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FLORIDA QUARTERLY BULLETIN

JANUARY 1, 1913

DEPARTMENT OF AGRICULTURE.

W. A. McRAE
Commissioner of Agriculture

REPORT OF THE CHEMICAL DIVISION.

R. E. ROSE
State Chemist

**Analysis of Fertilizers, Feed Stuff, Food and
Drugs. Rules and Regulations.**

Entered January 31, 1903, at Tallahassee, Florida, as second-class matter,
under Act of Congress of June, 1900.

These Bulletins Are Issued Free to Those Requesting Them

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STATE CHEMIST'S REPORT, 1912.

Tallahassee, Fla., January 1, 1913.

To His Excellency,

Albert W. Gilchrist, Governor,

Tallahassee, Florida.

Sir:—I have the honor to submit the following report of the Chemical Division of the Agricultural Department of the State of Florida for the year ending December 31, 1912:

The report of the State Treasurer, show the sale of inspection stamps covering 295,425.36 tons of Commercial Fertilizers and Cotton Seed Meal—

Amounting to\$51,356.34

And 125,856.84 tons of Commercial Feeding Stuffs—

Amounting to\$31,464.21

A total revenue of\$82,820.55

paid into the State Treasury to the credit of the General Revenue Fund. From which is to be deducted the total expenses of the Chemical Division, and the expenses of the Department of Agriculture, incident to the execution of the Fertilizer, Feed Stuff, and Pure Food and Drug Laws.

EXPENDITURES OF CHEMICAL DIVISION.

Salary of the State Chemist	\$ 2,500.00
Salary of Asst. State Chemist, Fertilizers.....	1,800.00
Salary of Asst. State Chemist, Food and Drugs	1,800.00
Salary of Asst. State Chemist, Stock Feed	1,500.00

Salary two Inspectors, Chemical Division.....	3,000.00
Salary Clerk Chemical Division	900.00
Traveling Expenses two Inspectors	1,658.63
Samples and Incidentals, Pure Food Department	487.16
Chemicals, Apparatus and Incidentals, State Laboratory	786.04
Traveling Expenses State Chemist and Assistants	683.95
Postage State Chemist	142.50
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Total expenses, Chemical Division	815,257.41
To Credit of General Revenue Fund	67,563.14
	<hr/>
Total Receipts	882,820.55

ANALYTICAL WORK.

The following analyses were made during the year:

Official samples fertilizers	145
Special samples fertilizers (sent in by citizens)....	186
Official samples feed stuff	186
Special samples feed stuff (sent in by citizens)....	34
Official food and drug samples	126
Special food and drug samples (sent in by citizens)	48
Official samples citrus fruit	12
Special samples citrus fruit (sent in by citizens)...	299
Official samples Everglade soil	35
Water samples	46
Miscellaneous samples (sent in by citizens)	75
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Total number analyses	1192

FERTILIZERS.

L. Heimburger, B. S., M. S., Analyst.

Official samples fertilizer	145
Special samples fertilizers	186
Official samples Everglade soils	34
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Total analyses fertilizer department	365

The 130 samples of complete fertilizer drawn by the State Chemists and Inspectors had the following average composition and guarantee:

	Available		
	Ammonia.	Phos. Acid.	Potash.
Official analysis	4.23%	6.47%	7.10%
Guarantee	4.05%	6.18%	6.80%
Excess above guarantee .	0.18%	0.26%	0.30%
Average State value found, per ton.....	\$31.19		
Average State value guaranteed, per ton..	29.94		

EXCESS 0.20% ABOVE GUARANTEE.

We find complete fertilizers exceeding the guarantee 0.20% (twenty points), as follows:

In Ammonia	69 samples, or....	53.1%
In Available Phosphoric Acid..	76 samples, or....	58.5%
In Potash	71 samples, or....	54.6%

DEFICIENCY 0.20% BELOW GUARANTEE.

We find complete fertilizers below guarantee 0.20% (twenty points), as follows:

In Ammonia	21 samples, or....	16.1%
In Available Phosphoric Acid..	31 samples, or....	23.8%
In Potash (K ₂ O)	39 samples, or....	30.0%

COMMERCIAL STOCK FEED.

E. Peck Greene, B. S., Analyst.

The following analyses have been made during the year:

Official samples feed stuff	186
Special samples feed stuff	34
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Total analyses Feed Department	220

The average composition of the official samples was as follows:

	Protein.	Starch and Sugar.	Fats.
Official analysis	15.38	55.08	3.96
Guaranteed analysis	15.04	54.68	3.67
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Excess	1.34	0.40	0.29

We find the official samples of feed stuffs exceeded the guarantee 0.20% (twenty points), as follows:

In Protein	136 samples, or.....	72.22%
In Starch and Sugar.....	89 samples, or.....	47.26%
In Fats	60 samples, or.....	33.45%

There was a deficiency of 0.20% (twenty points), as follows:

In Protein	11 samples, or.....	5.84%
In Starch and Sugar	70 samples, or.....	37.17%
In Fats	61 samples, or.....	34.45%

FOODS AND DRUGS.

A. M. Henry, B. S., Analyst.

Official food and drugs samples	126
Special food and drugs samples.....	48

Official citrus fruit samples.....	12
Special citrus fruit samples	299
Water samples	46

Total food and drugs samples531

Official Food Samples—Legal.....	45 or 35.71%
Official Food Samples—Illegal.....	57 or 45.24%
Official Food Samples—Passed.....	24 or 19.05%

The 57 illegal samples were principally misbranded, failing to state net weight or measure.

Adulterated	5
Misbranded	52
Immature citrus fruit samples reported.....	12

Those samples found adulterated or misbranded have been reported to the proper officer. In all cases the dealers and manufacturers have corrected the labels by placing the proper labels on the goods or by withdrawing the offending materials from the market.

Few prosecutions have been found necessary to enforce the provisions of the law.

NET WEIGHT AND MEASURE.

The trade is now generally well supplied with packages of food, the labels of which show correctly the net weight or measure of the contents.

There still remains more or less of old stock that was legally on hand, when the law went into effect.

Such stock can not be legally sold after February 1st, without the net weight or measure being properly stated on the label.

Dealers, and particularly retail dealers, are cautioned that after February 1st, 1913, the labels on all packages

of food must fully comply with the Pure Food Law—old stock as well as new.

The agreement made with dealers on June 18, 1912, allowing until February 1st, 1913, to dispose of such old stock as was still legally on hand when the law was approved—will become void, and all goods must fully comply with the law, after February 1st, 1913.

BENZOATES, AND OTHER CHEMICAL PRESERVATIVES.

The same ruling applies to foods containing Benzoates and other chemical preservatives. Foods containing Benzoates or other chemical preservatives, cannot be legally sold after February 1, 1913. This applies to old stock, or new stock.

There are in the State numerous brands of pure, wholesome, non-preservative goods, of excellent quality, sold at the same prices (to the consumer) as questionable goods, chemically preserved.

While there are some chemically preserved goods, made from sound materials, under sanitary conditions, they are the exception, and not the rule.

The presence of chemical preservatives can therefore be taken generally as an indication of unsound material, and unsanitary conditions of manufacture, preservatives being generally employed to prevent further decomposition of partially decayed materials, and offset the effect of unclean methods of manufacture.

Retail dealers and consumers are cautioned that goods containing Benzoates or other chemical preservatives, can not be legally sold after February 1, 1913.

Many of the largest and most successful packers have voluntarily abandoned preservatives, finding them unnecessary, when sound fruit or vegetables are used under proper sanitary conditions—and also that the presence of

preservatives, to a certain extent, decreased their sales, it being now generally understood that preservatives indicate inferior material, and careless handling.

IMMATURE CITRUS FRUIT.

The Pure Food Division of this Department, devoted a large part of its time, from June 1 to August 15, to the study of the various analyses of oranges.

Since September 1st, a careful study has been made of Florida oranges of different varieties, from localities well distributed over the State, systematically gathered and sent in by numerous growers. This is probably the first systematic effort to determine the chemical changes in citrus fruit during the process of ripening.

The special study made and submitted to the Gainesville Convention of Orange Growers—as published in the October Bulletin 1912, indicates very conclusively that a chemical standard of maturity can, after a careful analytical study, be arrived at.

Some 311 analysis of oranges have been made. These analyses will be tabulated, by date, variety, and locality, summaries made and conclusions drawn, in order that the orange growers of the State may have a basis on which to establish a chemical standard of maturity, if desired.

The advantages or disadvantages of a law prohibiting the shipment of immature citrus fruit, must of necessity, be decided by the growers themselves.

If such a law is desirable, it follows that a standard must be fixed by the growers, and enacted into the law.

The Agricultural Department, though intrusted with the fixing of standards, can do so only when such standard is agreed upon by the parties interested in the business.

I believe that a careful study of the analytical results of this season's work will readily show the ripening process.

It remains for the grower, and the consumer to agree at what degree of sweetness an orange ceases to be unripe or immature, and becomes a ripe and wholesome fruit.

The detailed results of this study and conclusions drawn will be published in a special pamphlet at as early a date as practical, and also in the April Bulletin for 1913.

It is to be hoped that the orange growers of the State, associated and independent, will agree upon some fair means, either by law or commercial custom, to prevent the shipment of immature citrus fruit—a custom acknowledged by all growers to be detrimental to the business, not only in Florida but to other citrus growing countries.

Notices have been received by this division, from the U. S. Department of Agriculture, of numerous seizures of cars of immature California oranges—as many as six cars in one week—and eight cars another week indicating that California also has trials and vexations caused by shipping immature citrus fruit.

It is very evident that the consumer of oranges and grape fruit, has discovered that immature citrus fruit are not desirable or palatable, and declines to be victimized by unripe oranges, though they may be "yellowed" by holding for some time in unventilated cars under a hot sun.

Also that the Health Authorities, both State and National, have decided to prevent the sale of such immature and unwholesome citrus fruit.

EVERGLADE SOILS.

The demand for information as to the chemical composition and productiveness of Everglade soils, on account of the extensive publicity given to the progress of the canals now being cut by the State, from Lake Okeechobee to tide water on the Gulf and Atlantic—into which the

adjacent lands may be drained, by the construction of the necessary lateral canals and ditches by their owners—has induced this Division to analyse a series of samples of Everglade soils.

Some thirty-five samples were taken at different points through the center of the Glades, from Lake Okeechobee to Miami, by United States, and State Inspectors. Duplicate samples were taken to be analyzed by the United States and Florida Chemical Divisions.

These analyses show nothing new. No new information has been gained. Analyses of Everglade soil and other Florida muck lands have been made on a number of previous occasions by eminent chemists; Official Chemists and others of repute and scientific prominence, and published in various Official documents, and scientific journals.

The U. S. Department of Agriculture, 1891; The Florida Agricultural Experiment Station, 1897 (Bulletin No. 43); with numerous analyses made by this Division during the past twelve years, and published in the various Quarterly Bulletins and reports.

While these analyses simply confirm former analyses made by divers laboratories and chemists, they are the first complete series of Everglade soils, taken consecutively and carefully, the entire distance from Lake Okeechobee to the Atlantic edge of the Glades, through their center, near the banks of the newly cut canals.

The analyses show, as do those formerly made and alluded to, an exceedingly high nitrogen content, with comparatively small percentages of Potash and Phosphates. There is no deficiency in these soils of Potash and Phosphates when compared to other productive, agricultural soils, only in comparison to the excessive nitrogen content is the deficiency of Potash and Phosphate notable. The average nitrogen percentage (as Ammonia) for the series is 3.10%, while the average Potash is 0.08%.

and Phosphate 0.18%. Many brands of commercial fertilizer have a less percentage of nitrogen than the average soils of the Everglades.

This excessive nitrogen content is not peculiar to the Peat, or Muck Lands of Florida, but is common to similar lands of the Western States—Iowa, Illinois, Michigan and California—where vast areas of similar lands have been reclaimed by drainage, and where record crops of foliage plants—lettuce, celery, cabbage, onions, etc., are produced without the addition of commercial fertilizer, and where on the application of small amounts of Potash and Phosphates, large crops of starch producing crops are grown—corn, oats, potatoes, etc.

This applies equally to Florida muck, either in the Glades or elsewhere. When properly drained, to remove the excess of water replacing the water by air, thus oxidizing the muck, or decomposing it, it becomes a soil resembling a "potting mold," of extreme fertility.

This soil, without added Potash and Phosphates, will grow large crops of foliage plants. It will also produce large crops of cane, corn, rice and potatoes, with exceedingly heavy stalk, straw and vine, but a comparatively small yield of sugar, or grain. This however, is again only comparative, as the yield of sugar or grain is more than equal to that produced on adjacent soil.

The application however, of Potash and Phosphate will very greatly increase the yield of sugar and grain (starch), without at all affecting the size or weight of the plant.

This however, is not a peculiar quality of Florida muck or peat soils. Experience has shown that the same conditions exist in the West—that the application of Potash and Phosphates in limited amount, results in largely increased crops of all kinds—on the muck or peat lands of Iowa, Illinois, Michigan, Nebraska and California.

These analyses, together with the crops now growing

on such Everglade lands as have been properly drained, and other similar soils in Florida and other States, when thoroughly and perfectly drained, should set at rest the question of the productiveness of Everglade soil, when properly drained.

If not perfectly drained, such soils are valueless and unproductive. When perfectly drained, no soil is more productive.

As nitrogen is the predominating element necessary for the production of foliage crops, pasture grasses, meadows, sugar cane and similar plants, these Glade lands will become—when perfectly drained—not only valuable as sugar cane and rice fields, but will afford abundant crops of pasture and meadow grasses.

The heavy growth of Para grass, Rhodes grass, Bermuda and millet now growing on these lands, though not yet perfectly drained, fully establishes their value for a vast live stock industry, both for dairy farming and beef cattle.

COMMERCIAL FEED STUFF.

There were consumed in the State during 1912, 125,856 tons of commercial feed stuff—not including hay, corn, oats, and other stock feed not subject to inspection.

The average value of this imported feed stuff was \$30.00 per ton, or a total of \$3,775,680, a sum which should be retained in the State by producing this feed stuff on her own fields and pastures, thus retaining this vast sum among her citizens.

No state produces a larger variety of grasses,—native grass, and newly introduced varieties—pasture and meadow grasses.

Bermuda, Crab Grass, Para, Natal and Rhodes Grass grow luxuriantly and yield large crops of excellent

pasture—grass, and hay. These grasses are peculiarly adapted to well drained flat woods, prairies, and reclaimed muck land. With little exertion, pastures and meadows are readily established.

Among the legumes, the velvet bean and the Lyon bean (related to the velvet bean), cowpeas of the various kinds, and Japanese Kudzu, are best adapted to the soil and the climate of Florida.

Their yield compares favorably with the clovers, and alfalfas of other states, while their feeding value is equally as great.

For cattle and hogs, no forage crop exceeds Japanese sugar cane, which grows profusely. When once established, it will continue to reproduce itself annually without replanting, yielding from ten to twenty tone of green forage per acre, rich in sugar, a superior "fat former."

Japanese Kudzu—a perennial legume—will continue to reproduce itself, when once established.

This combination of Japanese sugar cane, and Japanese Kudzu will furnish continuous forage, of both the Carbohydrates (fat formers) and the Proteins (flesh formers), an ideal balanced ration for live stock of any kind—beef cattle, dairy farming or hog raising. The chemical analysis and feeding value of these forage plants is given among others in this report.

The Bulletins of the Florida Agricultural Experiment Station, Gainesville, give detailed reports of feeding experiments with the Japanese cane and velvet bean.

It is gratifying to note that while there are still large sums expended for imported stock feed, that many of our farmers are now producing their own forage and feed—and that a very considerable amount of first class domestic hay, equal in every way to clover, alfalfa, or timothy, is now to be found in local markets.

PRAIRIE PASTURE LANDS.

It is not generally known that there are large areas of prairie lands in Florida, on which large herds of native cattle are found.

Individual herds of from 500 to 10,000 head are not uncommon on the prairies bordering the upper St. Johns, the Kissimmee and the Miaka Rivers—in Brevard, Orange, St. Lucie, Osceola, DeSoto, Lee and Manatee Counties.

The grasses names—Bermuda, Para, Natal and Rhodes grasses, when established, grow luxuriantly on these prairies and flat woods, when properly drained. Velvet beans, Kudzu and Japanese cane are also being rapidly introduced in the cattle district.

While the value of the native grasses—largely *Paspalum* (carpet grass) is attested by the thousands of fat cattle annually shipped from these prairie pastures, of which there are probably two million acres within the counties named, prairies that naturally produce grasses equal to any of the Western States, and on which cattle are pastured the entire year, where grass is abundant, and where lakes and streams, to say nothing of Artesian wells, furnish a constant supply of pure water.

With her productive soil, abundant rainfall, semi-tropical climate, lakes and streams—where cattle can be pastured in the open the entire year, with no necessity for expensive barns, with her numerous native grasses and legumes, adapted to her soil and climate, together with such as have been introduced from other tropical and semi-tropical countries, Florida should, and will in a few years, become one of the leading beef cattle and dairy states of the Union, producing not only the necessary food for her flocks but as large an amount for export as is now imported.

INCREASING DEMAND FOR ANALYTICAL DATA.
INCREASING REVENUE OF THE
DIVISION.

This report shows, as do the previous reports since 1901, a uniform, steady increase in the work demanded of the Chemical Division, with a similar uniform increase in the revenues of the Division.

The gross revenue for 1912, being \$82,820.55—expenses \$15,257.41 showing a net balance to the credit of the General Revenue Fund of \$67,563.14—as compared to a gross revenue of \$71,353.25 and a net balance of \$55,438.70 for 1911—a net gain of \$12,124.44 over 1911.

The analytical work shows a larger proportionate increase—1,192 complete analyses, as compared to 958 for 1911—an increase of 234 analyses.

This increase is largely attributed to the unusual demand on the analytical force from September 1, until December 31, in analyzing the 311 samples of citrus fruit.

The Food and Drug Analyst, with an assistant constantly, while on occasion the services of the Stock Feed Analyst were necessary. Should the demand for the analysis of citrus fruit continue, it will be necessary to increase the analytical and inspection force of the Division, with the necessary increase in funds to provide the same and the required chemicals and apparatus.

INSPECTION.

The efficiency of the Pure Food, Fertilizer and Stock Feed Laws, depend very largely on the careful, intelligent, and constant inspection of the various warehouses, factories, and wholesale and retail stores of the State.

The revenues of the Division also depend very largely on efficient inspection.

The great area of the State (the largest East of the

Mississippi), the long distances from Pensacola on the West, to Jacksonville on the East, to Tampa, Miami and Key West on the South, make it a physical impossibility for two inspectors to properly cover the State.

I again call attention to the fact that economy and efficiency makes it necessary to employ at least three inspectors, with headquarters in the three principal cities of the State.

Active, efficient and frequent inspection of the various factories, warehouses, railroad stations, local warehouses and dealers' stocks of goods is imperative for the proper administration of the fertilizer, feed stuff and pure food and drug laws.

More depends upon the inspectors' vigilance to detect frauds, correct evils and protect the revenues of the State than upon any other branch of the service. This particularly applies to the larger cities of the State, the distributing points of most of the goods sold throughout the State, where are located the factories, warehouses and depots from which the fertilizers, feeds, foods and drugs are distributed to the retail merchant and the consumer, who depend upon the manufacturer, jobber and wholesaler for the quality, purity and legality of his goods, the truthfulness of the brand or label.

I again call attention to the present crude, cumbersome and comparatively expensive system of inspection. Our inspectors are active and diligent, and under our present system are doing all that can be expected of them to enforce the law and protect the State and her citizens from imposition and fraud.

The field is broad, however—the largest State east of the Mississippi River, with the longest distances by rail between her principal distributing points.

It is physically impossible for each inspector to efficiently and economically cover the entire State.

