry E. Wells, Warehouse Point	5.03		6.12		1.00	9.80	8.80	0.10	16.97	4620
4621	Special Tobacco Mixture Fertilizer No. 11	Henry E. Wells, Warehouse Point	4.93		5.99		1.03	10.35	9.32	0.10	17.19	4621

VII. MISCELLANEOUS FERTILIZERS, AMENDMENTS, WASTE PRODUCTS, ETC.

SHEEP MANURE, ETC.

Seventeen samples of this class of fertilizers have been analyzed and the results appear in Table XVI. All guaranties were met or exceeded except in one sample, 4548, where a deficiency in potash was found.

The average nitrogen content was 2.6 per cent, available phosphoric acid 1.68, and total phosphoric acid 1.89 per cent.

LIME

Limestone and agricultural lime are not classed as fertilizer under our fertilizer law, but such brands as were found were collected by our agent and analyses are given in Table XVII.

OTHER MISCELLANEOUS MATERIALS

In Table XVIII are given partial analyses, and remarks where necessary, of various materials examined for individuals. The total number of such samples is 65. Materials are designated by the names as submitted.

COLLABORATIVE WORK

Forty-five samples of check meals and check fertilizers have been examined during the year in connection with the collaborative programs of the American Oil Chemists Society and the F. S. Royster Guano Company.

ACTIVITY OF THE NITROGEN IN SOY BEAN MEAL

A sample of soy bean meal was submitted with the inquiry as to its value for fertilizer purposes as compared with cottonseed meal and castor pomace.

The accompanying values were determined for the sample, but the figures for cottonseed meal and castor pomace are taken from various texts.

	Soy bean meal %	Cottonseed meal %	Castor pomace %
Total nitrogen	8.22	7.02	5.28
Water soluble nitrogen	4.91	0.63	0.88
Insoluble organic nitrogen	3.31	6.39	4.40
Active insoluble	1.80	4.09	2.55
Inactive insoluble	1.51	2.30	1.85

Water soluble nitrogen is much higher in the soy bean than in the other materials. The water soluble and the "active" insoluble together is about 80 per cent of the total in soy bean, as compared with 67 per cent and 64 per cent, respectively, in the other materials.

So far as these results are concerned the comparison favors soy bean, but a larger number of samples should be examined. "Activity" comparisons are on the basis of the alkaline permanganate method.

TABLE XVI. ANALYSES OF

Station No.	Manufacturer or Brand	Place of Sampling
<i>Sampled by Station</i>		
4140	AAC Pulverized Sheep and Goat Manure. American Agricultural Chemical Co., New York City	Atwater Mills, Plantsville
4424	Sheep and Goat Manure. Armour Fertilizer Works, New York City	Raven's Hardware Co., Meriden ..
3973	Par Plus Brand Reinforced Sheep Manure. A. H. Case Co., Inc., Buffalo, N. Y.	S. D. Woodruff & Sons, Orange ..
4034	Corenco Sheep Manure. Consolidated Rendering Co., Boston, Mass.	Eldredge Hardware Co., Norwich
4245	Davey Shredded Cattle Manure. Davey Tree Expert Co., Kent, Ohio	R. E. Landis, Sound Beach
4885	G & O Sheep Manure. Goulard & Olena, Inc., New York City	Radcliffe Bros., New Britain
4028	"Sheep's Head" Pulverized Sheep Manure. Natural Guano Co., Aurora, Ill.	Cadwell & Jones, Hartford
4251	Groz-It Brand Pulverized Sheep Manure. Pacific Manure & Fertilizer Co., San Francisco, Calif.	Seymour Grain & Coal Co., Seymour
3960	Premier Brand Poultry Manure. Premier Poultry Manure Co., Chicago, Ill.	Lightbourn & Pond Co., New Haven
3961	Premier Brand Sheep Manure. Premier Poultry Manure Co., Chicago, Ill.	Lightbourn & Pond Co., New Haven
3946	Wizard Brand Pulverized Sheep Manure. Pulverized Manure Co., Chicago, Ill.	S. P. Strople, New Britain
3947	Wizard Brand Cattle Manure. Pulverized Manure Co., Chicago, Ill.	S. P. Strople, New Britain
4548	Sheep Manure. Standard Wholesale Phosphate & Acid Works, Baltimore, Md. ...	Stanley Svea Coal Co., New Britain
4039	Sheep and Goat Manure. I. P. Thomas & Sons, Philadelphia	Ira W. Beers, Hamden
<i>Sampled by Purchaser</i>		
2281 ¹	Manufacturer unknown	Loring V. Tirrell, Storrs
2233 ¹	Manufacturer unknown	Chas. A. Templeton, Waterbury ..
2234 ¹	Manufacturer unknown	Chas. A. Templeton, Waterbury ..