I would suggest that not less than three competent in-

spectors be employed, each to have authority to draw samples of all goods subject to inspection—that is, fertilizers, foods and drugs, and feeds; having authority to seize any material misbranded or that fails to bear the proper inspection stamp. That one of these inspectors be located at each large city—Pensacola, Jacksonville, and Tampa—and have charge each of a Congressional District, subject to orders of the State Chemist, and at his direction be detailed to any part of the State if necessary.

LABORATORY ASSISTANT, AND JANITOR.

The work of the various laboratories, in the preparation of samples—grinding fertilizer and feed stuffs, etc., the care of and cleansing of apparatus, and similar service as now performed by the several analysis, is expensive and retards them greatly in their more important analytical work.

The employment of a competent laboratory assistant and janitor, for the building occupied by the Chemical Division and Geological Survey; whose time should be exclusively devoted to this service, would be economical and add greatly to the efficiency and economy of the Division.

Very respectfully,

R. E. ROSE, State Chemist.

SPECIAL SAMPLES.

Florida is the only State in the Union that provides for the "special sample," drawn by the consumer or purchaser, under proper rules and regulations fixed by law—to be sent to the State Laboratory for analysis free of cost. Any citizen in the State who has purchased fertilizers or feeds for his own use may draw a sample of the same, according to law, and have the same analysed by the State Chemist free of cost. And in case of adulteration or deficiency he can, on establishing the fact, receive double the cost of price demanded for the goods.

The law requires the "special samples" to be drawn in a manner to prevent the submission of spurious samples; rules and regulations are published in every Bulletin for drawing and transmitting "special samples."

This special sample has been a most potent factor in enforcing the law and discouraging the sale of adulterated or misbranded goods.

Special samples of foods and drugs may also be sent to the State Laboratory for analysis free of cost, when the sample is properly drawn according to law. The necessary instructions and blanks required to properly draw and transmit samples of "food and drugs" will be sent to any citizen requesting the same.

"THE SPECIAL SAMPLE FURNISHES THE CONSUMER WITH THE SAME PROTECTION DEMANDED BY THE MANUFACTURER, WHO BUYS HIS MATERIALS ONLY UPON GUARANTEE AND PAYS FOR THEM ACCORDING TO ANALYSIS, AND IS PAID FOR BY THE CONSUMER OUT OF THE FUNDS DERIVED FROM THE INSPECTION FEE OF TWENTY-FIVE CENTS PER TON PAID ON FERTILIZERS AND FEEDS SOLD IN THE STATE."

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER OR COMMERCIAL FEEDING STUFF SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

SECTION 15 OF THE LAWS.

Special samples of Fertilizers or Commercial Feeding Stuffs sent in by purchasers, under Section 9 of the laws, shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed, and a fair sample of the same of not less than eight ounces (one-half pound) shall be placed in a tin can or bottle, sealed and sent by a disinterested party to the Commissioner of Agriculture at Tallahassee. Not less than eight ounces, in a tin can or bottle, will be accepted for analysis. This rule is adopted to secure fair samples of sufficient size to make the necessary determinations and to allow the preservation of a duplicate sample in case of protest or appeal. This duplicate sample will be preserved for two months from the date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce); frequently there are no marks, numbers or other means of identification; the postmark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

Hereafter, strict compliance with above regulations will be required. *The samples must not be less than one-half pound, in a tin can or bottle, sealed and addressed to the Commissioner of Agriculture. The sender's name and address must also be on the package, this rule applying to special samples of fertilizers or commercial feeding stuff.*

A one-pound baking powder tin can, properly cleaned, filled with a fairly drawn, well mixed sample taken from several sacks, is a proper sample. *It should be sealed and addressed to the Commissioner of Agriculture at Tallahassee. The sender's name and address should also be placed on the package. If more than one sample is sent, the samples should be numbered so as to identify them. All this should be done in the presence of the witnesses and the package mailed or expressed by one of the witnesses.*

The tags off the sacks should be retained by the sender to compare with the certificate of analysis when received, and not sent to this office. *The date of the drawing and sending the sample, and names of the witnesses, should also be retained by the sender; not sent to this office.*

SOIL ANALYSIS.

We frequently have samples of soil sent in for analysis and a request to advise as to the best methods of fertilizing.

Excepting in extreme cases, such as Heavy Clays, Pure Sand and Muck Lands, there is but little information to be derived from a soil analysis that would be of benefit to farmers. So much depends on tilth, drainage, culture and other physical conditions that an analysis made under laboratory conditions is of little value.

A chemical analysis of a soil may indicate a very fertile soil, rich in plant food, while the facts are the soils are not productive.

This is instanced by the rich Sawgrass muck lands and river bottoms of the State, that are fertile chemically, but not productive until properly drained; also, by the arid lands of the west, rich in the elements of plant food, but not productive until irrigated.

Other soils, with less plant food, but on account of proper physical conditions, culture and tilth, are exceedingly productive.

The average of thousands of analyses of Florida soils made by the Agricultural Experiment Station and the State Laboratory is as follows:

Nitrogen (per cent.)	0.0413
Potash (per cent.)	0.0091
Phosphoric Acid (per cent.)	0.1635

This is a fair average of all of the Norfolk and Portsmouth soil series of the State, which comprise by far the greater portion of the State.

In this connection we quote from the report of the Indiana Agricultural Experiment Station, Purdue University, Lafayette, Ind., 1908, as follows:

"SOIL ANALYSIS OF LITTLE VALUE IN SHOWING FERTILIZER REQUIREMENTS.—The Chemical Department is called upon to answer hundreds of letters of inquiry in relation to agricultural chemical problems from people all over the State. In this connection it might be well to say that there is a widespread idea that the chemist can analyze a sample of soil and, without further knowledge of the conditions, write out a prescription of a fertilizer which will fill the needs of that particular soil.

"The Experiment Station does not analyze samples of soil to determine the fertilizer requirements. There is no chemical method known that will show reliably the availability of the plant food elements present in the soil, as this is a variable factor, influenced by the kind of crop, the type of soil, the climate and biological conditions; hence, we do not recommend this method of testing soil."

The method recommended by the Indiana Station is the field fertilizer test or plot system, in which long, narrow strips of the field to be tested are measured off side by side. The crop is planted uniformly over each. Different fertilizers are applied to the different plots, every third or fourth one being left unfertilized. The produce from these plots is harvested separately and weighed. In this manner the farmer can tell what fertilizer is best suited for his needs. As climatic conditions may influence the yield with different fertilizers, it is best to carry on such tests for more than one year before drawing definite conclusions. There is positively no easier or shorter method of testing the soil that we feel safe in recommending.

Soil can be greatly improved by an intelligent rotation of crops, the conservation of stable manure, and the use of some kind of commercial fertilizer. Farmers need have no fear that the proper application of commercial fertilizer will injure the land.

WATER ANALYSIS.

We frequently analyze water for public use—city, town and neighborhood supplies; springs and artesian wells in which the public is interested; when some economic question, boiler, laundry or other industrial use is to be decided.

WE DO NOT ANALYZE WATER FOR INDIVIDUAL ACCOUNT WHEREIN THE PUBLIC IS NOT INTERESTED. SUCH SAMPLES SHOULD BE SENT TO A COMMERCIAL LABORATORY. THE STATE LABORATORY DOES NOT COMPETE WITH COMMERCIAL LABORATORIES.

Also we do not make bacteriological examinations nor examinations for disease germs. Such examinations and

analyses are made by the State Board of Health at Jacksonville.

We do not make a sanitary analysis, nor a complete quantitative determination (separating each mineral and stating the quantity thereof).

Such an analysis would be costly in time and labor, and of no real value to the inquirer. We determine the total dissolved solids in the sample, and report them as parts per 1,000,000, naming the principal ingredients in the order of their predominance.

We find Calcium Carbonate (lime), Sodium Chloride (salt), Magnesium Sulphate (epsom salts), Silica (sand), and Iron, in the general order of their predominance, though on the coast, where the total dissolved solids amounts to 5,000 or more parts per 1,000,000, Sodium Chloride (salt) is the predominant substance.

From a knowledge of the chemical analysis of a water, unaccompanied by any further information, no conclusion as to the potability and healthfulness of the water can be deduced.

Therefore, we require the following information to be given in regard to the source of the water

(1). The source of the water: spring, lake, river, driven well, dug well, bored well, artesian well, or flowing well; and also the depth of the water surface below the top of the soil, and in cased wells the depth of the casing.

(2). The locality of the source of the water: town, city or village; or the section, township and range.

(3). The proposed use of the water; city supply, domestic use, laundry, boiler, irrigation or other industrial use.

(4). No sample of water will be analyzed unless the name and address of the sender is on the package for identification.

We require two gallons of each sample of water, in a

new jug, stopped with a new cork, and sent by prepaid express. We will not accept any sample of water for analysis not in a new jug. Vessels previously used for other purposes are never properly cleaned for sending samples of water for analysis. Corks, once used for other substances (molasses, vinegar, whiskey, kerosene, etc.), are never properly cleaned. In sampling a well water, the stagnant water in the pump must first be pumped off. The jug must first be rinsed with the water to be sampled, emptied, and then filled. A sample of spring, river or lake water is best taken (after rinsing the jug), by allowing the jug to fill after immersion some distance under the surface near the center of the body of water.

NOTE.—We find the waters of the State—springs, wells, driven wells and artesian wells—generally very pure and wholesome, with but little mineral impurity and that such as is not harmful. Except in cases of gross carelessness, in allowing surface water to contaminate the well or spring, the waters of the State are pure and wholesome. The deep wells of the State are noted for their purity and healthfulness.

ANALYSIS OF FOODS AND DRUGS.

Samples of Foods and Drugs are drawn under special regulations. Application should be made to the Commissioner of Agriculture or State Chemist for the necessary blanks, instructions, etc., for drawing and transmitting samples of foods and drugs, including drinks of all kinds.

COPIES OF LAWS, RULES AND REGULATIONS, AND STANDARDS.

Citizens of the State interested in fertilizers, foods and drugs, and stock feed, can obtain, free of charge, the respective Laws, including Rules and Regulations and

Standards, by applying to the Commissioner of Agriculture or State Chemist. Application for the Quarterly Bulletin of the State Department of Agriculture should also be made to the Commissioner of Agriculture or State Chemist. The Bulletins of the Florida Agricultural Experiment Station can be had by application to the Director at Gainesville.

INSTRUCTIONS TO MANUFACTURERS AND DEALERS.

Each package of Commercial Fertilizer, and each package of Commercial Feeding Stuff, must have, securely attached thereto, a tag with the guaranteed analysis required by law and the stamp showing the payment of the inspector's fee. This provision of the law, Section 3 of both laws—will be rigidly enforced.

Manufacturers and dealers will be required to properly tag and stamp each package of Commercial Fertilizer or Commercial Feeding Stuff under penalty as fixed in Section 6 of both laws. Tags shall be attached to the top end of each bag, or head of each barrel.

INSTRUCTIONS TO PURCHASERS.

Purchasers are cautioned to purchase no Commercial Fertilizers or Commercial Feeding Stuff that does not bear on *each package* an analysis tag with the guarantee required by law, and the stamp showing the payment of the inspector's fee. Goods not having the guarantee tag and stamp are irregular and fraudulent; the absence of the guarantee and stamp being evidence that the manufacturer or dealer has not complied with the law. Without the guarantee tag and stamp showing what the goods are guaranteed to contain, the purchaser has no recourse

against the manufacturer or dealer. Such goods are sold illegally and fraudulently, and are generally of little value. All reputable manufacturers and dealers now comply strictly with the law and regulations by placing the guarantee tag and stamp on each package.

INSTRUCTIONS TO SHERIFFS.

The attention of Sheriffs of the various counties is called to Section 3 of both laws, defining their duties. This Department expects each Sheriff to assist in maintaining the law and protecting the citizens of the State from the imposition of fraudulent, inferior or deficient Commercial Fertilizers or Commercial Feeding Stuffs.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT FLORIDA SEA PORTS, JANUARY 1, 1913.

AMMONIATES.

Nitrate of Soda, 17% Ammonia.....	\$ 62.00
Sulphate of Ammonia, 20% Ammonia	77.00
Dried Blood, 16% Ammonia	60.00
Cyanamid, 18% Ammonia	60.00
Dry Fish Scrap, 10% Ammonia	45.00

POTASH.

High Grade Sulphate of Potash, 90% Sulphate, 48% K ₂ O	\$ 50.00
Low Grade Sulphate of Potash, 48% Sulphate, 26% K ₂ O	30.00
Muriate of Potash, 80%; 48% K ₂ O.....	48.00

Nitrate of Potash, imported, 16% Ammonia, 46% Potash K ₂ O	120.00
Nitrate of Potash, American, 13% Ammonia, 42% Potash K ₂ O	100.00
Kainit, Potash, 12% K ₂ O	13.00
Canada Hardwood Ashes, in bags, 4% K ₂ O Pot- ash	19.00

AMMONIA AND PHOSPHORIC ACID.

Water Soluble Tankage, 15% Ammonia,	\$ 52.00
High Grade Tankage, 10% Ammonia, 3½% Phos- phoric Acid	\$ 40.00
Tankage, 8% Ammonia, 10% Phosphoric Acid..	37.00
Low Grade Tankage, 6½% Ammonia, 12% Phos- phoric Acid	33.00
Hotel Tankage, 6% Ammonia, 7% Phosphoric Acid	28.00
Sheep Manure, ground, 3% Ammonia	24.00
Imported Fish Guano, 12% Ammonia, 12% Phos- phoric Acid	52.00
Pure Fine Steamed Ground Bone, 3% Ammonia, 22% Phosphoric Acid	31.00
Raw Bone, 4% Ammonia, 22% Phosphoric Acid.	35.00
Ground Castor Pomace, 5½% Ammonia, 2% Phos- phoric Acid	26.00
Bright Cotton Seed Meal, 7½% Ammonia	28.00
Dark Cotton Seed Meal, 4½% Ammonia	26.00

PHOSPHORIC ACID.

High Grade Acid Phosphate, 16% Available Phosphoric Acid	\$ 15.00
Acid Phosphate, 14% Available Phosphoric Acid	14.00
Bone Black, 17% Available Phosphoric Acid...	25.00

MISCELLANEOUS.

High Grade Ground Tobacco Stems, 2% Ammonia, 8% Potash	\$ 24.00
High Grade Ground Kentucky Tobacco Stems, 2½% Ammonia, 10% Potash	28.00
Tobacco Dust No. 1, 2% Ammonia, 2% Potash	25.00
Cut Tobacco Stems, in sacks, 2% Ammonia, 4% Potash	20.00
Dark Tobacco Stems, baled, 2% Ammonia, 4% Potash	19.00
Land Plaster, in sacks	12.00

The charges by reputable manufacturers for mixing and bagging any special or regular formula are \$1.50 per ton in excess of above prices.

NEW YORK WHOLESALE PRICES, CURRENT
JAN. 1, 1913--FERTILIZER MATERIALS.

Ammonia, sulphate, foreign, prompt.....	3.15	@	—
futures	3.20	@	3.25
Ammonia, sulph, domestic, spot.....	—	@	—
futures	3.20	@	3.25
Fish scrap, dried, 11 p. c. ammonia and 14 p. c. bone phosphate, f.o.b. fish works, per unit	2.00	&	10
wet, acidulated, 6 p. c. ammonia, 3 p. c. phosphoric acid delivered...	2.50	&	35
Ground fish guano, imported, 10 and 11 p. c. ammonia and 15-17 p. c. bone phosphate, c. i. f. N. Y., Balto. or Phila.....	3.10	&	10
Tankage, concentrated, f.o.b. Chicago, 14 to 15 per cent., f.o.b. Chicago.....	2.40	&	10
Tankage, 11 p. c. and 15 p. c. f.o.b. Chicago	2.70	&	10
Tankage, 10 and 20 p. c., f.o.b. Chicago ground	2.30	&	10

Tankage, 9 and 20 p. c., f.o.b. Chicago ground	2.30	&	10
Garbage, tankage, f.o.b. Chicago	9.00	@	—
Sheep manure, concentrated, f.o.b. Chi- cago, per ton	10.00	@	—
Hoefmeal, f.o.b. Chicago, per unit	2.60	@	2.70
Dried blood, 12-13 p. c. ammonia f.o.b. New York	2.75	@	—
Chicago	2.60	@	—
Nitrate of soda, 95 p. c. spot, per 100 lbs.. futures, 95 p. c.	2.55	@	—
	2.57 ¹ / ₂	@	—
Acid phosphate, per unit	50	@	55
Bones, rough, hard, per ton	22.50	@	24.00
ground, steamed, 1 ¹ / ₄ p. c. ammonia and 60 p. c. bone phosphate	20.00	@	21.00
ditto, 3 and 60 p. c.	23.50	@	24.00
raw ground, 4 p. c. ammonia and 50 p. c. bone phosphate	28.50	@	30.00
South Carolina phosphate rock, kiln dried f.o.b. Ashley River	3.50	@	3.75
Florida land pebble phosphate rock, 68 per cent., f.o.b. Port Tampa, Fla.	3.70	@	3.80
Florida high grade phosphate hard rock 77 per cent., f.o.b. Florida ports	5.75	@	6.25
Tennessee phosphate rock, f.o.b. Mt. Pleas- ant, domestic, 78@80 p. c., per ton.	5.00	@	5.50
75 p. c. guaranteed	4.75	@	5.00
68@72 p. c.	4.25	@	4.50

POTASHES.

Muriate of potash, 80-85 per cent., basis 80 per cent., in bags	38.55	@	—
Muriate of potash, min. 95 per cent., basis 80 per cent., in bags	40.15	@	—
Muriate of potash, min. 98 per cent., basis 80 per cent., in bags.	41.00	@	—

Sulphate of potash, 90-95 per cent., basis			
90 per cent., in bags	46.80	@	—
Double manure salt, 48.53 per cent., basis			
48 per cent., in bags	24.95	@	—
Manure salt, min. 20 per cent., K ₂ O, in bulk	13.50	@	—
Hardsalt, min. 16 per cent., K ₂ O, in bulk..	10.85	@	—
Kainit, min. 12.4 per cent., K ₂ O, in bulk.	8.45	@	—

STATE VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash, for the Season of 1913.

Available Phosphoric Acid	5c	a pound
Insoluble Phosphoric Acid	1c	a pound
Ammonia (or its equivalent in nitrogen) ..	17½c.	a pound
Potash (as actual potash, K ₂ O)	5¼c	a pound

If calculated by units—

Available Phosphoric Acid	\$1.00	per unit
Insoluble Phosphoric Acid	20c	per unit
Ammonia (or its equivalent in nitrogen) ..	3.50	per unit
Potash	1.10	per unit

With a uniform allowance of \$1.50 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent., in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this, take for example a fertilizer which analyzes as follows:

Available Phosphoric Acid...6.22 per cent.x\$1.00—	\$ 6.22
Insoluble Phosphoric Acid...1.50 per cent.x .20—	30
Ammonia	3.42 per cent.x 3.50— 11.97
Potash	7.23 per cent.x 1.10— 7.95
Mixing and Baging	— 1.50

Commercial value at sea ports

\$27.94

Or a fertilizer analyzing as follows:

Available Phosphoric Acid.....	8 per cent.x\$1.00—	\$ 8.00
Ammonia	2 per cent.x 3.50—	7.00
Potash	2 per cent.x 1.10—	2.20
Mixing and Bagging	—	1.50
		—————
Commercial value at sea ports		\$18.70

The State valuations are for cash for materials delivered at Florida seaports, and they can be bought in one-ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

The valuations and market prices in preceding illustrations are based on market prices for one-ton lots.

STATE VALUES.

It is not intended by the "State valuation" to fix the price or commercial value of a given brand. The "State values" are the market prices for the various approved chemicals and materials used in mixing or manufacturing commercial fertilizers or commercial stock feed at the date of issuing a Bulletin, or the opening of the "season." They may, but seldom do, vary from the market prices, and are made liberal to meet any slight advance or decline.

They are compiled from price lists and commercial reports by reputable dealers and journals.

The question is frequently asked: "What is 'Smith's Fruit and Vine' worth per ton?" Such a question cannot be answered categorically. By analysis, the ammonia, available phosphoric acid and potash may be determined and the inquirer informed what the cost of the necessary material to compound to a ton of goods similar to "Smith's Fruit and Vine" would be, using none but accepted and well known materials of the best quality.

State values do not consider "trade secrets," loss on bad bills, cost of advertisements and expenses of collections. The "State value" is simply that price at which the various ingredients necessary to use in compounding a fertilizer, or feed, can be *purchased for cash in ton lots at Florida seaports.*

These price lists are published in this report, with the "State values" for 1913 deducted therefrom.

COMPOSITION OF FERTILIZER MATERIALS.
NITROGENOUS MATERIALS.

	POUNDS PER HUNDRED		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda.....	17 to 19	.....	.....
Sulphate of Ammonia....	21 to 24	.....	.....
Dried Blood	12 to 17	.....	.....
Concentrated Tankage...	12 to 15	1 to 2	.....
Bone Tankage	6 to 9	10 to 15	.....
Dried Fish Scrap.....	8 to 11	6 to 8	.....
Cotton Seed Meal.....	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	.....

PHOSPHATE MATERIALS.

	POUNDS PER HUNDRED		
	Ammonia	Available Phos. Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphate.....	.....	.....	26 to 32
Florida Rock Phosphate..	.....	.....	33 to 35
Florida Super Phosphate.....	.....	1½ to 4½	1 to 35
Ground Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	3 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES.

	POUNDS PER HUNDRED			
	Actual Potash	Ammonia	Phosphoric Acid	Lime
Muriate of Potash.....	50	.....	.....	.....
Sulphate of Potash....	48 to 52	.....	.....	.....
Carbonate of Potash...	55 to 60	.....	.....	.....
Nitrate of Potash.....	40 to 44	12 to 16	.....	.....
Double Sul. of Pot. & Mag	26 to 30	.....	.....	.....
Kainit	12 to 12½	.....	.....	.....
Sylvinit	16 to 20	.....	.....	.....
Cotton Seed Hull Ashes	15 to 30	.....	7 to 9	10
Wood Ashes, unleached..	2 to 8	.....	1 to 2	.....
Wood Ashes, leached...	1 to 2	.....	1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4	.....	3½
Cow Manure (fresh)...	0.40	0 to 0.41	0.16	0.31
Horse Manure (fresh)...	0.53	0 to 0.60	0.28	0.31
Sheep Manure (fresh)...	0.67	1.00	0.19	0.32
Hog Manure (fresh)...	0.60	0.55	0.19	0.08
Hen Dung (fresh).....	0.85	2.07	1.54	0.24
Mixed Stable Manure..	0.63	0.76	0.26	0.70

FACTORS FOR CONVERSION.

To convert—

Ammonia into nitrogen, multiply by.....	0.824
Ammonia into protein, multiply by.....	5.15
Nitrogen into ammonia, multiply by.....	1.214
Nitrate of soda into nitrogen, multiply by.....	0.1647
Nitrogen into protein, multiply by.....	6.25
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric acid into bone phosphate, multiply by	2.184
Muriate of potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.41
Actual potash into sulphate of potash, multiply by	1.85
Nitrate of potash into nitrogen, multiply by.....	0.139
Carbonate of potash into actual potash, multiply by	0.681
Actual potash into carbonate of potash, multiply by	1.466
Chlorine, in "kainit," multiply potash (K_2O) by....	2.33

For instance, you buy 95 per cent. of nitrate of soda and want to know how much nitrogen is in it, multiply 95 per cent. by 0.1647, you will get 15.65 per cent. nitrogen; you want to know how much ammonia this nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

Or, to convert 90 per cent. carbonate of potash into actual potash (K_2O), multiply 90 by 0.681, equals 61.29 per cent, actual potash (K_2O).

COPIES OF THE FERTILIZER, STOCK FEED AND
PURE FOOD AND DRUG LAWS.

Copies of the Laws, Regulations and Standards will be furnished by the Commissioner of Agriculture on application.

AVERAGE COMPOSITION OF COMMERCIAL
FEED STUFFS.

NAME OF FEED.	Crude Fiber.	Protein.	Starch and Sugar.	Fat.	Ash.
Bright Cot'n Seed Meal	9.35	39.70	28.60	7.80	5.80
Dark Cotton Seed Meal	20.00	22.90	37.10	5.50	5.00
Linseed Meal, old process	7.50	35.70	36.00	7.20	5.30
Linseed Meal, new process	8.40	36.10	36.70	3.60	5.20
Wheat Bran	9.00	15.40	53.90	4.00	5.80
Wheat Middlings	5.40	15.40	59.40	4.10	3.20
Mixed Feed (Wheat)	7.80	16.90	54.40	4.80	5.30
Ship Stuff (Wheat)	5.60	14.60	59.80	5.00	3.70
Corn (grain)	2.10	10.50	69.60	5.40	1.50
Corn Meal	1.90	9.70	68.70	3.80	1.40
Corn Cobs	30.10	2.40	54.90	0.50	1.40
Corn and Cob Meal	6.60	8.50	64.80	3.50	1.50
Hominy Feed	4.05	10.50	65.30	7.85	2.55
Corn and Oats, equal parts	5.80	11.15	64.65	5.20	2.25
Corn and Oats Feeds	12.10	8.70	61.70	3.70	3.20
Barley (grain)	2.70	12.40	69.80	1.80	2.40
Barley and Oats, equal parts	6.10	12.10	64.75	3.40	2.70

AVERAGE COMPOSITION OF COMMERCIAL
FEED STUFFS—(Continued.)

NAME OF FEED.	Crude Fiber.	Protein.	Starch and Sugar.	Fat.	Ash.
Oats (grain)	9.50	11.80	59.70	5.00	3.00
Oat Feed	6.10	16.00	54.90	7.10	3.70
Rice (grain)	0.20	7.40	79.20	0.40	0.40
Rice Bran	9.50	12.10	49.90	8.80	10.60
Rice Hulls	35.70	3.60	38.60	0.70	13.20
Wheat (grain)	1.80	11.90	71.90	2.10	1.80
Dry Jap Sugar Cane.....	26.22	2.28	62.55	1.55	2.77
Cow Pea	4.10	20.80	55.70	1.40	3.20
Cow Pea Hay	20.10	16.60	42.20	2.20	7.50
Velvet Bean Hulls.....	27.02	7.46	44.56	1.57	4.32
Velvet Beans and Hulls	9.20	19.70	51.30	4.50	3.30
Velvet Bean Hay.....	29.70	14.70	41.00	1.70	5.70
Beggarweed Hay	24.70	21.70	30.20	2.30	10.90
Japanese Kudzu Hay.....	32.14	17.43	30.20	1.67	6.87
Cotton Seed (whole) ...	23.20	18.40	24.70	19.90	3.50
Cotton Seed Hulls	44.40	4.00	36.60	2.00	2.60
Gluten Feed	5.30	24.00	51.20	10.60	1.10
Beef Scrap		44.70	3.28	14.75	29.20

FORMULAS.

There are frequent inquiries for formulas for various crops, and there are hundreds of such formulas published; and, while there are hundreds of "brands," the variations in these grades are surprisingly little. Dozens of "brands" put up by the same manufacturer are identical goods, the only difference being in the name printed on the tag or sack. A good general formula for field or garden might be called a "vegetable formula," and would have the following: Ammonia, $3\frac{1}{2}\%$; available phosphoric acid, $6\frac{1}{2}\%$; and potash, $7\frac{1}{2}\%$. The following formulas will furnish the necessary plant food in about the above proportion. I have purposely avoided the use of any fraction of 100 pounds in these formulas to simplify them. Values are taken from price lists furnished by the trade, January 1, 1912.

For cotton, corn, sweet potatoes and vegetables: Ammonia, $3\frac{1}{2}\%$; available phosphoric acid, $6\frac{1}{2}\%$; potash, $7\frac{1}{2}\%$.

(A) "VEGETABLE."

No. 1.

	Per Cent.
900 pounds of Cotton Seed Meal ($7\frac{1}{2}$ - $2\frac{1}{2}$ - $1\frac{1}{2}$).....	3.25 Ammonia
800 pounds of Acid Phosphate (16 per cent)....	6.46 Available
300 pounds of Muriate or (Sulphate) (50 per cent)	7.50 Potash
<hr/>	
2,000	
State value mixed and bagged.....	\$27.52
Plant Food per ton.....	343 pounds

No. 2.

	Per Cent.
1,000 lbs. of Blood and Bone ($6\frac{1}{2}$ -8).....	3.25 Ammonia
400 lbs. of Acid Phosphate (16 per cent).....	7.90 Available
600 lbs. of Low Grade Sulp. Pot. (20 per cent)	7.50 Potash
<hr/>	
2,000	
State value mixed and bagged.....	\$28.45
Plant Food per ton.....	390 pounds

No. 3.

	Per Cent.
300 lbs. of Dried Blood (16 per cent).....	} 3.25 Ammonia 8.00 Available 7.80 Potash
100 lbs. of Nitrate of Soda (17 per cent).....	
1,000 lbs. of Acid Phosphate (16 per cent).....	
600 lbs. of Low Grade Sulph. Pot. (26 per cent)	
<hr/> 2,000	
State value mixed and bagged.....	\$29.45
Plant Food per ton.....	381 pounds

(B) "FRUIT AND WINE."

No. 1.

Fruits, Melons, Strawberries, Irish Potatoes; Ammonia, 4 per cent., Available Phosphoric Acid 7 per cent., Potash 10 per cent.

	Per Cent.
1,000 lbs. of Blood and Bone (6½-8).....	} 8 Available 4 Ammonia 10 Potash
400 lbs. of Muriate of Potash (50 per cent).....	
500 lbs. of Acid Phosphate (16 per cent).....	
100 lbs. of Nitrate of Soda (17 per cent).....	
<hr/> 2,000	
State value mixed and bagged.....	\$34.50
Plant Food per ton.....	440 pounds

No. 2.

	Per Cent.
500 lbs. of Castor Pomace (6-2 per cent)....	} 4.00 Ammonia 7.70 Available 9.60 Potash
200 lbs. of Sulph. of Am. (25 per cent).....	
900 lbs. of Acid Phosphate (16 per cent).....	
400 lbs. of Sulph. of Pot. (48 per cent).....	
<hr/> 2,000	
State value mixed and bagged.....	\$33.76
Plant Food per ton.....	428 pounds

No. 3.

	Per Cent.
500 lbs. of Cotton Seed Meal (7½-2½-1½).....	} 3.97 Ammonia 8.30 Available 8.97 Potash
100 lbs. of Nitrate of Soda (17 per cent).....	
100 lbs. of Sulph. of Am. (25 per cent).....	
900 lbs. of Acid Phosphate (16 per cent).....	
400 lbs. of Sulph. of Potash (48 per cent).....	
<hr/> 2,000	
State value mixed and bagged.....	\$33.56
Plant Food per ton.....	425 pounds

COMMERCIAL STATE VALUES OF FEED STUFFS FOR 1913.

For the season of 1913 the following "State values" are fixed as a guide to purchasers.

These values are based on the current prices of corn, which has been chosen as a standard in fixing the commercial values; the price of corn, to a large extent, governing the price of other feeds, pork, beef, etc.:

COMMERCIAL VALUES OF FEED STUFFS FOR 1913.

Protein, 3.4c. per pound	68c. per unit
Starch and Sugar, 1.1c. per pound	22c. per unit
Fats, 2.5c. per pound	50c. per unit

A unit being 20 pounds (1%) of a ton.

Indian corn being the standard @\$25.00 per ton.

To find the commercial State value, multiply the percentages by the price per unit.

EXAMPLE No. 1.

CORN AND OATS, EQUAL PARTS—

Protein	11.15 x	68c.	8	7.58
Starch and Sugar	64.65 x	22c.		\$14.22
Fat	5.20 x	50c.		2.70
				\$24.50
State value per ton				

EXAMPLE No. 2.

Protein	10.50 x	68c.	8	7.14
Starch and Sugar	69.60 x	22c.		15.31
Fat	5.40 x	50c.		2.70
				\$25.15
State value per ton				

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FERTILIZER SECTION.

R. E. ROSE, State Chemist.

SPECIAL FERTILIZER ANALYSES, 1912.

L. HEIMBURGER, Asst. Chemist.

Samples taken by Purchaser Under Section 2, Act Approved May 22, 1901.

NAME, OR BRAND.	Laboratory Number.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fertilizer No. 1.....	2704	4.45	5.54	0.25	5.79	5.15	4.25	Armour Fertilizer Works, Jacksonville.
Fertilizer No. 2.....	2705	3.86	5.35	0.14	5.49	3.56	4.91	Armour Fertilizer Works, Jacksonville.
Fertilizer No. 3.....	2706	4.24	5.97	0.42	6.45	4.62	12.27	Armour Fertilizer Works, Jacksonville.
Fertilizer No. 4.....	2707	7.96	7.71	0.42	8.13	5.24	3.25	Armour Fertilizer Works, Jacksonville.
Fertilizer No. 1.....	2708	7.58	6.88	1.16	7.96	4.52	4.92	Lee E. Cole, Hastings.
Fertilizer No. 2.....	2709	9.04	8.56	0.51	9.07	5.89	4.67	Lee E. Cole, Hastings.
Fertilizer No. 1.....	2710	9.54	5.94	1.56	7.50	4.17	8.16	Chas. C. Spence, Miami.
No. 2 (Akers).....	2711						3.43	Chas. C. Spence, Miami.
Fertilizer No. 3.....	2712	8.22	5.49	2.22	7.71	5.71	7.25	Chas. C. Spence, Miami.
Fertilizer.....	2713	7.29	6.68	1.46	8.09	4.66	4.72	H. H. Cook, Hastings.
Fertilizer.....	2714	4.23	5.55	1.22	6.77	4.27	11.22	Florida Fertilizer Co., Gainesville.
Fertilizer.....	2715	7.66	6.16	1.52	7.67	5.52	5.64	T. H. Cook, Hastings.
Fertilizer.....	2716	9.12	7.55	4.44	12.01	5.25	7.62	Francis Agor, Jr., Austin.
Fertilizer No. 1.....	2717	8.13	7.97	4.82	11.82	1.62	9.81	J. H. Haskins, City.
Fertilizer No. 2.....	2718	8.88	8.58	5.12	6.29	6.28	5.78	J. H. Haskins, City.
Fertilizer No. 3.....	2719	11.63	8.16	2.58	9.74	4.91	3.67	J. H. Haskins, City.

Fertilizer	2720	7.65	4.75	1.50	6.25	6.25	8.49	B. J. Pier, Sanford.
Fertilizer	2721	6.71	8.39	6.27	8.67	4.86	12.14	D. F. Pailishall, Geneva.
Fertilizer	2722	3.94	6.75	1.31	7.94	6.56	8.67	W. N. Kendall, Arcadia.
Fertilizer	2723	6.35	7.92	6.84	8.78	4.57	12.67	H. C. Dean, Tallahassee.
Fertilizer	2724	4.77	6.84	1.06	7.94	4.23	4.84	K. K. Richardson, Arcadia.
Fertilizer	2725	6.53	7.05	0.12	7.17	5.07	8.12	Tonney & Son, Federal Point.
Fertilizer No. 1	2726	8.82	4.70	9.62	4.77	4.90	6.71	Christian & Dickson, Melrose.
Fertilizer No. 2	2727	.....	5.78	0.12	5.96	3.72	8.24	Christian & Dickson, Melrose.
Fertilizer	2728	8.33	6.42	1.82	8.24	4.64	4.25	B. J. Pier, Sanford.
Potash No. 1	2729	.....	.....	.....	.....	.....	14.78	J. E. Dubuison & Bro., Pensacola.
Potash No. 2	2730	.....	.....	.....	.....	.....	24.78	J. E. Dubuison & Bro., Pensacola.
Fertilizer	2731	26.61	6.25	1.88	7.33	4.63	5.54	F. C. Kramer, Astor Park.
Fertilizer	2732	.....	4.64	6.46	5.30	3.04	8.37	M. O. Barron, Bell.
Fertilizer	2733	26.46	6.54	1.26	11.15	4.24	6.65	J. P. Conway, Crescent City.
Fertilizer	2734	.....	3.86	6.60	26.46	6.46	7.97	G. M. Wakulla, Taverna.
Fertilizer	2735	4.57	8.22	6.62	8.84	5.22	12.22	H. C. Dean, Tallahassee.
Fertilizer	2736	5.12	5.98	6.52	7.25	9.42	12.27	Independent Fertil. Co., Jacksonville.
Cotton Seed Meal	2737	.....	.....	.....	.....	8.29	.....	Palmer Sylvester, Ilwaco.
Cotton Seed Meal No. 1	2738	.....	.....	.....	.....	7.88	.....	Lake Jackson Tobacco Growing Co., Lake Jackson.
Cotton Seed Meal No. 2	2739	.....	.....	.....	.....	7.81	.....	Lake Jackson Tobacco Growing Co., Lake Jackson.
Cotton Seed Meal No. 3	2740	.....	.....	.....	.....	7.50	.....	Lake Jackson Tobacco Growing Co., Lake Jackson.
Cotton Seed Meal No. 4	2741	.....	.....	.....	.....	8.10	.....	Lake Jackson Tobacco Growing Co., Lake Jackson.
Fertilizer	2742	5.66	.....	.....	4.81	4.14	5.46	C. S. Hicky, Ft. Pierce.
Fertilizer	2743	12.47	6.64	6.42	7.66	3.94	5.26	H. Robbins, Arch Creek.
Fertilizer No. 1	2744	8.42	2.82	6.59	3.32	6.88	4.21	J. K. Christian, Melrose.
Fertilizer No. 2	2745	6.67	5.76	6.88	5.85	5.26	5.22	J. K. Christian, Melrose.
Fertilizer No. 3	2746	8.26	6.81	6.11	6.07	3.94	7.72	J. K. Christian, Melrose.
Fertilizer No. 4	2747	8.69	6.43	6.24	6.65	3.92	7.17	J. K. Christian, Melrose.

SPECIAL FERTILIZER ANALYSES, 1913—Continued.

NAME OR BRAND.	Laboratory Number.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O).	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fertilizer	3748	9.03	10.33	0.33	10.66	4.13	6.46	J. P. Cowbars, Crescent City.
Fertilizer	3749	10.45	4.24	1.48	5.72	4.25	4.35	E. F. Bostick, Wauchois.
Asbes	3750	.....	.....	.....	.....	.....	9.35	Raymond C. Hazen, Leitchfield.
Acid Phosphate No. 1.....	3751	.....	15.47	0.78	16.25	.....	.....	J. L. Owen, Quincy.
Fertilizer No. 1.....	3752	9.03	7.36	0.37	7.73	2.57	4.67	J. L. Owen, Quincy.
Fertilizer No. 2.....	3753	.....	9.53	0.54	10.07	2.54	2.57	J. L. Owen, Quincy.
Fertilizer	3754	.....	7.65	1.65	9.30	4.36	7.55	Worth Stephens Co., Live Oak.
No. 1 (Acid Phosphate).....	3755	.....	14.70	1.12	15.82	.....	.....	H. B. Shelton Co., Quincy.
Fertilizer No. 1.....	3756	9.34	14.37	0.50	14.87	0.33	4.83	H. B. Shelton Co., Quincy.
Fertilizer No. 2.....	3757	9.58	3.34	1.43	4.77	2.70	1.43	H. B. Shelton Co., Quincy.
Fertilizer	3758	9.76	4.49	1.43	5.92	4.46	6.36	E. F. Bostick, Wauchois.
Fertilizer	3759	4.34	6.36	2.94	9.30	4.50	8.41	Hastings-Kilmer Potato Exchange, Hastings.
Fertilizer	3760	10.65	14.33	1.13	15.46	2.86	2.86	J. H. Moss, Nefflar.
Fertilizer	3761	.....	5.34	2.56	7.90	2.57	11.36	T. A. Carble, Thosville.
Fertilizer	3762	9.36	3.18	1.58	4.76	4.83	4.67	Wm. Wickman, Piedmont.
Exhibit "A" (Cotton Seed Meal).....	3763	.....	.....	.....	.....	.....	8.46	R. C. Collins, Milton.
Exhibit "B" (Cotton Seed Meal).....	3764	.....	.....	.....	.....	7.50	.....	R. C. Collins, Milton.
Exhibit "C" (Marlate Potash).....	3765	.....	.....	.....	.....	.....	52.36	R. C. Collins, Milton.