¹ 1929 stock.

SHEEP MANURE, ETC.

Total nitrogen	Ammonia equivalent to total nitrogen		Phosphoric acid				Potash		Station No.
			Available		Total		Found	Guaranteed	
	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed			
%	%	%	%	%	%	%	%	%	
1.36	1.65	1.50	1.53	....	1.73	0.50	2.02	2.00	4140
1.52	1.85	1.50	....	....	1.22	1.00	3.41	2.00	4424
2.50	3.04	2.25	2.56	0.75	3.21	1.50	1.83	1.50	3973
1.34	1.63	1.50	....	....	1.27	0.50	3.63	2.00	4034
1.90	2.31	1.20	1.37	1.00	1.57	1.00	2.42	2.00	4245
1.39	1.69	1.50	1.15	1.00	1.35	....	3.34	2.00	4885
2.08	2.53	2.43	....	....	1.32	1.25	3.26	1.50	4028
1.42	1.73	....	....	....	0.93	0.75	2.55	2.50	4251
5.02	6.10	6.00	2.53	2.50	2.63	2.75	1.40	1.30	3960
1.93	2.35	2.00	0.94	0.80	1.00	1.00	2.36	2.00	3961
2.17	2.64	2.43	....	....	3.46	....	2.89	2.00	3946
2.35	2.86	2.10	....	....	1.53	....	1.83	1.00	3947
3.82	4.64	2.00	....	....	3.61	1.00	1.16	2.00	4548
1.70	2.07	1.50	....	....	2.53	1.00	4.22	2.00	4039
2.23	2.71	....	....	....	0.98	....	1.24	....	2281
2.10	2.55	....	....	....	3.12	....	3.32	....	2233
1.58	1.92	....	....	....	0.75	....	2.47	....	2234

TABLE XVII. ANALYSES OF

Station No.	Manufacturer or Brand	Sampled by
4738	<p style="text-align: center;">R. S. Coe, Northford, Conn.</p> Ground Limestone	Station agent. Sampled at factory
4737	<p style="text-align: center;">Connecticut Adamant Plaster Co., New Haven, Conn.</p> Land Plaster (Gypsum)	Station agent. Sampled at factory
2969	<p style="text-align: center;">Connecticut Agstone Co., Danbury, Conn.</p> Limestone	B. A. Brown, Storrs
4735	<p style="text-align: center;">Farnam-Cheshire Lime Co., Farnams, Mass.</p> Agstone Phoenix Brand	Station agent. Stock of Belden Stock Farm, Ellington
3845	<p style="text-align: center;">Grangers Manufacturing Co., West Stockbridge, Mass.</p> Agricultural Lime	Warner-Miller Co., New Haven ..
4290	<p style="text-align: center;">Lee Lime Corp., West Stockbridge, Mass.</p> Agricultural Lime	Louis Borrelli, Clintonville
3883	<p style="text-align: center;">Miller Lime Products Corp., West Stockbridge, Mass.</p> Limestone, Car No. N. H. 172094	Grangers Manufacturing Co., West Stockbridge, Mass.
4731	<p style="text-align: center;">Lee Lime Corp., West Stockbridge, Mass.</p> Agricultural Limestone	Collins & Freeman, Branford
4732	<p style="text-align: center;">Miller Lime Products Corp., West Stockbridge, Mass.</p> Hydrated Lime (Tobey Lime)	Station agent. Stock of Carmen Pompey, Plainville
4733	<p style="text-align: center;">Miller Lime Products Corp., West Stockbridge, Mass.</p> Lee Agricultural Lime	Station agent. Stock of E. W. Woolam, Warehouse Point
4730	<p style="text-align: center;">New England Lime Co., Pittsfield, Mass.</p> Agra Land Lime	Station agent. Stock of J. A. Smith, Highwood
4736	<p style="text-align: center;">The Redding Marble Co., Hamden, Conn.</p> Monarque Agricultural Hydrated Lime ..	Station agent. Stock of Ira W. Beers, Hamden
4304	<p style="text-align: center;">The Redding Marble Co., Hamden, Conn.</p> Hydrated Lime	A. N. Shepard & Son, Hartford ..
3111	<p style="text-align: center;">The Redding Marble Co., Hamden, Conn.</p> Ground Limestone	Henry D. Peters, Hamden

LIMESTONE, ETC.