Subbit "D" (Acid Phosphate)	3760	17.33	0.72	18.35	.....	R. C. Collins, Milton.	
Fertilizer	3761	27.75	2.89	0.93	4.52	2.98	7.85 J. M. Holding, Doala.
"Muriate Potash"	3762	.....	.....	.....	.....	65.32 N. A. Gaylord, Wellborn.	
Acid Phosphate	3763	14.75	1.97	18.73	.....	N. A. Gaylord, Wellborn.	
Kainit	3764	.....	.....	.....	.....	12.83 N. A. Gaylord, Wellborn.	
Kainit	3771	.....	.....	.....	.....	12.55 S. H. Watson, Aracola.	
Fertilizer	3772	9.84	8.55	1.74	9.81	4.82	6.45 J. D. Peterson, Pierce.
Fertilizer	3773	16.45	4.52	1.19	6.02	2.89	8.88 Independent Ferts. Co., Jacksonville.
Fertilizer (Basic Slag)	3774	.....	.....	18.13	.....	.....	W. H. Tomlin, Ft. Myers.
Fertilizer	3775	.....	8.69	2.94	19.70	4.14	2.75 A. S. Wells, Tallahassee.
Fertilizer	3776	6.34	7.22	0.34	7.55	4.26	5.55 S. C. Charalbie, Coala.
Compost	3777	.....	.....	.....	9.27	0.98	0.21 F. F. Colon, Tallahassee.
Peatmoss	3778	.....	.....	.....	.....	.....	9.17 Charles Homenador, White City.
Fertilizer	3779	.....	0.65	0.72	1.37	2.82	15.71 T. H. Hammond, Orlando.
Fertilizer No. 1	3780	11.42	2.93	1.45	19.48	2.82	1.72 H. M. Smith, Holt.
Fertilizer	3781	11.78	0.65	0.69	9.45	2.97	1.94 Sherman Nichols, Holt.
Muriate of Potash No. 1	3782	.....	.....	.....	.....	Trace	T. H. Pierce, Red Bank.
Muriate of Potash No. 2	3783	.....	.....	.....	.....	.....	59.48 T. H. Pierce, Red Bank.
Acid Phosphate No. 1	3784	.....	16.55	0.22	18.33	.....	T. H. Pierce, Red Bank.
Guanco No. 1	3785	12.75	19.11	1.95	11.14	1.90	2.82 T. H. Pierce, Red Bank.
Fertilizer No. 1	3786	.....	10.22	1.25	11.70	2.55	1.72 Jackson Griffith, Cobb.
Fertilizer	3787	4.22	4.54	2.94	19.49	3.35	19.94 Mrs. A. P. Marshall, Arliss.
Fertilizer	3788	.....	2.99	1.69	7.59	2.72	7.16 C. C. Moseley, Gretna.
Fertilizer No. 1	3789	12.79	15.72	0.72	14.64	.....	J. H. Plant, Pace.
Muriate of Potash, No. 1	3790	.....	.....	.....	.....	.....	52.72 J. H. Plant, Pace.
Tobacco	3791	.....	.....	.....	.....	4.04	2.22 J. S. Warren, Manatee.
Acid Phosphate No. 1	3792	.....	14.22	1.42	17.67	.....	A. N. Jones, Jay.
Fertilizer No. 2	3793	16.79	9.49	2.17	12.64	2.29	1.23 A. N. Jones, Jay.
Fertilizer No. 1	3794	15.79	8.13	1.68	9.81	2.14	2.25 W. J. Wilkerson, Glendale.
Fertilizer No. 2	3795	12.49	19.40	1.42	17.82	2.10	1.80 W. J. Wilkerson, Glendale.
Fertilizer	3796	15.30	11.67	1.14	12.21	1.68	1.89 L. Adams, Glendale.
Fertilizer	3797	9.11	4.60	1.14	6.79	4.41	8.42 A. L. Hearn, Gulf.

SPECIAL FERTILIZER ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O).	BY WHOM SENT.
			Available.	Total.	Insoluble.			
Muriate of Potash.....	2784	.....	.....	.....	.....	52.64	W. F. Jones, Pace.
Fertilizer.....	2788	19.18	8.58	1.45	8.79	2.58	W. F. Jones, Pace.	
Fertilizer.....	2800	9.88	8.53	0.71	9.24	4.61	C. L. Jopson, St. Andrews.	
Nitrate Soda No. 1.....	2891	.....	.....	.....	.....	19.11	T. Donnelly, Indiana.
Fertilizer No. 2.....	2892	2.41	5.82	0.29	14.25	4.54	T. Donnelly, Indiana.	
Fertilizer.....	2903	.....	7.84	2.22	10.10	12.37	A. I. Wilson Co., Quincy.
Fertilizer.....	2904	.....	9.45	0.59	8.24	1.63	A. F. Thomas, Ottumwa.
Fertilizer.....	2908	.....	6.52	1.91	7.63	3.74	Johnnie Houghland, Astor Park.
Fertilizer No. 1.....	2909	12.50	9.47	2.40	11.93	2.16	L. C. Bowman, Mt. David.	
Acid Phosphate No. 2.....	2997	.....	15.41	2.57	18.04	.....	L. C. Bowman, Mt. David.
Fertilizer.....	2998	12.56	11.78	1.94	12.80	2.22	Nash Allen, Greenville.	
Guanos No. 1.....	2999	26.27	12.67	3.14	16.77	7.25	M. W. Garrott, Tampa.	
Guanos No. 2.....	3010	22.28	12.49	4.21	17.21	5.63	M. W. Garrott, Tampa.	
Fertilizer.....	3011	.....	10.67	0.86	11.75	2.27	G. W. Kinross, Galliver.
Fertilizer.....	3012	.....	9.49	2.22	11.45	1.69	W. Reeves, Galliver.
Fertilizer.....	3013	12.59	9.15	0.48	9.63	2.12	L. P. Kinross, Galliver.	
Fertilizer.....	3014	12.91	8.25	0.41	9.19	2.50	J. L. Kinross, Galliver.	
Nitrate Soda.....	3015	.....	.....	.....	.....	18.78	J. L. Kinross, Galliver.
Fertilizer.....	3016	16.75	10.05	1.72	12.52	1.88	J. W. Kibola, Jay.	
Fertilizer.....	3017	12.55	8.80	0.67	11.52	1.91	Howard & Kennedy, Terra Alta.	

Fertilizer	2815	5.94	6.23	3.75	3.48	4.69	7.78	E. B. Brown, Sanford.
Fertilizer No. 1	2819		7.79	6.41	8.49	2.32	4.17	W. M. Hawkins, Berrydale.
Fertilizer	2820		6.95	6.29	7.34	2.35	2.42	D. D. Martin, Okahite.
Fertilizer No. 1	2821	12.29	21.52	1.92	12.46	2.63	1.42	J. W. Kelly, Okahite.
Fertilizer No. 2	2822	12.45	9.88	1.94	13.92	2.94	1.94	J. W. Kelly, Okahite.
Fertilizer	2823	12.97	9.69	1.95	11.84	2.71	1.71	Charlie Foster, Okahite.
Fertilizer	2824	12.79	8.42	1.11	9.52	1.99	1.57	A. J. Glover, Milton.
Guano	2825		12.72	9.87	17.29	6.51	1.45	R. K. Guano, Wall Springs.
Acid Phosphate	2826		16.92	9.62	17.44			S. C. Collins, Milton.
Fertilizer No. 1	2827	9.12	6.77	2.92	4.99	4.42	4.92	H. S. Hampton, Tampa.
Fertilizer No. 2	2828	5.15	7.79	2.43	11.29	4.59	10.79	H. S. Hampton, Tampa.
Fertilizer No. 3	2829	5.99	7.42	1.85	9.07	2.45	12.74	H. S. Hampton, Tampa.
Sea Bird Guano No. 1	2830		14.99	6.29	21.29	6.71	1.42	L. Robert Wood, Tampa.
Sea Bird Guano No. 2	2831		14.16	5.49	19.65	5.17	1.14	L. Robert Wood, Tampa.
Acid Phosphate	2832		16.94	1.95	18.91			J. M. Hamilton, Milton.
Fertilizer No. 1	2833	15.14	6.61	6.99	7.59	4.17	4.29	J. Clark, Greenboro.
Fertilizer	2834	7.17	7.94	2.34	11.25	4.29	7.85	Drew Williams, Milledgeville.
Fertilizer No. 1	2835	9.59	6.69	2.37	8.97	2.34	2.23	W. C. Cromarrie, Beachton, Ga.
Fertilizer No. 2	2836	10.79	8.45	1.29	9.74	2.19	1.47	W. C. Cromarrie, Beachton, Ga.
Fertilizer	2837		5.97	6.45	4.29	1.85	1.67	Frank Powell, Garden City.
Sea-Bird Guano	2838		14.15	5.54	19.69	5.94	1.49	L. Ferguson & Co., Tarpon Springs.
Tobacco	2839					2.49		United Grocery Co., Jacksonville.
Fertilizer	2840		7.92	6.95	8.97	2.82	2.49	A. M. Anderson, Oretna.
Fish Scrap	2841				4.84	12.49		E. B. Brown, Sanford.
Fertilizer No. 1	2842	8.45	5.72	2.79	8.45	2.39	2.51	Armour Fertilizer Works, Jacksonville
Fertilizer No. 2	2843	8.25	2.91	1.29	7.25	2.49	10.29	Armour Fertilizer Works, Jacksonville
Fertilizer No. 3	2844	7.82	5.72	1.65	7.25	4.77	8.29	Armour Fertilizer Works, Jacksonville
Fertilizer No. 4	2845	4.17	8.14	6.84	8.99	2.81	10.59	Armour Fertilizer Works, Jacksonville
Fertilizer	2846	14.22	9.44	1.79	11.22	2.21	2.94	H. Mathews, Canler.
Fertilizer	2847		4.15	1.25	5.79	2.49	7.52	H. A. Martin, Dallas.
Acid Phosphate	2848		12.92	9.32	14.44			J. P. Waddell, Okahite.
Fertilizer No. 1	2849	17.87	11.45	6.60	12.62	1.72	2.49	J. M. Natta, Berrydale.

SPECIAL FERTILIZER ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM SENT.
			Available.	Insoluble.				
Fertilizer No. 2.....	2856	12.66	9.56	0.41	16.37	2.26	2.53	J. M. Nobles, Berrydale.
Fertilizer No. 2.....	2857	3.85	10.72	1.59	22.71	1.54	1.98	H. A. Jones, Milton.
Cotton Seed Meal No. 1.....	2858	.....	.....	.....	2.74	0.29	1.81	H. A. Jones, Milton.
Acid Phosphate No. 1.....	2859	.....	14.02	4.26	18.28	.....	.....	H. H. Conley, Berrydale.
Fertilizer.....	2864	.....	11.80	0.24	22.14	1.62	2.05	G. W. Moore, Sr., Hunter.
Bird Guano.....	2855	.....	12.82	0.72	22.70	2.84	1.74	L. H. Woods, Tampa.
Mixture Guano & Acid Phosphate.	2866	.....	12.88	0.72	22.60	2.84	1.52	L. H. Woods, Tampa.
Fertilizer.....	2857	6.24	.....	.....	12.65	0.67	21.03	Geo. Ashby, Ft. Pierce.
Special Mixture.....	2859	7.99	2.56	1.74	8.24	0.88	0.84	Independent Fertil. Co., Jacksonville.
Fertilizer No. 1.....	2859	11.19	0.65	0.57	9.22	2.28	0.27	H. A. Perry, Panama.
Fertilizer No. 2.....	2860	16.39	0.12	1.05	0.75	1.24	7.65	H. A. Perry, Panama.
Fertilizer No. 1.....	2861	14.60	2.49	0.29	2.78	2.42	2.50	Givens & Clay, Laurel Hill.
Fertilizer No. 2.....	2862	11.17	0.32	0.44	5.81	1.73	1.82	Givens & Clay, Laurel Hill.
Fertilizer No. 1.....	2863	16.24	2.60	0.19	0.14	2.52	2.11	J. M. Humphill, Darlington.
Acid Phosphate No. 2.....	2864	.....	17.35	0.58	12.51	.....	.....	J. M. Humphill, Darlington.
Fertilizer.....	2865	5.19	7.50	1.50	5.07	0.63	0.17	G. I. Mills, Miami.
Fertilizer.....	2866	.....	0.22	1.24	7.56	1.02	2.43	A. M. Anderson, Geneva.
Fertilizer.....	2867	.....	0.74	1.24	6.58	2.59	7.45	G. I. Smith, Geneva-Hill.
Fertilizer.....	2868	5.29	.....	.....	7.71	0.62	2.80	Independent Fertil. Co., Jacksonville.

Fertilizer	1869	11.26	4.40	4.80	7.49	4.28	4.84	Lewis Hartsfield, Tallahassee.
Fertilizer	1870	14.59	7.26	8.26	7.65	1.29	1.82	C. L. Harris Garden City.
Fertilizer	1871	.....	5.38	6.17	11.49	2.44	4.21	Guaf Fertilizer Co., Tampa.
Fertilizer	1872	.....	2.19	1.97	7.54	4.24	1.85	J. W. Watson, Miami.
Sat Guano (A No. 1)	1873	14.11	.....	.....	4.28	3.21	4.25	Hughes & Montgomery, Tampa.
Sat Guano (A No. 2)	1874	14.09	.....	.....	6.83	2.45	4.25	Hughes & Montgomery, Tampa.
Sat Guano (B No. 1)	1875	18.64	.....	.....	2.19	3.21	4.47	Hughes & Montgomery, Tampa.
Sat Guano (B No. 2)	1876	41.40	.....	.....	2.84	1.10	4.74	Hughes & Montgomery, Tampa.
Sat Guano (C)	1877	12.24	.....	.....	6.11	1.52	4.88	Hughes & Montgomery, Tampa.
Fertilizer	1878	13.41	3.89	4.52	9.44	2.13	4.30	Ely Phillips, Berrydale.
Fertilizer	1879	18.79	1.43	4.33	4.18	4.74	4.31	J. A. Walsingham, Largo.
Fertilizer ("D. J. N. B.")	1880	5.89	4.41	4.18	10.77	1.65	11.77	E. B. Snow, Sanford.
Fertilizer	1881	19.31	9.54	1.59	11.68	1.31	4.74	C. W. Bell, Meritta.
Tankage	1882	.....	.....	.....	10.69	2.19	.....	Hastings Cold Storage Co., Hastings.
Fish Scrap	1883	22.37	.....	.....	4.49	7.19	.....	J. C. Burrows, Ft. Myers.
Fertilizer	1884	12.47	1.95	4.37	7.19	1.76	4.71	A. S. Alfred, St. Petersburg.
Fertilizer	1885	.....	4.77	4.35	6.12	4.58	4.92	J. P. Hardee, Wetherland.
Fertilizer	1886	.....	4.24	1.43	7.51	4.46	4.94	C. R. Walker, Sanford.
Kainit	1887	.....	.....	.....	.....	.....	11.61	Dunooly Fertilizer Co., Jacksonville.
Fertilizer	1888	7.43	1.51	4.88	5.45	1.57	10.55	H. A. Perry, Panama.
Fertilizer	1889	7.94	4.44	1.46	7.50	3.59	7.71	T. B. Glass, Hastings.

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FERTILIZER SECTION.

H. E. ROSE, State Chemist. OFFICIAL FERTILIZER ANALYSES, 1912. L. HEINDRAGER, Asst. Chemist.
 Samples Taken by State Chemist Under Sections 1 and 2, Act Approved May 22, 1905.

NAME, OR BRAND.	Laboratory Number.	Material.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM and WHERE MANUFACTURED.	
			Available.	Insoluble.	Total.				
Lettuce & Cuke Special...	1246	Guarant's Analysis	12.85	2.55	1.95	5.55	4.05	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis...	5.24	5.74	0.35	5.35	5.41	4.54	
Special Potato Mixture....	1247	Guarant's Analysis	12.85	2.05	4.05	7.05	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis...	7.35	5.44	2.40	5.55	4.55	7.25	
Orange Tree Grower.....	1248	Guarant's Analysis	8.55	4.55	1.55	7.55	5.55	6.55	The Gulf Fertilizer Co., Tampa, Fla.
		Official Analysis...	12.55	7.25	5.24	7.54	4.55	7.54	
Strawberry Special	1249	Guarant's Analysis	2.55	2.55	1.55	2.55	3.55	The Gulf Fertilizer Co., Tampa, Fla.
		Official Analysis...	11.55	5.24	2.55	15.55	2.55	3.25	
Nitrate of Soda.....	1250	Guarant's Analysis	15.55	The Gulf Fertilizer Co., Tampa, Fla.
		Official Analysis...	.....	.....	.....	.....	12.55	.....
Celery Special	1251	Guarant's Analysis	15.55	2.55	1.55	2.55	2.55	7.05	The Gulf Fertilizer Co., Tampa, Fla.
		Official Analysis...	8.55	5.71	1.15	6.95	5.34	7.35	

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Orange Fertilizer	1753	Guarant'd Analysis Official Analysis...	10.00 5.41	6.00 6.23	1.00 5.12	7.00 11.35	4.00 4.10	11.00 10.61	The Gulf Fertilizer Co., Tampa, Fla.
Dissolved Bone Black.....	1752	Guarant'd Analysis Official Analysis.....	12.50 15.34	11.00 8.85	..... 15.50	..... .....	..... .....	..... .....	The Gulf Fertilizer Co., Tampa, Fla.
Raw Bone Meal.....	1754	Guarant'd Analysis Official Analysis.....	..... .....	..... .....	..... .....	18.12 19.44	4.00 4.42	..... .....	The Gulf Fertilizer Co., Tampa, Fla.
Special Fruit and Veg.....	1755	Guarant'd Analysis Official Analysis.....	8.00 5.34	6.00 6.57	1.00 2.73	7.00 9.30	2.00 3.38	12.00 13.46	The Gulf Fertilizer Co., Tampa, Fla.
Germofert Tomato Special.....	1756	Guarant'd Analysis Official Analysis.....	5.00 18.74	5.00 6.08	7.00 1.67	12.00 8.36	5.00 2.82	6.00 6.10	The Tampa Fertilizer Co., Tampa, Fla.
Germofert Bean & Pea Special	1757	Guarant'd Analysis Official Analysis.....	5.00 12.00	5.00 2.45	7.00 7.32	12.00 9.79	4.00 2.85	5.00 5.53	The Tampa Fertilizer Co., Tampa, Fla.
Germofert High Grade Vegetable	1758	Guarant'd Analysis Official Analysis.....	5.00 5.28	5.00 3.31	7.00 8.64	12.00 12.85	4.00 4.33	6.00 4.67	The Tampa Fertilizer Co., Tampa, Fla.
Simon Pure Tomato.....	1759	Guarant'd Analysis Official Analysis.....	8.00 7.07	4.00 5.85	..... 1.11	..... 6.39	..... 6.25	5.00 11.23	E. O. Painter Fertilizer Co., Jacksonville, Fla.
Gem Orange Tree.....	1760	Guarant'd Analysis Official Analysis.....	8.00 7.24	5.00 5.74	3.00 1.84	..... 7.28	4.00 5.73	6.00 6.77	E. O. Painter Fertilizer Co., Tampa, Fla.
Muck Land Tomato No. 1.....	1761	Guarant'd Analysis Official Analysis.....	10.00 2.70	5.00 3.07	..... 6.42	..... 10.20	2.00 4.72	3.00 8.30	E. O. Painter Fertilizer Co., Tampa, Fla.
Gen Vegetable	1762	Guarant'd Analysis Official Analysis.....	5.00 7.48	5.00 5.80	3.00 6.51	..... 6.61	..... 6.34	6.00 8.05	E. O. Painter Fertilizer Co., Jacksonville, Fla.

OFFICIAL FERTILIZER ANALYSES, 1913—Continued.

NAME OR BRAND.	Laboratory Number.		Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
The Mapes Veg. Manure..	1761	Guarant's Analysis	5.56	.....	.....	.....	3.58	7.90	The Mapes F. & P. Guano Co., New York, N. Y.
		Official Analysis...	10.75	0.80	2.21	3.82	4.41	7.43	
The Mapes Veg. Manure..	1764	Guarant's Analysis	12.00	0.00	2.00	.....	5.00	4.00	The Mapes F. & P. Guano Co., New York, N. Y.
		Official Analysis...	5.42	4.43	2.25	7.89	4.25	5.55	
The Mapes Orange Tree Manure	1746	Guarant's Analysis	12.00	0.00	2.00	.....	4.00	2.00	The Mapes F. & P. Guano Co., New York, N. Y.
		Official Analysis...	7.53	4.34	2.34	3.53	4.40	2.65	
The Mapes F. & V. Manure	1760	Guarant's Analysis	10.00	0.00	2.00	.....	2.00	10.00	The Mapes F. & P. Guano Co., New York, N. Y.
		Official Analysis...	3.30	4.25	4.25	4.68	2.52	10.82	
Tomato Special	1767	Guarant's Analysis	10.00	0.00	1.00	.....	5.00	8.00	Armour Fertil. Works Jacksonville, Fla.
		Official Analysis...	4.84	5.42	1.54	7.23	5.11	8.50	
No. 1	1768	Guarant's Analysis	8.00	0.00	2.00	.....	5.00	4.00	Southern Fertilizer Co., Orlando, Fla.
		Official Analysis...	7.23	5.00	1.11	6.33	4.57	4.58	
No. 2	1769	Guarant's Analysis	8.00	0.00	2.00	.....	4.00	10.00	Southern Fertilizer Co., Orlando, Fla.
		Official Analysis...	6.85	7.56	0.17	7.32	4.92	9.24	

Hillman's Special for Vegetables	1775	Guarant'd Analysis Official Analysis...	8.00 7.25	..... 5.83	..... 4.84	..... 9.00	..... 4.66	..... 5.00	..... 5.00	..... 5.00	Southern Fertilizer Co., Ocala, Fla.
Simon Pure Special No. 2	1773	Guarant'd Analysis Official Analysis...	8.00 5.45	..... 6.02	..... 9.13	..... 6.16	..... 6.43	..... 7.58	..... 6.00	..... 6.00	E. O. Palster Fertilizer Co., Jacksonville, Fla.
Simon Pure Tomato.....	1772	Guarant'd Analysis Official Analysis...	8.00 6.82	..... 6.00	..... 1.68	..... 7.49	..... 5.83	..... 9.00	..... 9.00	..... 9.00	E. O. Palster Fertilizer Co., Jacksonville, Fla.
L. G. Sulfate of Potash.....	1772	Guarant'd Analysis Official Analysis...	8.00 .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... 26.00	..... 27.00	E. O. Palster Fertilizer Co., Jacksonville, Fla.
Nitrate of Soda.....	1774	Guarant'd Analysis Official Analysis...	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... 17.00	..... 19.00	E. O. Palster Fertilizer Co., Jacksonville, Fla.
Simon Pure Special No. 1.....	1775	Guarant'd Analysis Official Analysis...	..... 7.69	..... 6.02	..... 9.13	..... 5.73	..... 5.44	..... 16.00	..... 15.99	..... 15.99	E. O. Palster Fertilizer Co., Jacksonville, Fla. ²⁸
L. G. Blood & Bone.....	1776	Guarant'd Analysis Official Analysis...	5.50 .....	..... .....	..... .....	..... 12.00	..... 13.62	..... 6.50	..... 7.00	..... .....	E. O. Palster Fertilizer Co., Jacksonville, Fla.
High Grade Acid Phosphate	1777	Guarant'd Analysis Official Analysis...	..... .....	..... 16.00	..... 1.50	..... 18.25	..... .....	..... .....	..... .....	..... .....	E. O. Palster Fertilizer Co., Jacksonville, Fla.
Acid Phosphate	1778	Guarant'd Analysis Official Analysis...	..... .....	..... 14.00	..... 1.31	..... 17.41	..... .....	..... .....	..... .....	..... .....	Sealing Fert. Works, Pensacola, Fla.
Early Bird F. & V. Manure.	1779	Guarant'd Analysis Official Analysis...	10.00 7.64	..... 6.15	..... 1.13	..... 7.36	..... 2.50	..... 11.28	..... 10.00	..... 11.28	Ocala Fertilizer Co., Jacksonville, Fla.
Early Bird Fla. Veg. Manure	1780	Guarant'd Analysis Official Analysis...	10.00 8.15	..... 6.18	..... 1.22	..... 7.36	..... 3.00	..... 6.17	..... 5.00	..... 6.17	Ocala Fert. Works, Jacksonville, Fla.

OFFICIAL FERTILIZER ANALYSES, 1917—Continued.

NAME, OR BRAND,	Laboratory Number.		Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
Early Bird Orange Tree Ma- ture	1783	Guarant'd Analysis	19.89	6.00	1.00	.....	4.00	5.00	Osceola Fertil. Works, Jacksonville.
		Official Analysis...	9.56	7.14	0.82	7.97	0.94	2.65	
Early Bird Irish Potato Ma- ture	1782	Guarant'd Analysis	10.00	5.00	.....	.....	4.00	7.00	Osceola Fertil. Works, Jacksonville, Fla.
		Official Analysis...	8.17	6.12	2.92	9.65	4.95	4.62	
Early Bird Perfect F. & V. Mature	1782	Guarant'd Analysis	10.00	6.00	1.00	.....	4.00	10.00	Osceola Fertil. Works, Jacksonville, Fla.
		Official Analysis...	6.88	6.34	1.21	7.55	4.50	9.71	
Superior General Trucker.	1784	Guarant'd Analysis	10.00	5.00	1.00	.....	2.50	7.00	Osceola Fertilizer Co., Osceola, Fla.
		Official Analysis...	6.85	4.79	0.95	4.75	2.99	8.19	
Early Bird Watermelon Ma- ture	1785	Guarant'd Analysis	12.00	7.00	1.00	.....	5.00	5.00	Osceola Fertilizer Co., Jacksonville, Fla.
		Official Analysis...	8.12	7.55	2.04	9.59	5.20	5.71	
Charleston Special Mixture	1786	Guarant'd Analysis	.....	7.00	.....	.....	2.75	5.50	Osceola Fertilizer Co., Osceola, Fla.
		Official Analysis...	7.95	7.38	0.11	7.47	4.21	5.58	
Pace's Lattner Special.....	1787	Guarant'd Analysis	10.00	5.00	.....	.....	5.00	5.00	Independent Fertil. Co., Jacksonville, Fla.
		Official Analysis...	6.74	4.50	1.60	6.60	5.50	6.49	

Seedling Tree Grower....	1735	Guarant'd Analysis Official Analysis...	8.00 9.25	6.00 6.75	..... 2.00	..... 8.75	4.00 4.48	5.00 7.00	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Wilson & Toomer's Special Mixture No. 1.....	1736	Guarant'd Analysis Official Analysis...	8.00 7.95	6.00 6.91	1.00 2.77	..... 8.15	5.00 4.48	5.00 5.74	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Meal Celery Fertilizer....	1738	Guarant'd Analysis Official Analysis...	8.00 6.17	3.00 3.26	2.00 4.37	..... 7.63	6.00 5.76	7.00 7.76	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Meal Vegetable Manure...	1734	Guarant'd Analysis Official Analysis...	10.00 7.80	6.00 7.09	1.00 1.12	..... 8.21	4.00 4.15	8.00 7.34	Wilson & Toomer Fert. Co., Jacksonville, Fla.
No. 1 Purulia and Fish Guano Mixture	1737	Guarant'd Analysis Official Analysis...	12.00 3.18	5.00 5.27	1.00 1.97	..... 4.84	6.00 4.38	8.00 4.12	Fla. Fert. Co., Branch, Gainesville, Fla.
Armour's Original No. 1 Mixture	1733	Guarant'd Analysis Official Analysis...	10.00 8.40	5.00 5.23	1.00 0.52	..... 1.70	1.00 4.26	1.00 5.48	Armour Fert. Works, Jacksonville, Fla.
Bean Fertilizer	1734	Guarant'd Analysis Official Analysis...	10.00 8.40	1.00 0.28	1.00 0.74	..... 4.00	5.00 5.18	5.00 6.35	Armour Fert. Works, Jacksonville, Fla.
Armour's Irish Potato Spe- cial	1735	Guarant'd Analysis Official Analysis...	10.00 8.50	5.00 6.00	1.00 0.45	..... 4.00	3.00 3.44	8.00 7.77	Armour Fert. Works, Jacksonville, Fla.
Armour's Cucumber Special	1736	Guarant'd Analysis Official Analysis...	10.00 8.80	5.00 4.24	1.00 1.29	..... 9.53	5.00 5.88	7.00 7.25	Armour Fert. Works, Jacksonville, Fla.
Armour's Practical Truck	1737	Guarant'd Analysis Official Analysis...	10.00 8.51	6.00 1.24	2.00 2.50	..... 8.10	3.00 1.19	10.00 8.40	Armour Fert. Works, Jacksonville, Fla.
Sugar Cane Special.....	1738	Guarant'd Analysis Official Analysis...	10.00 7.42	5.00 5.73	1.00 1.90	..... 6.73	4.00 4.62	6.00 7.50	American Agricul Chem Co., Jacksonville, Fla.

OFFICIAL FERTILIZER ANALYSES, 1912—Continued.

NAME OR BRAND	Laboratory Number.		Moisture.	Phosphoric acid.			Ammonia.	Potash (K ₂ O).	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
Bradley Orange Tree.....	1789	Guarant'd Analysis	10.00	4.00	1.00	.....	3.50	5.00	American-Agrical. Chem. Co., Jacksonville, Fla.
		Official Analysis...	7.15	7.97	1.92	8.30	2.50	4.51	
Bradley Special Fruit and Vine	1840	Guarant'd Analysis	10.00	5.05	1.00	.....	4.25	10.00	American Agrical. Chem. Co., Jacksonville, Fla. ^F
		Official Analysis...	8.76	4.03	1.25	7.29	4.80	10.99	
Bradley Florida Vegetable.	1861	Guarant'd Analysis	10.00	4.00	1.00	.....	4.00	5.00	American-Agrical. Chem. Co., Jacksonville, Fla.
		Official Analysis...	5.73	4.37	0.43	6.70	4.31	5.35	
Bradley Nursery Stock.....	1907	Guarant'd Analysis	10.00	5.00	1.00	.....	4.50	5.00	American-Agrical. Chem. Co., Jacksonville, Fla.
		Official Analysis...	11.25	8.79	1.22	10.10	4.12	3.30	
H. G. Champion Chloro Compound	1905	Guarant'd Analysis	10.00	4.00	1.00	.....	3.00	14.00	Virginia-Carolina Chem. Co., Savannah, Ga.
		Official Analysis...	3.17	4.00	1.00	7.00	3.47	14.31	
Hale Truckee P- (Hale)..	1910	Guarant'd Analysis	8.00	4.00	1.00	.....	4.00	8.00	Virginia-Carolina Chem. Co., Sanford, Fla.
		Official Analysis...	7.65	4.74	1.22	8.00	4.94	7.14	
No. 2 Lettuce & Celery Grower	1908	Guarant'd Analysis	8.00	4.00	1.00	.....	5.00	8.00	Virginia-Carolina Chem. Co., Sanford, Fla.
		Official Analysis...	7.11	5.50	1.15	7.01	5.40	7.78	

Virginia-Carolina Tip Top Tomato Tracker	1806	Guarant'd Analysis Official Analysis...	8.80 3.59	7.00 7.51	1.00 1.15	..... 8.79	4.80 4.84	1.00 2.55	Virginia-Carolina Chem. Co., Sanford, Fla.
Southern States Special Yagmagle Grower	1807	Guarant'd Analysis Official Analysis...	5.00 2.52	5.00 4.95	1.00 1.28	..... 8.21	4.80 4.56	1.00 4.85	Virginia-Carolina Chem. Co., Sanford, Fla.
Virginia-Carolina Special No. 5	1808	Guarant'd Analysis Official Analysis...	8.80 8.55	3.00 2.60	1.00 1.25	..... 7.81	1.80 4.90	1.00 4.52	Virginia-Carolina Chem. Co., Sanford, Fla.
The Mapes Fruit and Vine Manure	1809	Guarant'd Analysis Official Analysis...	18.00 9.25	5.00 4.21	2.00 2.55	..... 7.79	2.00 2.52	18.00 8.94	The Mapes F. & P. Co. and Co., New York.
The Mapes Orange Tree Manure	1810	Guarant'd Analysis Official Analysis...	12.00 11.80	5.00 5.17	2.00 2.58	..... 8.75	4.00 4.50	1.00 1.50	The Mapes F. & P. Co. and Co., New York.
The Mapes Vegetable Manure	1811	Guarant'd Analysis Official Analysis...	12.00 8.22	4.00 4.57	2.00 2.50	..... 7.50	5.00 5.07	4.00 4.91	The Mapes F. & P. Co. and Co., New York.
Pace's Celery Special.....	1812	Guarant'd Analysis Official Analysis...	18.00 8.38	5.00 4.81	..... 2.58	..... 4.97	8.00 5.72	1.00 1.12	Independent Ferts. Co., Jacksonville, Fla.
Favorite Early Tracker.....	1813	Guarant'd Analysis Official Analysis...	18.00 8.24	4.00 4.00	2.00 1.79	..... 7.79	1.00 2.28	18.00 18.12	Independent Ferts. Co., Jacksonville, Fla.
Johnson Special Mixture.....	1814	Guarant'd Analysis Official Analysis...	..... 7.44	..... 5.07	..... 0.14	..... 5.21	..... 2.95	..... 6.72	Ocala Fertilizer Co., Ocala, Fla.
"Superior" Bean Fertilizer.....	1815	Guarant'd Analysis Official Analysis...	18.00 5.04	2.00 1.42	1.00 0.20	..... 5.72	1.00 1.44	1.00 5.11	Ocala Fertilizer Co., Ocala, Fla.
"Superior" Vegetable Fertilizer	1816	Guarant'd Analysis Official Analysis...	18.00 8.52	6.00 6.05	1.00 0.20	..... 6.73	4.00 4.51	8.00 7.21	Ocala Ferts. Co., Ocala, Fla.

OFFICIAL FERTILIZER ANALYSES, 1913—Continued.

NAME, OR BRAND.	Laboratory Number.	Guarant'ed Analysis.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O).	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
Goulding's High Grade English Guano	1817	Guarant'ed Analysis Official Analysis..	18.00 18.00	10.00 10.04	0.50 1.05	..... 11.53	0.00 0.11	0.00 0.00	Am. Agricul. Chem. Co., Goulding's Ferts. Wks., Pensacola, Fla.
Wilson & Toomer's Special F. & V. Manure	1818	Guarant'ed Analysis Official Analysis..	10.00 7.00	0.00 0.07	1.00 2.00	..... 3.00	4.00 4.00	12.00 12.70	Wilson & Toomer Ferts. Co., Jacksonville, Fla.
Goulding's 10% Acid Phosphate	1819	Guarant'ed Analysis Official Analysis..	14.00	10.00 15.20	0.50 2.21	..... 18.41	..... .....	..... .....	Am. Agricul. Chem. Co., Goulding's Ferts. Wks., Pensacola, Fla.
Favorite Bone Black & Potash Compound	1820	Guarant'ed Analysis Official Analysis..	10.00 7.50	0.00 7.00	0.50 0.00	..... 0.00	..... .....	12.00 11.17	Independent Ferts. Co., Jacksonville, Fla.
Favorite Fruit & Manure...	1821	Guarant'ed Analysis Official Analysis..	10.00 4.00	0.00 0.70	0.50 0.70	..... 2.50	0.00 0.00	12.00 12.10	Ind. Agricul. Ferts. Co., Jacksonville, Fla.
Favorite Orange Grower...	1822	Guarant'ed Analysis Official Analysis..	10.00 0.00	0.00 0.17	1.00 0.00	..... 0.00	0.00 0.15	14.00 12.71	Independent Ferts. Co., Jacksonville, Fla.
Florida Special No. 3.....	1823	Guarant'ed Analysis Official Analysis..	10.00 7.00	7.00 0.02	..... 0.00	..... 1.00	0.00 0.00	10.00 11.50	Independent Ferts. Co., Jacksonville, Fla.

Choctaw Cotton Guano.....	1824	Guarant'd Analysis Official Analysis...	18.00 11.85	10.00 10.48	2.00 0.75	..... 11.12	2.00 2.00	4.00 4.95	F. S. Royce & Guano Co., Macon, Ga.
Wilson & Toomer's Special Mixture No. 1.....	1825	Guarant'd Analysis Official Analysis...	5.00 5.94	0.00 0.25	1.00 1.62	..... 8.30	5.00 4.55	2.00 3.52	Wilson & Toomer Ferts. Co., Jacksonville, Fla.
Hamber's Compound	1825	Guarant'd Analysis Official Analysis...	..... 19.72	10.00 3.05	..... 2.78	..... 11.75	2.00 1.92	2.00 2.72	Blanchard, Hamber & Co., Columbia, Ga.
Fertilizer	1827	Guarant'd Analysis Official Analysis...	..... 19.35	12.00 7.12	..... 1.45	..... 8.54	..... .....	4.00 4.35	Gulf Guano Co., Bal- bridge, Ga.
Buck	1828	Guarant'd Analysis Official Analysis...	8.00 12.08	1.00 3.43	1.00 0.72	..... 9.12	2.00 2.70	2.00 2.18	Gulf Guano Co., Bal- bridge, Ga.
Early Bird Young Pineap- ple Manure	1828	Guarant'd Analysis Official Analysis...	10.00 8.71	..... .....	..... .....	..... 5.53	5.00 5.22	5.00 6.15	Osceola Ferts. Co., Jack- sonville, Fla.
Gulf State Special.....	1829	Guarant'd Analysis Official Analysis...	19.00 11.25	8.00 7.32	2.00 1.32	..... 8.54	3.00 2.40	2.00 2.90	Gulf Chemical Co., Mari- anna, Fla.
Marianna Special Guano..	1831	Guarant'd Analysis Official Analysis...	10.00 10.80	10.00 9.34	2.00 1.50	..... 11.50	2.00 1.73	2.00 2.52	Gulf Chemical Co., Mari- anna, Fla.
Balfour	1832	Guarant'd Analysis Official Analysis...	12.00 19.61	2.50 7.91	1.50 0.88	..... 8.77	2.00 2.13	4.00 3.84	W. C. Bradley Co., Co- lumbus, Ga.
Tuscarora Tomato Special.	1833	Guarant'd Analysis Official Analysis...	10.00 10.52	0.00 1.67	1.00 0.72	..... 4.48	5.00 4.84	5.00 7.17	Tuscarora Ferts. Co., Jacksonville, Fla.
Florida Fruit & Tree Grow- er	1834	Guarant'd Analysis Official Analysis...	10.00 9.48	1.00 2.86	1.00 2.25	..... 10.12	5.00 4.77	7.00 6.72	Tuscarora Ferts. Co., Jacksonville, Fla.