Chemical analysis					Mechanical analysis					Station No.
Lime (CaO)		Magnesia (MgO)		Total oxides	20 mesh	40 mesh	50 mesh	80 mesh	100 mesh	
Found	Guaranteed	Found	Guaranteed							
%	%	%	%							
49.18	....	0.83	....	50.01	82.0	63.0	52.5	42.0	38.0	4738
33.53	....	0.25	....	33.78	100.0	99.5	98.3	84.5	58.5	4737
40.80	....	4.00	....	44.80	94.5	84.5	73.5	55.5	46.5	2969
38.35	35.00	5.18	1.00	43.53	97.5	89.0	81.0	62.5	41.0	4735
71.09	....	0.76	....	71.85	85.5	50.5	28.5	13.5	9.5	3845
62.06	....	1.79	....	63.85	89.0	59.0	37.0	32.0	16.0	4290
50.66	....	0.54	....	51.20	...	...	...	...	...	3883
38.27	35.00	9.74	1.00	48.01	98.0	86.0	75.0	62.0	56.0	4731
48.07	....	31.32	....	79.39	99.5	98.5	92.0	46.0	22.0	4732
47.24	40.00	32.22	20.00	79.46	98.5	94.5	76.0	69.5	59.5	4733
54.74	45.00	3.95	8.00	58.69	99.5	96.5	86.0	70.5	58.5	4730
63.76	36.87	8.10	13.72	71.86	99.5	98.5	95.5	83.5	69.5	4736
45.16	....	17.53	....	62.69	98.0	97.0	82.0	32.0	16.0	4304
30.26	....	19.89	....	50.15	99.5	98.5	98.0	80.5	62.0	3111

TABLE XVII. ANALYSES OF

Station No.	Manufacturer or Brand	Sampled by
	Rockland & Rockport Lime Co., Rockland, Me.	
4734	R. R. Land Lime	Station agent. Stock of Loomis Bros., Granby
	U. S. Gypsum Co., Falls Village, Conn.	
4399	Lime	Otis W. Chase, Killingly
	Manufacturer Unknown	
1946 ¹	Lime	Station agent. Stock of G. A. Peckham, Suffield
3051	Lime	George J. Frick, Higganum
4062	Lime	T. R. Swanback, Tobacco Station, Windsor
4345	Dolomitic Lime	The Bevin-Wilcox Line Co., East Hampton

¹ 1929 stock.

TABLE XVIII. OTHER MISCELLANEOUS MATERIALS.

No.	Material	Nitrogen	Phosphoric acid	Potash	Remarks
		%	%	%	
4247	Ammo.-Phos. B. (Am. Cyanamid Co.)	16.09	23.10	.....	.....
4246	Ammo.-Phos. A. (Am. Cyanamid Co.)	10.71	47.20	.....	.....
3238	Bat guano	11.12	3.45	1.40	.....
4704	} Bone, ground	.....	.....	.....	Contaminated with creosote or some phenol-like substance. Vegetation tests with young chrysanthemums revealed no damage to the young plants over a period of 1 month. No damage was reported from the greenhouse where this bone had been applied.
4705		.....	.....	.....
3690	Bone screenings, raw	4.00	17.48	.....	.....
4248	Bone, precipitated	.....	46.00	.....	.....
3231	"Bone meal"	.....	.....	.....	Appears to be bone tankage. Meat present.
4239	Carbonate of potash	.....	.....	66.32	.....
3887	Colloidal phosphate	.....	19.63	trace	Avail. by usual method was 4.2%. By modified method (washing with ammon. chloride), avail. was 1.32%. MgO 0.35.
4244	Colloidal phosphate (Tobacco Station)	.....	20.53	.....	Washed with water in usual way some material is carried through and evaluated as water-soluble phosphoric acid 8.25%, but using a Berkefeld filter the filtrate is clear and there is no phosphoric acid in it. Ammonia citrate appears to dissolve a little, giving an "available" of 2.18%.
4026	Cottonhull ashes	.....	5.00	25.31	CaO 12.73, MgO 5.35, B ₂ O ₃ 0.009.
1321	Cottonhull ashes	.....	.....	22.84	MgO 8.02, Mn ₂ O ₄ trace, B ₂ O ₃ 0.03.
3062	Cottonhull bran	0.48	.....	.....	.....
3703	Cottonseed lint	1.47	0.77	1.47	.....
3989	Cow manure (moist)	0.49	0.35	0.66	Moisture 81%, CaO 0.55, MgO 0.29.
3284	Factory waste	.....	.....	.....	Appears to be chiefly iron sulfate. No substantial amounts of N, P ₂ O ₅ or K ₂ O.
3541	Fertilizer 5-8-7 (Woodruff)	5.67	7.45	4.36	Submitted by the manufacturer.
3540	Fertilizer 4-8-6 (Woodruff)	4.34	7.43	6.65	Submitted by the manufacturer.
4740	"Fertilizer" (Montanaro & Schwartz)	0.00	0.01	0.00	CaO 40.95, MgO 8.22. The sample was largely or entirely calcium carbonate.