OFFICIAL FERTILIZER ANALYSES, 1913—Continued.

NAME OR BRAND	Laboratory Number.		Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O.)	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
Celery Grower	1828	Guarant'd Analysis	10.88	2.00	1.00	.....	7.00	4.00	Tampa Bay Ferts. Co., Jacksonville, Fla.
		Official Analysis...	9.11	2.28	0.90	4.28	6.94	4.48	
Mackland Tomato Special No. 2	1828	Guarant'd Analysis	10.88	8.00	.....	.....	2.50	5.00	E. O. Painter Ferts. Co., Jacksonville, Fla.
		Official Analysis...	8.33	11.47	1.10	12.82	4.81	6.50	
Gem Corn Fertilizer.....	1827	Guarant'd Analysis	10.00	5.00	2.00	.....	2.00	4.00	E. O. Painter Ferts. Co., Jacksonville, Fla.
		Official Analysis...	10.50	6.57	0.57	7.28	2.45	4.51	
Simon Pure Garden	1828	Guarant'd Analysis	8.00	8.00	2.00	.....	5.00	6.50	E. O. Painter Ferts. Co., Jacksonville, Fla.
		Official Analysis...	14.20	5.85	1.17	6.25	6.55	6.24	
Simon Pure No. 2.....	1828	Guarant'd Analysis	8.00	6.00	1.00	.....	5.00	6.00	E. O. Painter Ferts. Co., Jacksonville, Fla.
		Official Analysis...	7.21	7.40	0.24	8.08	5.42	6.30	
H. G. Orange Fertilizer.....	1840	Guarant'd Analysis	10.00	10.00	1.00	.....	2.00	12.00	Am. Agrical. Chem. Co., Jacksonville, Fla.
		Official Analysis...	6.55	10.71	0.45	10.76	3.52	12.43	
Bradley Florida Vegetable.	1841	Guarant'd Analysis	10.00	6.00	1.00	.....	4.00	5.00	Am. Agrical. Chem. Co., Jacksonville, Fla.
		Official Analysis...	10.10	6.93	1.00	8.00	4.18	4.58	

Bradley Fruit & Vine.....	1842	Guarant'd Analysis Official Analysis...	19.00 8.18	5.50 7.94	1.00 2.22	..... 9.36	3.25 2.54	18.00 8.41	Am. Agricul. Chem. Co., Jacksonville, Fla.
Bradley Special Fruit & Vine	1843	Guarant'd Analysis Official Analysis...	19.00 7.98	5.50 6.37	1.00 1.19	..... 7.66	4.25 4.73	18.00 8.78	Am. Agricul. Chem. Co., Jacksonville, Fla.
Bradley Nursery Stock....	1844	Guarant'd Analysis Official Analysis...	19.00 11.45	5.00 8.24	1.00 1.25	..... 9.42	4.50 4.55	3.00 3.17	Am. Agricul. Chem. Co., Jacksonville, Fla.
Armour's Sweet Potato Special	1845	Guarant'd Analysis Official Analysis...	18.00 8.78	4.50 5.90	1.00 1.18	..... 7.11	2.50 2.97	3.50 3.00	Armour Ferts. Works, Jacksonville, Fla.
Armour's Blood, Bone & Potash	1846	Guarant'd Analysis Official Analysis...	18.00 19.71	5.00 8.48	1.00 0.90	..... 9.42	5.00 4.22	7.00 8.00	Armour Ferts. Works, Jacksonville, Fla.
Armour's Corn Special....	1847	Guarant'd Analysis Official Analysis...	18.00 9.83	4.00 8.74	1.00 1.87	..... 7.81	3.00 2.62	6.00 6.00	Armour Ferts. Works, Jacksonville, Fla.
Armour's Orange Fertilizer..	1848	Guarant'd Analysis Official Analysis...	18.00 7.95	5.00 8.42	1.00 0.20	..... 8.78	4.00 4.12	12.00 11.80	Armour Ferts. Works, Jacksonville, Fla.
Armour's Original No. 1 Mixture	1849	Guarant'd Analysis Official Analysis...	18.00 9.14	5.00 4.85	1.00 2.12	..... 7.62	5.00 4.54	5.00 4.22	Armour Ferts. Works, Jacksonville, Fla.
Ideal Vegetable Mixture....	1850	Guarant'd Analysis Official Analysis...	8.00 9.12	5.00 7.19	1.00 1.82	..... 9.62	4.00 3.99	8.00 8.47	Wilson & Toomer Ferts. Co., Jacksonville, Fla.
Ideal Fruit & Vine Mixture.	1851	Guarant'd Analysis Official Analysis...	8.00 10.22	4.00 6.72	..... 1.00	..... 7.88	3.00 2.42	10.00 9.71	Wilson & Toomer Ferts. Co., Jacksonville, Fla.
Wilson & Toomer's H. G. Fruit & Vine.....	1852	Guarant'd Analysis Official Analysis...	8.00 8.42	10.00 10.89	..... 2.14	..... 12.23	1.00 2.76	13.00 11.71	Wilson & Toomer Ferts. Co., Jacksonville, Fla.
"Superior" Vegetable Fer- tilizer	1853	Guarant'd Analysis Official Analysis...	10.00 8.22	5.00 5.98	1.00 0.18	..... 4.14	4.00 3.55	8.00 8.18	Ocala Fertilizer Co., Ocala, Fla.

OFFICIAL FERTILIZER ANALYSES, 1913—Continued.

NAME OR BRAND	Laboratory Number.		Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O).	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
"Superior" Orange Tree F. & V. Fertilizer.....	1854	Guarant'd Analysis	10.00	2.00	1.00	.....	2.00	12.00	Ocala Fertilizer Co., Ocala, Fla.
		Official Analysis...	9.44	2.44	0.45	2.10	2.00	11.90	
"Superior" General Truckee	1855	Guarant'd Analysis	10.00	2.00	1.00	.....	2.00	2.00	Ocala Fertilizer Co., Ocala, Fla.
		Official Analysis...	9.75	2.07	0.10	2.23	2.12	4.45	
Mapes Vegetable Manure...	1856	Guarant'd Analysis	12.00	0.00	2.00	.....	2.00	4.00	Mapes F. & P. Guano Co., New York City.
		Official Analysis...	9.62	1.17	1.20	3.10	2.20	2.65	
Mapes Fruit & Vine Manure	1857	Guarant'd Analysis	10.00	2.00	2.00	.....	2.00	10.00	Mapes F. & P. Guano Co., New York City.
		Official Analysis...	8.90	2.44	2.91	3.56	2.54	11.31	
Mapes Orange Tree Manure	1858	Guarant'd Analysis	12.00	4.00	2.00	.....	4.00	2.00	Mapes F. & P. Guano Co., New York City.
		Official Analysis...	9.20	2.94	1.95	2.70	4.20	2.65	
Peruvian Orange Tree Mix- ture	1859	Guarant'd Analysis	.....	2.00	.....	.....	2.00	3.00	Am. Agricul. Chem. Co., Jacksonville, Fla.
		Official Analysis...	8.80	2.25	1.20	3.11	2.40	2.70	
V. C. Special No. 5.....	1860	Guarant'd Analysis	8.00	2.00	1.00	.....	2.00	2.00	Virginia-Carolina Chem. Co., Sanford, Fla.
		Official Analysis...	7.22	1.95	1.17	3.15	2.10	2.10	

Armour's Sweet Potato Special	1841	Guarant'd Analysis Official Analysis...	18.00 19.17	6.50 6.39	1.00 1.06	7.85	2.50 2.64	2.50 4.11	Armour Ferts. Works, Jacksonville, Fla.
Early Red Irish Potato Manure	1842	Guarant'd Analysis Official Analysis...	18.00 8.76	..... 5.39	..... 2.54	8.00 8.82	4.00 4.31	7.00 4.95	Onoda Ferts. Co., Jacksonville, Fla.
Mapes Fruit & Vine Manure	1843	Guarant'd Analysis Official Analysis...	18.00 8.58	5.00 5.13	2.00 2.29	..... 8.23	2.00 2.68	18.00 19.00	Mapes F. & P. Guano Co., New York City.
Mapes Special for Potatoes	1844	Guarant'd Analysis Official Analysis...	..... 8.74	5.50 5.85	..... 2.18	..... 8.81	2.50 4.21	7.00 3.32	Mapes F. & P. Guano Co., New York City.
Mapes Improved Pineapp. Manure	1845	Guarant'd Analysis Official Analysis...	18.00 8.73	4.00 5.87	2.00 3.32	..... 8.48	5.00 6.48	5.00 5.84	Mapes F. & P. Guano Co., New York City.
Mapes Vegetable Manure	1846	Guarant'd Analysis Official Analysis...	12.00 9.31	4.00 6.23	2.00 2.59	..... 9.50	5.00 5.52	4.00 5.55	Mapes F. & P. Guano Co., New York City.
Mapes Orange Tree Manure	1847	Guarant'd Analysis Official Analysis...	12.00 11.84	8.00 6.55	2.00 4.47	..... 11.02	4.00 4.67	2.00 3.32	Mapes F. & P. Guano Co., New York City.
Goodling's Bone Compound	1848	Guarant'd Analysis Official Analysis...	18.00 22.48	8.00 7.99	0.50 2.54	..... 10.44	2.00 2.32	2.00 1.71	Goodling's Ferts. Works, Pensacola, Fla.
Goodling's H. G. Eng. Guano	1849	Guarant'd Analysis Official Analysis...	18.00 14.80	10.00 10.12	0.50 0.37	..... 12.04	2.00 2.29	2.00 1.96	Goodling's Ferts. Works, Pensacola, Fla.
Goodling's Fish Guano.....	1876	Guarant'd Analysis Official Analysis...	18.00 18.29	10.00 10.32	0.50 1.35	..... 12.28	2.00 2.39	2.00 1.96	Goodling Ferts. Works, Pensacola, Fla.
Orange Tree Grower.....	1871	Guarant'd Analysis Official Analysis...	8.00 10.71	6.00 7.30	1.00 2.10	7.00 9.48	2.00 3.81	6.00 6.51	Gulf Ferts. Co., Tampa, Fla.

OFFICIAL FERTILIZER ANALYSES, 1915—Continued.

NAME OR BRAND.	Laboratory Number.		Moisture.	Phosphoric Acid.			Ammonia.	Potash (K ₂ O).	BY WHOM and WHERE MANUFACTURED.
				Available.	Insoluble.	Total.			
Vegetable Special.....	1872	Contract's Analysis Official Analysis...	10.86 12.42	4.50 5.50	1.80 1.30	7.55 8.75	4.00 4.50	5.50 5.00	Gulf Fertil. Co., Tampa, Fla.
Orange Fertilizer.....	1873	Contract's Analysis Official Analysis...	10.68 8.49	4.50 7.50	1.80 2.00	7.68 9.51	4.00 4.85	11.00 10.50	Gulf Fertil. Co., Tampa, Fla.
Special Fruit & Vine.....	1874	Contract's Analysis Official Analysis...	8.80 9.22	4.00 7.07	1.60 0.57	7.60 7.64	2.80 2.60	12.00 12.15	Gulf Fertil. Co., Tampa, Fla.
Favorite Strawberry Special	1875	Contract's Analysis Official Analysis...	10.00 6.22	4.00 5.10	2.00 2.25	..... 7.35	2.00 2.50	12.00 12.25	Independent Fertil. Co., Jacksonville, Fla.
Favorite Bean Special No. 2	1876	Contract's Analysis Official Analysis...	10.00 8.44	4.00 4.00	1.00 0.25	..... 4.25	2.00 4.07	4.00 8.45	Independent Fertil. Co., Jacksonville, Fla.
Favorite Fertilizer Mixture...	1877	Contract's Analysis Official Analysis...	10.00 2.52	5.00 7.75	1.50 1.25	..... 7.50	4.00 4.25	12.00 11.50	Independent Fertil. Co., Jacksonville, Fla.
Favorite Lattice Special...	1878	Contract's Analysis Official Analysis...	10.00 8.80	4.00 4.70	1.00 1.02 5.70	2.00 3.30	4.00 4.25	Independent Fertil. Co., Jacksonville, Fla.

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Gen. Black Land Tomato No. 2	1879	Guarant'd Analysis	18.00	2.00	2.50	2.00	E. O. Palmer Fert. Co., Jacksonville, Fla.
		Official Analysis...	7.84	11.20	8.64	12.82	4.40	2.18	
Gen. Vegetable	1888	Guarant'd Analysis	5.00	1.50	1.00	.....	1.00	6.00	E. O. Palmer Fert. Co., Jacksonville, Fla.
		Official Analysis...	2.81	5.22	1.95	9.27	4.04	6.47	
Gen. Pineapple Manure....	1891	Guarant'd Analysis	10.00	.....	.....	1.50	1.00	4.00	E. O. Palmer Fert. Co., Jacksonville, Fla.
		Official Analysis...	8.20	1.88	8.27	2.41	4.75	4.80	
Guanofert Orange Tree Grover	1882	Guarant'd Analysis	5.00	1.00	9.00	12.80	4.00	4.00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis...	5.15	2.25	11.11	13.70	5.51	7.70	
Guanofert Coconut Special..	1882	Guarant'd Analysis	5.00	1.00	7.00	12.00	4.00	6.00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis...	6.51	2.54	11.87	14.91	6.24	6.88	
Guanofert H. G. Vegetable	1884	Guarant'd Analysis	5.00	1.00	7.00	12.80	4.00	4.00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis...	5.70	2.22	12.72	16.99	5.06	4.71	
Guanofert Strawberry Special	1885	Guarant'd Analysis	5.00	1.00	7.00	12.00	1.00	10.00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis...	6.81	3.02	10.37	14.29	2.13	9.47	
Armour's Irish Potato Special	1886	Guarant'd Analysis	10.00	1.50	1.00	.....	3.50	3.50	Armour Fert. Works, Jacksonville, Fla.
		Official Analysis...	10.74	5.38	6.82	4.82	2.59	8.71	
Armour's Strawberry Fruit-er	1887	Guarant'd Analysis	10.00	1.00	1.00	.....	2.00	10.00	Armour Fert. Works, Jacksonville, Fla.
		Official Analysis...	9.40	5.14	6.88	4.84	2.22	9.40	
Mapes Vegetable Manure..	1888	Guarant'd Analysis	12.00	6.00	2.00	.....	5.00	4.00	Mapes F. & P. Guano Co., New York City.
		Official Analysis...	4.82	6.92	2.52	10.24	5.40	5.10	
Mapes Orange Tree Manure	1888	Guarant'd Analysis	12.00	2.00	2.00	.....	4.00	1.00	Mapes F. & P. Guano Co., New York City.
		Official Analysis...	9.01	6.97	4.74	10.82	4.22	2.58	

OFFICIAL FERTILIZER ANALYSES, 1912—Continued

NAME OR BRAND	Laboratory Number		Moisture	Phosphoric Acid			Ammonia	Potash (K ₂ O)	BY WHOM and WHERE MANUFACTURED
				Available	Inavailable	Total			
Bradley Fla. Vegetable....	1700	Contract'd Analysis	16.46	0.66	1.09	.....	4.06	5.00	Am. Agri. Chem. Co., Jacksonville, Fla.
		Official Analysis...	16.25	0.71	0.84	7.55	4.81	5.00	

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FEEDING STUFF SECTION.

R. E. ROSE, State Chemist. SPECIAL FEEDING STUFF ANALYSES, 1912. E. PECK GREENE, Asst. Chemist.

Samples Taken by Purchaser Under Section 9, Act Approved May 24, 1908.

NAME, OR BRAND.	Laboratory Number.	Fibre.	Protein.	Moisture, Free Acid, (Marsh and Sugar.)	Fat.	Ash.	BY WHOM SENT.
Pine Leaf Middlings.....	205	9.81	15.85	51.10	3.55	7.22	Streis & Freeman, Tampa, Fla.
Economy Horse and Mule Feed.....	206	12.08	17.85	40.24	3.15	3.40	H. F. Howard, Tallahassee, Fla.
Cotton Seed Meal.....	210		28.87				William Bonifay, Milton, Fla.
Cotton Seed Meal.....	211		28.71				Harvey Cantlin, DeFuniak Springs, Fla.
Cotton Seed Meal.....	212		29.80				A. J. Crutfield, Ocala, Fla.
Cotton Seed Meal.....	213		28.75				Sam Woodberry, Quincy, Fla.
Cotton Seed Meal.....	214		28.82				L. E. Gordon, Hawthorn, Fla.
Cotton Seed Meal.....	215		28.88				Sam Woodberry, Quincy, Fla.
Cotton Seed Meal.....	216		28.82				J. W. Plant, Pace, Fla.
Cotton Seed Meal.....	217	9.83	42.23	24.82	7.85	4.37	David Mitchell, Milton, Fla.
Cotton Seed Meal.....	218		27.74				C. C. Liddon, Marianna, Fla.
Cotton Seed Meal.....	219		28.71				L. M. Owens, Quincy, Fla.
Cotton Seed Meal.....	220		28.20				J. L. Owens, Quincy, Fla.
Cotton Seed Meal.....	221		28.58				R. C. Collier, Milton, Fla.
Cotton Seed Meal.....	222		27.82				J. M. Hamilton, Milton, Fla.
Corn Feed.....	223	12.37	10.79	38.35	3.67	3.92	The A. L. Wilson Co., Quincy, Fla.
Horse Mashie.....	224	24.12	9.55	45.37	4.18	7.50	R. E. Rose, Tallahassee, Fla.
Palm Seed.....	225	18.22	9.37	37.35		1.59	J. A. Jefford, Havana, Cuba.
Mixed Feed.....	226	12.27	10.62	48.74	4.18	7.72	Consolidated Grocery Co., Tampa, Fla.

SPECIAL FEEDING STUDY ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.	Fibers.	Proteins.	Starch, Sugar, Glycerin and Resin.	Fat.	Ash.	BY WHOM SENT.
Scratch Feed	1116	9.37	11.14	82.52	2.99	2.24	Chas. L. West, Oviedo, Fla.
Scratch Feed	1117	9.37	11.14	82.52	2.99	2.24	Chas. L. West, Oviedo, Fla.
Cotton Seed Meal	1118	.....	46.82	.....	.....	.....	D. C. Lanston, Pace, Fla.
Kidney Hay	1119	26.24	12.77	49.79	4.20	5.87	C. E. Pinn, Chipley, Fla.
Feed	1120	11.12	15.26	48.02	2.02	7.94	H. J. Masters, St. Augustine, Fla.
Cowpea Hay No. 1	1121	15.89	15.53	46.92	2.58	6.19	S. E. Bell, Tallahassee, Fla.
Cowpea Hay No. 2	1122	18.85	15.50	45.50	4.27	8.25	S. E. Bell, Tallahassee, Fla.
Stack (Pond)	1123	5.66	6.58	59.59	.....	12.50	I. G. Carter, Volusia, Fla.
Velvet Bean Halls	1124	27.72	7.45	44.50	8.27	4.22	L. M. Lewis, Havana, Fla.
Stack Feed	1125	11.44	19.32	52.65	2.17	5.26	W. D. Morley, Palatka, Fla.
Kennedy Feed	1126	11.01	12.69	52.86	2.51	5.26	H. F. Howard, Tallahassee, Fla.
Galton Seed	1127	.....	58.74	.....	.....	.....	American Sausage Tobacco Co., Quincy, Fla.
Galton Seed Meal No. 1	1128	.....	29.85	.....	.....	.....	W. E. Giles, Orlando, Fla.
Galton Seed Meal No. 2	1129	.....	46.65	.....	.....	.....	W. E. Giles, Orlando, Fla.
Maize	1130	5.62	20.01	52.57	6.19	6.55	H. A. Jackson, Tampa, Fla.
Galton Seed Meal	1131	.....	71.29	.....	.....	.....	Palmer Sylvester, Hixon, Fla.
Produce Japanese Sugar Cane	1132	39.54	0.92	29.71	6.62	1.12	H. E. How, Tallahassee, Fla.
Air-Dry Japanese Sugar Cane	1133	28.22	11.29	42.51	4.55	2.71	H. E. How, Tallahassee, Fla.

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FEEDING STUFF SECTION.

R. E. ROSE, State Chemist.

OFFICIAL FEEDING STUFF ANALYSER, 1911. H. PECK GREEN, Asst. Chemist.

Samples Taken by State Chemist and State Inspector Under Sections 1, 2 and 13, Act Approved May 24, 1905.

NAME OR BRAND.	Laboratory Number.		Fibre.	Protein.	Nitrogen, Free Aka. (Glucose and Sugar.)	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Shana Hen Feed.....	1287	Garrett's Analysis	2.80	16.00	68.00	2.50	.....	Edgar-Morgan Co., Memphis, Tenn.
		Official Analysis...	2.50	16.00	68.50	2.00	1.25	
Chicken Feed	1288	Garrett's Analysis	6.00	19.00	69.00	2.00	.....	Edwards-Dunbar's Com. Co., St. Louis, Mo.
		Official Analysis...	2.00	19.00	68.41	2.51	1.25	
Wheat Bran	1248	Garrett's Analysis	8.48	14.20	54.16	2.75	.....	Texas Star Flour Mills, Galves- ton, Tex.
		Official Analysis...	7.49	15.52	55.22	2.79	5.17	
Corn Meal Stock Feed.....	1250	Garrett's Analysis	11.50	12.00	55.00	4.00	.....	Edgar-Morgan Co., Memphis, Tenn.
		Official Analysis...	17.24	13.80	46.88	2.10	5.75	
Blue E. Feed.....	1285	Garrett's Analysis	13.00	16.00	.....	2.00	.....	J. Zimmerman's Co., Mobile, Ala.
		Official Analysis...	2.00	16.49	79.00	2.11	1.34	
Sea Island Cotton Seed	1282	Garrett's Analysis	.....	22.17	.....	.....	.....	The Southern Cotton Oil Co., Charleston, S. C.
Meal		Official Analysis...	.....	23.91	.....	.....	.....

OFFICIAL FEEDING STUFF ANALYSES, 1912—Continued

NAME, OR BRAND.	Laboratory Number.		Fibre.	Protein.	Nitrogen-Free Extract (expressed as dry matter.)	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Vin Horse Feed.....	1253	General's Analysis.....	12.08	16.80	54.80	3.50	.....	The Quaker Oats Co., Chicago, Ill.
		Official Analysis..	11.50	16.84	60.45	4.75	4.25	
Ship Stuff	1254	General's Analysis.....	7.00	14.50	44.00	4.50	.....	The Dunlop Mills, Richmond, Va.
		Official Analysis..	7.15	15.94	56.70	3.91	4.26	
Standard Cotton Seed Meal	1255	General's Analysis.....	.....	29.52	.....	.....	.....	Georgia Cotton Oil Co., Greenville, Ga.
		Official Analysis..	.....	29.80	.....	.....	.....
International Horse & Mule Feed	1256	General's Analysis.....	12.00	12.50	58.00	3.50	.....	International Sugar Feed Co., Memphis, Tenn.
		Official Analysis..	12.19	12.02	55.50	3.00	7.15	
"Arab" Horse Feed.....	1257	General's Analysis.....	15.00	5.00	18.00	2.00	.....	M. C. Lyons Mill Co., Omaha, Neb.
		Official Analysis..	14.78	16.71	41.02	1.80	4.32	
International Horse & Mule Feed	1258	General's Analysis.....	12.00	12.50	54.00	3.50	.....	International Sugar Feed Co., Memphis, Tenn.
		Official Analysis..	11.53	14.24	51.52	3.01	7.50	
Winifred's Horse Feed.....	1259	General's Analysis.....	12.00	16.25	55.00	3.25	.....	Winifred's Mills, Nebraska City, Neb.
		Official Analysis..	11.30	14.43	57.50	1.38	5.70	
Corn's Cross Horse Feed...	1260	General's Analysis.....	3.00	16.00	60.00	3.25	.....	The Quaker Oats Co., Chicago, Ill.
		Official Analysis..	3.78	13.00	54.00	3.11	4.60	

Green Cross Horse Feed...	1251	Guarant'd Analysis Official Analysis...	8.00 10.83	10.00 10.41	60.00 60.57	1.25 1.17	..... 1.78	The Quaker Oats Co., Chicago, Ill.
Good Luck Feed.....	1252	Guarant'd Analysis Official Analysis...	8.75 11.77	12.00 14.20	57.00 58.75	1.80 2.05	..... 1.58	Good Luck Mills, St. Louis, Mo.
Party Horse & Cattle Feed	1253	Guarant'd Analysis Official Analysis...	10.00 12.37	11.50 13.50	55.00 57.45	1.00 2.37	..... 1.75	The Great Western Feed Co., St. Louis, Mo.
M. Middlings	1254	Guarant'd Analysis Official Analysis...	5.75 7.00	17.51 17.55	54.44 54.75	4.40 4.40	4.55 4.74	Hecker - Jones-Jewell Milling Co., New York, N. Y.
Tennessee Horse Feed...	1255	Guarant'd Analysis Official Analysis...	12.00 9.75	10.00 10.00	55.00 61.15	2.50 4.00	..... 1.54	Union City Grain & Feed Co., Union City, Tenn.
Crown Dairy Feed.....	1256	Guarant'd Analysis Official Analysis...	10.50 20.30	11.50 15.50	45.00 46.21	5.50 4.43	..... 5.54	The Crown Mills Co., St. Louis, Mo.
Victor Feed	1257	Guarant'd Analysis Official Analysis...	12.00 4.50	1.50 8.25	62.00 59.64	2.00 4.00	..... 1.65	The Quaker Oats Co., Chicago, Ill.
Middlings	1258	Guarant'd Analysis Official Analysis...	5.50 9.72	16.00 17.11	57.00 58.79	5.00 4.90	..... 1.60	H. C. Cole Milling Co., Chester, Ill.
Ship Staff	1259	Guarant'd Analysis Official Analysis...	7.00 8.00	14.20 14.20	54.00 57.20	4.00 5.00	..... 4.32	The Danlop Mills, Richmond, Va.
Cotton Seed Meal.....	1270	Guarant'd Analysis Official Analysis...	..... .....	25.52 29.22	..... .....	..... .....	..... .....	The Gauding Fertilizer Works, Pensacola, Fla.
Cotton Seed Meal.....	1271	Guarant'd Analysis Official Analysis...	..... .....	25.62 29.52	..... .....	..... .....	..... .....	Salsbridge Oil Co., Salsbridge, Ga.

OFFICIAL FEEDING STUFF ANALYSES, 1912—Continued.

NAME OR BRAND.	Laboratory Number.		Fibre.	Protein.	Nitrogen Free Bats. (Moist and Sugar.)	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Chicken Feed	1272	Garrett's Analysis	4.80	11.00	65.56	2.49	.....	Babston Purina Co., St. Louis, Mo.
		Official Analysis...	2.82	11.47	66.52	2.45	2.32	
Mixed Poultry Feed.....	1273	Garrett's Analysis	.....	.....	.....	.....	.....	Midland Mixed Food Co., Kansas City, Mo.
		Official Analysis...	6.37	26.05	49.45	4.40	19.45	
Purina Feed	1274	Garrett's Analysis	9.80	12.50	55.56	4.89	.....	Babston Purina Co., St. Louis, Mo.
		Official Analysis...	11.52	13.30	54.51	4.72	1.00	
Tennessee Horse Feed....	1275	Garrett's Analysis	12.89	16.09	55.06	2.58	.....	Union City Grains & Feed Co., Union City, Tenn.
		Official Analysis...	9.39	16.88	55.99	2.92	4.97	
White Dove Feed.....	1276	Garrett's Analysis	.....	13.00	.....	5.89	.....	Cassels Mills, Gadsden, Ala.
		Official Analysis...	2.52	11.85	62.26	2.58	1.40	
Oryzella Stock Feed.....	1277	Garrett's Analysis	11.58	13.00	55.06	4.99	.....	Edgar-Morgan Co., Memphis, Tenn.
		Official Analysis...	8.74	13.87	57.58	3.99	5.97	
Imperial Horse & Mule Feed	1278	Garrett's Analysis	12.89	11.00	58.10	5.10	.....	K. & H. Newstead, New Orleans, La.
		Official Analysis...	11.89	11.53	58.05	4.67	4.85	
Liberty Feed	1279	Garrett's Analysis	12.89	16.75	58.06	4.89	.....	Natchitoches Feed & Milling Co., New Orleans, La.
		Official Analysis...	12.85	11.29	58.17	3.54	1.15	

Dried Beet Pulp	1280	Guarant'd Analysis	50.00	1.00	51.00	0.50	.....	Michigan Sugar Co., Sberwaling,
		Official Analysis...	12.77	1.16	13.93	0.23	2.20	Mich.
Riverside Dairy Feed.....	1281	Guarant'd Analysis	14.00	18.00	32.00	4.00	.....	Webb & Maury, Memphis,
		Official Analysis...	14.00	20.71	34.71	6.52	6.82	Tenn.
Quaker Dairy Molasses Feed	1282	Guarant'd Analysis	12.00	16.00	28.00	2.50	.....	The Quaker Oats Co., Chicago,
		Official Analysis...	17.25	14.25	31.50	2.80	7.24	Ill.
Corso Horse & Mule Feed.	1283	Guarant'd Analysis	12.00	10.00	22.00	2.50	.....	The Corso Mills Co., St. Louis,
		Official Analysis...	12.94	10.20	23.14	3.52	3.77	Mo.
Success Horse & Mule Feed	1284	Guarant'd Analysis	12.00	10.00	22.00	2.50	.....	American Milling Co., Chicago,
		Official Analysis...	9.12	11.04	20.16	2.29	2.27	Ill.
Economy Horse & Mule Feed	1285	Guarant'd Analysis	12.00	10.00	22.00	4.00	.....	K. & E. Newmond, New Or-
		Official Analysis...	11.32	11.05	22.37	4.28	4.41	leans, La.
Nutrilite Momyk Feed....	1286	Guarant'd Analysis	17.00	12.00	29.00	4.50	.....	Nutrilite Milling Co., Crowley,
		Official Analysis...	9.50	16.82	26.32	8.85	7.11	La.
Success Dairy Feed.....	1287	Guarant'd Analysis	12.00	16.50	28.50	2.50	.....	American Milling Co., Chicago,
		Official Analysis...	2.90	15.47	18.37	5.97	7.10	Ill.
Best Feed	1288	Guarant'd Analysis	12.00	9.00	21.00	2.00	.....	Quaker Oats Co., Chicago, Ill.
		Official Analysis...	10.15	9.50	19.65	2.15	2.29	
Imperial Horse Feed.....	1289	Guarant'd Analysis	12.00	11.00	23.00	5.00	.....	K. & E. Newmond, New Or-
		Official Analysis...	18.22	11.51	29.73	4.28	5.82	leans, La.
Nutlie Horse & Mule Feed	1290	Guarant'd Analysis	12.00	11.00	23.00	5.00	.....	Nutlie Feed & Milling Co., New
		Official Analysis...	11.20	12.24	23.44	4.00	4.88	Orleans, La.

OFFICIAL FEEDING STUFF ANALYSES, 1912—(Continued.)

NAME OR BRAND	Laboratory Number		Fiber	Protein	Moisture Free Basis (Official method)	Fat	Ash	NAME AND ADDRESS OF MANUFACTURER
Home Feed	1291	Garrett's Analysis	7.86	9.50	87.99	7.90	.....	American Hominy Co., Indian- apolis, Ind.
		Official Analysis...	7.47	11.14	88.79	6.20	2.70	
Kornfalls Feed	1292	Garrett's Analysis	12.96	12.68	90.95	2.95	4.25	Kornfalls Feed Milling Co., Kansas City, Mo.
		Official Analysis...	12.95	13.63	91.95	2.95	4.25	
Wheat Feed	1293	Garrett's Analysis	5.89	14.59	87.09	2.59	.....	Atlanta Milling Co., Atlanta, Ga.
		Official Analysis...	7.47	16.27	85.85	4.45	5.37	
Stafette Shorts	1294	Garrett's Analysis	16.89	14.95	85.89	16.00	.....	Stafette Feed & Milling Co., New Orleans, La.
		Official Analysis...	16.32	14.27	85.29	5.25	5.25	
Pure Wheat Bran.....	1295	Garrett's Analysis	9.89	14.75	87.55	4.89	.....	The Dunlap Milling Co., Clarke- ville, Tenn.
		Official Analysis...	9.15	15.52	85.84	4.80	5.50	
Pure Winter Wheat Bran...	1296	Garrett's Analysis	9.58	14.55	84.88	4.89	.....	Standard-Tilton Milling Co., El- Louis, Mo.
		Official Analysis...	9.27	15.47	82.75	4.19	7.75	
Home Feed	1297	Garrett's Analysis	5.89	9.00	85.99	8.58	.....	Dobson-Walker Milling Co., Union City, Tenn.
		Official Analysis...	6.27	11.41	87.94	6.77	2.58	
Stafette Feed	1298	Garrett's Analysis	8.89	15.95	88.24	4.29	.....	Hopkinsville Milling Co., Hop- kinsville, Ky.
		Official Analysis...	7.52	15.12	85.41	5.75	5.12	

M. Middings	1288	Guaran't Analysis	5.78	17.81	54.44	5.49	4.18	Hecker-Jones-Jewell Co., New York, N. Y.
		Official Analysis...	6.83	17.81	58.21	4.60	5.24	
Ship Staff	1289	Guaran't Analysis	7.89	14.58	54.09	4.89	.....	The Denlow Mills, Richmond, Va.
		Official Analysis...	5.32	17.06	58.04	3.28	4.50	
Choice Feed	1290	Guaran't Analysis	7.97	15.00	54.00	3.26	.....	Empire Mills Co., Columbus, Ga.
		Official Analysis...	8.23	14.70	57.55	3.17	5.22	
Home Feed	1292	Guaran't Analysis	7.09	9.56	67.83	7.49	.....	American Homeing Co., Indianapolis, Ind.
		Official Analysis...	5.42	11.41	65.98	5.62	4.74	
Cracker Male Feed.....	1293	Guaran't Analysis	12.60	18.00	58.00	3.58	.....	The Quaker Oats Co., Chicago, Ill.
		Official Analysis...	12.26	18.75	59.99	3.77	3.89	
Shorts	1294	Guaran't Analysis	5.70	17.81	54.44	6.49	4.50	Hecker-Jones-Jewell Co., New York, N. Y.
		Official Analysis...	6.77	17.72	58.62	4.69	5.22	
White Dove Feed.....	1295	Guaran't Analysis	3.50	13.69	.....	5.98	.....	Cassels Mills, Gadsden, Ala.
		Official Analysis...	3.43	12.72	67.44	3.50	3.89	
Pure Winter Brown Mid-Chops	1296	Guaran't Analysis	4.30	14.70	53.50	3.50	.....	C. A. Gambrell Mfg. Co., Baltimore, Md.
		Official Analysis...	7.20	17.12	53.50	4.17	5.92	
Cracker Male Feed.....	1297	Guaran't Analysis	12.60	18.00	58.00	3.50	.....	The Quaker Oats Co., Chicago, Ill.
		Official Analysis...	12.20	16.82	64.95	2.60	3.81	
Pure White Bran.....	1298	Guaran't Analysis	3.50	14.50	48.00	4.00	.....	Mountain City Mills Co., Chattanooga, Tenn.
		Official Analysis...	8.82	15.97	54.91	3.09	4.29	
Banner Feed	1299	Guaran't Analysis	10.50	9.75	62.90	3.75	.....	The Quaker Oats Co., Chicago, Ill.
		Official Analysis...	10.25	16.27	62.14	3.19	3.50	

OFFICIAL FEEDING STUFF ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.		Fibre.	Protein.	Averages from Vol. analyses and Report.	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURERS.
Pure Wheat Brown Middings	1210	Guarant'd Analysis Official Analysis...	8.29 8.32	16.79 16.69	22.26 22.71	2.26 4.26	..... 4.85	C. A. Garbrell Mfg. Co., Baltimore, Md.
Choice Bran	1211	Guarant'd Analysis Official Analysis...	9.49 19.27	11.92 12.27	22.25 22.17	5.25 2.82	..... 6.66	Hecker-Jones-Jewell Milling Co., New York, N. Y.
Pure Wheat Middings....	1212	Guarant'd Analysis Official Analysis...	5.18 4.27	17.11 17.11	28.19 28.24	4.42 2.89	..... 2.54	Geo. F. Plant Milling Co., St. Louis, Mo.
Shells	1213	Guarant'd Analysis Official Analysis...	5.79 7.82	17.41 17.29	24.44 25.21	6.49 2.59	4.52 4.57	Hecker-Jones-Jewell Milling Co., New York, N. Y.
M. Middings	1214	Guarant'd Analysis Official Analysis...	5.79 8.75	17.81 17.55	24.44 25.19	6.49 4.82	4.52 5.69	Hecker-Jones-Jewell Milling Co., New York, N. Y.
Feed Meal	1215	Guarant'd Analysis Official Analysis...	8.26 5.17	15.26 15.26	46.99 46.25	5.26 2.55	..... 4.77	Mountain City Mills Co., Chattanooga, Tenn.
Imperial Feed	1216	Guarant'd Analysis Official Analysis...	6.69 7.79	16.99 17.99	46.99 47.54	2.59 2.79	..... 6.79	J. H. Chamberlain Co., St. Louis, Mo.
Pure Wheat Bran.....	1217	Guarant'd Analysis Official Analysis...	9.59 7.82	11.59 11.59	22.99 22.42	1.99 2.99	..... 6.12	Mountain City Mills Co., Chattanooga, Tenn.