TABLE XVIII. OTHER MISCELLANEOUS MATERIALS—Continued.

No.	Material	Nitrogen	Phosphoric acid	Potash	Remarks
		%	%	%	
4818	Same as above	.....	.....	.....	Passed 20 mesh 100%, 40 mesh 99.5%, 50 mesh 97.5%, 80 mesh 88%, 100 mesh 70.5%.
3702	"Schwartz's Special Lawn Fertilizer"	.....	.....	.....	Largely or entirely calcium carbonate.
4289	Fertilizer 4-8-7 (Std. Wholesale P. & A. Works)	4.38	8.32	7.66	.....
4288	Fertilizer 5-10-5 (Std. Wholesale P. & A. Works)	4.26	10.63	5.50	.....
4719	Fertilizer	2.33	10.07	4.86	Moisture 18.28%.
2243	Fertilizer	6.02	3.54	7.00	.....
2279	Fertilizer	5.28	4.06	11.42	.....
2459	Fertilizer, 8-16-16	7.26	15.98	14.65	.....
2460	Fertilizer, 4-8-8	4.15	9.15	7.57	.....
2302	Fertilizer Shade Tree Food (Millane)	7.70	12.53	5.43	.....
2802	Fish, dry, ground	9.60	7.63	.....	.....
3276	Fish scrap	8.28	.....	.....	.....
4208	Grape pomace ash	.....	6.01	17.61	CaO 8.47, MgO 2.57.
3504	Humus	0.36	0.11	0.03	Moisture 40.33, ash 47.20, organic and volatile 12.47.
3275	Hoof meal	14.81	.....	.....	.....
2284	Muck	0.85	0.13	0.35	Air dry.
2283	Muck	1.82	0.09	0.05	Air dry.
2245	Muck	0.80	0.12	0.21	Air dry.
2244	Muck	1.06	0.30	0.42	Air dry.
4241	Nitrate of potash	13.34	.....	45.05	.....
4233	Nitrophoska	15.72	16.48	19.05	Chlorine 0.81.
4826	Peat	1.00	0.10	.....	Moisture 10.88, ash 23.85, organic and volatile 65.27.
2935	Poultry manure	2.44	3.86	1.28	Air dry basis.
2936	Poultry manure	2.12	7.09	0.93	Air dry basis.
2939	Rock	.....	.....	.....	Sandstone and mica. Some iron present.
3831	Sewage sludge	1.09	1.47	0.14	Dry basis.
4200	Sewage sludge	2.42	0.83	0.22	Dry basis.
3709	Soy bean meal	8.22	.....	.....	Insol. organic nitrogen 3.31%. Active insol. by alkaline method 54.4%.
4238	Superphosphate	.....	15.55	.....	.....
4386	Tankage	3.70	.....	.....	.....
3140	Tankage	2.48	4.29	.....	.....
3112	Tobacco stems	1.03	0.60	5.28	Moisture 11.50, Cl. 2.42.

TABLE XVIII. OTHER MISCELLANEOUS MATERIALS—*Concluded.*

No.	Material	Nitrogen	Phosphoric acid	Potash	Remarks
		%	%	%	
3048	Tobacco stems	1.22	0.73	5.13	Moisture 13.60.
4917	Tobacco stems, ground and sterilized	1.02	0.58	3.30	Chlorine 1.10.
4262	Tobacco stems, ground and sterilized	1.45	0.69	5.10	.....
4857	Tobacco dust	0.54	0.42	1.26	.....
3833	Tobacco stems, ground	1.34	0.64	4.74	.....
2804	Tobacco stems	1.47	.....	4.47	.....
4242	Tobacco stems, ground	1.30	0.70	5.08	.....
4803	Tobacco stems	1.34	0.71	4.41	Chlorine 1.03, SO ₃ 0.99.
4425	Unknown substance	.....	.....	.....	Identified as lead arsenate.
4426	Unknown substance	Identified as air-slaked dolomitic lime.
4800	Unknown substance	Identified as slaked lime.

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