Nutriline Stock Feed.....	1218	Guarant'd Analysis Official Analysis..	12.00 4.48	11.00 11.03	22.00 62.77	4.50 2.67	..... 4.62	Nutriline Milling Co., Crowley, La.
Nutriline Stock Feed.....	1219	Guarant'd Analysis Official Analysis..	12.00 8.08	11.00 12.43	22.00 58.85	4.50 4.67	..... 5.67	Nutriline Milling Co., Crowley, La.
Globe Gluten Feed.....	1220	Guarant'd Analysis Official Analysis..	..... 7.40	22.00 25.10	21.00 48.40	2.50 2.15	..... 3.50	Corn Products Refining Co., New York, N. Y.
Dominion Scratch Feed.....	1221	Guarant'd Analysis Official Analysis..	4.60 2.14	10.00 9.21	44.00 94.28	2.40 2.98	..... 21.40	Standard Feed Mills, Atlanta, Ga.
Parina Feed	1222	Guarant'd Analysis Official Analysis..	9.80 11.10	12.00 13.16	24.00 56.43	4.00 4.22	..... 4.54	Ediston Parina Co., St. Louis, Mo.
Arrow Mixed Feed.....	1223	Guarant'd Analysis Official Analysis..	4.00 2.80	10.84 10.73	45.00 95.91	2.50 2.62	..... 2.79	Steinmoch Feed Co., St. Louis, Mo.
Banner Feed	1224	Guarant'd Analysis Official Analysis..	20.50 20.68	9.75 9.65	42.00 90.27	2.50 2.62	..... 4.65	The Quaker Oats Co., Chicago, Ill.
Pure Wheat Brown Mid- Stings	1225	Guarant'd Analysis Official Analysis..	8.38 7.60	16.70 16.47	22.50 22.71	2.24 2.25	..... 2.42	C. A. Gambrell Mig. Co., Balti- more, Md.
Curco Horse & Mule Feed.	1226	Guarant'd Analysis Official Analysis..	12.00 16.37	10.80 11.32	24.00 52.98	1.50 2.80	..... 4.37	The Curco Mills Co., St. Louis, Mo.
U.S.I. Feed "A" Grade..	1227	Guarant'd Analysis Official Analysis..	14.40 14.12	13.83 12.13	53.47 52.58	2.12 2.57	..... 4.88	United Grocery Co., Jackson- ville, Fla.
Victor Feed	1228	Guarant'd Analysis Official Analysis..	12.00 11.99	7.50 9.04	42.00 62.26	2.00 2.67	..... 3.78	The Quaker Oats Co., Chicago, Ill.

OFFICIAL FEEDING STUFF ANALYSES, 1911.—(Continued.)

NAME, OR BRAND.	Laboratory Number.		Fiber.	Protein.	Starch. Free Glu- cose and Maltose.	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Pure Alfalfa Meal.....	1229	Garrett's Analysis Official Analysis...	20.99 14.58	12.95 12.75	17.50 17.13	1.55 2.05	..... 8.57	The Wichita Alfalfa Stock Feed Co., Wichita, Kan.
Pure Winter Wheat Bran.....	1230	Garrett's Analysis Official Analysis...	8.95 9.27	14.55 13.52	51.95 52.35	4.65 4.28	..... 6.57	National Feed Co., St. Louis, Mo.
Shorts	1231	Garrett's Analysis Official Analysis...	5.75 5.82	12.51 12.38	54.44 54.57	5.42 4.72	4.55 5.21	Hacker-Jones-Jewell Co., New York, N. Y.
Cotton Seed Meal.....	1232	Garrett's Analysis Official Analysis...	.....	28.62 28.79	.....	.....	.....	Georgia Cotton Oil Co., Macon, Ga.
Medium Grade Cotton Seed Meal	1233	Garrett's Analysis Official Analysis...	.....	28.62 24.24	.....	.....	.....	Eufala Oil Co., Eufala, Ala.
Standard Grade Cotton Seed Meal	1234	Garrett's Analysis Official Analysis...	.....	28.62 29.74	.....	.....	.....	Polkum Oil & Fertilizer Co., Polkum, Ga.
Parina Molasses Feed.....	1235	Garrett's Analysis Official Analysis...	12.05 10.22	15.16 9.43	53.88 1.85	3.55 3.25	..... 6.55	Habison Parina Co., St. Louis, Mo.
Raw Feed	1236	Garrett's Analysis Official Analysis...	12.85 11.15	16.58 18.31	52.55 52.24	3.55 3.48	..... 7.45	International Sugar Feed Co., Memphis, Tenn.

Stud Horse Feed.....	1337	Guarant'd Analysis Official Analysis...	12.00 8.79	16.25 12.65	16.00 16.40	4.00 4.65	.....	K. & E. Newmond, New Or- leans, La.
Liberty Horse Feed.....	1338	Guarant'd Analysis Official Analysis...	12.00 9.55	16.25 19.12	16.00 17.49	4.00 4.29	.....	Stables Feed & Milling Co., New Orleans, La.
Domino Feed.....	1339	Guarant'd Analysis Official Analysis...	12.00 10.58	16.25 9.26	16.00 14.89	3.00 2.81	.....	Cairo Milling Co., Cairo, Ill.
"Star" Cold Pressed Feed	1340	Guarant'd Analysis Official Analysis...	20.00 21.59	26.00 26.24	46.00 22.47	4.00 5.24	.....	Sea Island Cotton Oil Co., Charleston, S. C.
Harlem Brand Cotton Seed Meal.....	1341	Guarant'd Analysis Official Analysis...	18.00 19.50	22.77 21.77	..... 24.82	7.00 5.45	.....	Florida Cotton Oil Co., Jackson- ville, Fla.
Heavy Draught Feed.....	1342	Guarant'd Analysis Official Analysis...	4.20 4.48	14.25 16.42	42.42 45.41	2.42 3.00	.....	United Grocery Co., Jackson- ville, Fla.
Standard Grade Cotton Seed Meal.....	1343	Guarant'd Analysis Official Analysis...	..... .....	25.42 26.00	..... .....	..... .....	.....	Bainbridge Oil Co., Bainbridge, Ga.
Omega Stock Feed.....	1344	Guarant'd Analysis Official Analysis...	12.00 12.53	12.00 15.17	16.00 18.22	5.00 4.35	.....	Webb & Maury, Memphis Tenn.
Pawnee Feed.....	1345	Guarant'd Analysis Official Analysis...	12.00 13.03	8.25 9.17	42.00 37.50	2.50 4.20	.....	National Oats Co., St. Louis, Mo.
Asst Patsy's Poultry Feed.	1346	Guarant'd Analysis Official Analysis...	7.28 9.10	15.00 17.11	14.22 18.22	4.50 3.42	.....	The Asst Patsy Poultry Feed Co., Memphis, Tenn.
Schumaker Special Horse Feed.....	1347	Guarant'd Analysis Official Analysis...	8.00 7.42	9.25 11.22	14.50 12.50	3.25 4.02	.....	The Quaker Oats Co., Chicago, Ill.

OFFICIAL FEEDING STUFF ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.		Price.	Protein.	Moisture free basis (moisture and ether).	Pal.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Messiah Stock Feed.....	1348	Guarant'd Analysis Official Analysis...	12.08 12.80	14.08 14.84	48.84 52.87	2.58 2.55	..... 8.20	Webb & Meary, Memphis, Tenn.
Luxury Hen Feed.....	1349	Guarant'd Analysis Official Analysis...	2.50 2.81	18.80 12.85	68.00 68.48	2.70 2.77	..... 2.31	Union City Grain and Feed Co., Union City, Tenn.
Corn Feed	1350	Guarant'd Analysis Official Analysis...	12.89 12.17	10.24 22.14	52.55 48.25	2.50 4.85	..... 7.09	International Sugar Feed Co., Memphis, Tenn.
Corn Feed	1351	Guarant'd Analysis Official Analysis...	12.00 12.05	10.20 20.09	52.00 44.84	2.50 5.14	..... 7.18	International Sugar Feed Co., Memphis, Tenn.
Perfection Horse Feed....	1352	Guarant'd Analysis Official Analysis...	12.80 12.17	10.20 11.24	54.00 45.00	2.80 4.25	..... 6.50	Omaha Atlantic Milling Co., Oma- ha, Neb.
Wash Co Horse & Mule Feed	1353	Guarant'd Analysis Official Analysis...	..... 6.42	12.00 12.75	50.00 54.24	2.80 4.81	..... 5.10	Wash Co Atlantic Milling Co., Ft. Collins, Neb.
Standard Feed	1354	Guarant'd Analysis Official Analysis...	10.00 2.24	14.20 22.12	51.00 50.27	2.50 2.75	..... 14.17	Standard Feed Co., Atlanta, Ga.
Atlas Feed	1355	Guarant'd Analysis Official Analysis...	..... 10.46	11.80 14.80	57.80 56.88	2.25 2.50	..... 8.17	Harward & Hecker, Tampa, Fla.

Imperial Feed	1250	Guarant'd Analysis Official Analysis...	6.60 5.84	16.80 16.78	66.00 61.53	2.50 2.88	.....	F. B. Chamberlain Co., St. Louis, Mo.
Ground Corn and Oats....	1257	Guarant'd Analysis Official Analysis...	..... 5.37	9.37 11.41	67.59 62.58	4.48 4.09	.....	Barnard & Heister, Tampa, Fla. 4.48
Asst. Pater's Poultry Feed.	1258	Guarant'd Analysis Official Analysis...	7.28 7.29	15.68 16.58	54.12 52.99	4.50 4.62	5.34	The Asst. Pater Poultry Feed Co., Memphis, Tenn. 7.92
Parina Feed	1259	Guarant'd Analysis Official Analysis...	6.80 6.52	12.58 12.95	58.93 58.58	4.08 2.55	.....	Ralston Parina Co., St. Louis, Mo. 5.39
Standard Cotton Seed Meal	1260	Guarant'd Analysis Official Analysis...	11.90 10.37	38.62 39.19	29.40 26.57	7.00 6.90	.....	Flash-Hunter Commission Co., Atlanta, Ga. 9.20
Warren Dairy Feed.....	1261	Guarant'd Analysis Official Analysis...	12.00 11.38	16.50 17.29	60.60 48.49	2.50 2.45	.....	American Milling Co., Chicago, Ill. 4.45
Segration Stock Feed....	1262	Guarant'd Analysis Official Analysis...	..... 11.94	11.65 12.00	64.00 54.37	1.50 2.40	.....	G. E. Patterson & Co., Memphis, Tenn. 4.25
Imperial Horse Feed.....	1263	Guarant'd Analysis Official Analysis...	12.00 11.76	11.00 11.44	53.00 55.50	4.50 4.28	.....	K. & F. Newwood, New Orleans, La. 1.16
Star Molasses Feed.....	1264	Guarant'd Analysis Official Analysis...	12.50 12.50	10.40 10.37	57.00 52.19	2.50 2.25	.....	Illinois Feed Mills, St. Louis, Mo. 5.12
"Wildfire" Feed	1265	Guarant'd Analysis Official Analysis...	12.00 12.15	18.20 19.44	58.00 57.84	3.00 3.10	.....	Permonator Co., Jacksonville, Fla. 4.60
Quaker Dairy Molasses Feed	1266	Guarant'd Analysis Official Analysis...	14.00 12.89	16.40 16.70	50.00 48.38	3.50 3.49	.....	The Quaker Oats Co., Chicago, Ill. 1.15

OFFICIAL FEEDING STUFF ANALYSES, 1912.—(Continued.)

NAME, OR BRAND.	Laboratory Number.		Fiber.	Protein.	Starch, Dextrin, Glycogen and Sugar.	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Maas Rice Special Chicken Feed	1345	Guarant'd Analysis	4.90	11.00	60.00	2.00	.....	Edgar Morgan Co., Memphis, Tenn.
		Official Analysis...	3.95	14.25	62.25	2.35	1.82	
"Blue" Cold Pressed Food Meal	1346	Guarant'd Analysis	20.00	24.00	40.00	6.00	.....	Sea Island Cotton Oil Co., Charleston, S. C.
		Official Analysis...	18.25	25.50	36.46	6.25	4.70	
Ship Stuff	1349	Guarant'd Analysis	7.00	14.50	54.50	4.00	.....	The Dunlop Mills, Richmond, Va.
		Official Analysis...	7.90	17.11	51.92	3.55	4.70	
Luxury Horse Feed.....	1370	Guarant'd Analysis	12.00	10.00	55.00	2.50	.....	Union City Grains & Feed Co., Union City, Tenn.
		Official Analysis...	12.00	11.67	57.07	4.20	4.25	
U-N-I Dairy Feed.....	1371	Guarant'd Analysis	11.00	21.00	47.51	3.98	.....	United Grocery Co., Jackson- ville, Fla.
		Official Analysis...	8.27	21.75	44.34	2.91	5.62	
Corno Horse and Mule Feed	1372	Guarant'd Analysis	12.00	10.00	50.50	2.50	.....	The Corno Mills Co., St. Louis, Mo.
		Official Analysis...	10.95	12.72	52.88	2.82	5.01	
Cotton Seed Meal.....	1373	Guarant'd Analysis	10.00	24.00	31.00	3.00	.....	Farmers' Oil Mills, Anderson, S. C.
		Official Analysis...	10.05	23.50	31.50	3.07	4.00	
Children Feed	1374	Guarant'd Analysis	4.00	10.00	60.00	2.00	.....	Hobinson Danforth Co., St. Louis, Mo.
		Official Analysis...	2.90	11.12	61.62	1.96	5.52	

Star Middings	1275	Guarant'd Analysis Official Analysis...	4.00 3.27	12.80 17.55	24.00 31.68	4.00 3.28	..... 1.75	Star & Crescent Milling Co., Chicago, Ill.
Statenoch Mixed Feed....	1276	Guarant'd Analysis Official Analysis...	4.00 19.90	10.00 26.65	22.00 26.17	1.50 4.48	..... 1.98	Statenoch Feed Co., St. Louis, Mo.
Cornfla Stock Feed.....	1277	Guarant'd Analysis Official Analysis...	11.50 11.22	17.00 22.47	33.00 33.92	4.00 2.88	..... 4.75	Edgar Morgan Co., Memphis, Tenn.
Peck's Male Feed.....	1278	Guarant'd Analysis Official Analysis...	11.90 9.72	16.80 14.22	37.00 32.34	3.50 7.05	..... 8.15	Illiana Feed Mills, St. Louis, Mo.
Liberty Horse Feed.....	1279	Guarant'd Analysis Official Analysis...	12.00 9.70	16.25 11.54	36.00 32.19	4.00 2.50	..... 10.25	Stafolite Feed & Milling Co., New Orleans, La.
XX Good Molasses Feed....	1280	Guarant'd Analysis Official Analysis...	12.00 19.20	18.00 19.71	28.00 30.45	1.00 1.90	..... 4.03	Good Luck Mills, St. Louis, Mo.
Cornfla Stock Feed.....	1281	Guarant'd Analysis Official Analysis...	11.50 7.15	17.00 12.80	25.00 24.85	4.00 2.52	..... 7.68	Edgar Morgan Co., Memphis, Tenn.
Stafolite Horse Feed.....	1282	Guarant'd Analysis Official Analysis...	12.00 9.65	11.25 12.25	28.00 30.94	4.50 2.81	..... 4.82	Stafolite Feed & Milling Co., New Orleans, La.
Parina Molasses Feed.....	1283	Guarant'd Analysis Official Analysis...	12.00 10.15	16.00 16.67	36.00 33.44	2.50 2.77	..... 1.98	Ralston Parina Co., St. Louis, Mo.
Navigation Stock Feed....	1284	Guarant'd Analysis Official Analysis...	11.00 11.72	11.25 11.92	41.00 38.28	2.50 1.98	..... 7.20	G. E. Patterson & Co., Memphis, Tenn.
Derby Horse Feed.....	1285	Guarant'd Analysis Official Analysis...	12.00 12.25	16.00 12.00	32.00 31.78	3.25 2.60	..... 1.25	Stafolite Feed & Milling Co., New Orleans, La.

OFFICIAL FEEDING STUFF ANALYSES, 1912.—(Continued.)

NAME OR BRAND.	Laboratory Number.		Fibre.	Protein.	Nitrogen (per 100, unless and stated).	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Blue Melrose Feed.....	1286	Guarant'd Analysis Official Analysis...	12.50 7.90	19.00 17.00	27.00 26.51	2.30 2.57	..... 4.01	Hinds Feed Mills, St. Louis, Mo.
Stafelle Horse Feed.....	1287	Guarant'd Analysis Official Analysis...	12.00 10.27	11.25 11.42	23.00 21.78	4.84 5.02	..... 12.90	Stafelle Feed & Milling Co., New Orleans, La.
Beef Scraps	1288	Guarant'd Analysis Official Analysis...	1.00 1.75	50.00 50.02	10.00 11.52	..... 12.00	..... 12.90	The Frito Co., Philadelphia, Pa.
Nutrie Horse Feed.....	1289	Guarant'd Analysis Official Analysis...	11.00 10.71	11.50 11.37	22.00 20.45	4.50 4.80	..... 4.50	Stafelle Feed & Milling Co., New Orleans, La.
Economy Horse & Mule Feed	1290	Guarant'd Analysis Official Analysis...	12.00 8.00	18.75 12.50	26.00 21.12	4.00 2.85	..... 5.97	K & R, New-orleans, New Orleans, La.
Cotton Seed Feed Meal....	1291	Guarant'd Analysis Official Analysis...	..... 22.35	20.00 22.25	20.00 17.52	5.00 4.75	..... 1.42	Tennessee Fiber Co., Memphis, Tenn.
Glenn Feed	1292	Guarant'd Analysis Official Analysis...	..... 12.00	1.50 20.00	25.00 26.75	2.50 3.02	..... 5.12	The Valley Milling Co., St. Louis, Mo.
Schwabher Special Horse Feed	1293	Guarant'd Analysis Official Analysis...	8.00 8.50	9.75 10.75	21.00 20.50	3.75 4.02	..... 4.20	The Quaker Oats Co., Chicago, Ill.

Alfalfa Meal	1294	Guarant'd Analysis Official Analysis...	20.00 20.00	22.25 24.48	22.00 23.00	1.50 2.50	.....	Clinton Alfalfa Mill Co., Clin- ton, Okla.
Omega Stock Feed.....	1295	Guarant'd Analysis Official Analysis...	12.00 8.22	12.00 17.51	20.00 16.22	5.00 5.40	.....	Webb & Mearry, Memphis, Tenn.
Hominy Feed.....	1296	Guarant'd Analysis Official Analysis...	..... 7.55	8.80 12.25	21.00 20.42	3.00 7.45	.....	Newport Mills Co., London, Tenn.
Pure Wheat Middlings.....	1297	Guarant'd Analysis Official Analysis...	5.18 5.45	17.11 19.21	18.18 21.25	4.41 5.22	.....	Geo. F. Plant Milling Co., St. Louis, Mo.
Peck's Mule Feed.....	1298	Guarant'd Analysis Official Analysis...	11.50 8.45	16.00 13.84	17.00 16.47	1.50 4.25	.....	Illinois Feed Mills, St. Louis, Mo.
Pure Wheat Middlings.....	1299	Guarant'd Analysis Official Analysis...	7.80 7.05	15.00 17.20	16.00 21.52	4.00 3.47	.....	Domestic Flour Milling Co., Kansas City, Mo.
Wheel Horse Feed.....	1300	Guarant'd Analysis Official Analysis...	17.50 17.27	11.00 10.97	16.00 13.43	3.00 4.15	.....	Commonwealth Feed Mills Co., St. Louis, Mo.
Purina Feed	1301	Guarant'd Analysis Official Analysis...	5.80 5.80	12.50 14.74	15.00 13.21	4.00 5.17	.....	Ballston Purina Co., St. Louis, Mo.
International Horse & Mule Feed	1302	Guarant'd Analysis Official Analysis...	12.00 12.32	12.50 12.72	15.00 12.32	1.50 1.52	.....	International Sugar Feed Co., Memphis, Tenn.
Winner Molasses Feed.....	1303	Guarant'd Analysis Official Analysis...	12.00 7.32	16.00 11.52	17.00 16.50	2.50 4.00	.....	Robinson Danfort Co., St. Louis, Mo.
Star Molasses Feed.....	1304	Guarant'd Analysis Official Analysis...	12.00 9.20	16.00 11.00	17.00 14.40	2.50 2.80	.....	Illinois Feed Mills, St. Louis, Mo.

OFFICIAL FEEDING STUFF ANALYSES, 1912.—(Continued.)

NAME, OR BRAND	Laboratory Number		Moist.	Protein.	Starch, Free Cellulose, and Gum.	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Dealy Horse Feed.....	1405	General Analysis Official Analysis...	10.85 7.14	11.86 11.54	55.68 55.71	2.25 4.50	..... 5.54	Stafette Feed & Milling Co., New Orleans, La.
Green Cross Horse Feed..	1895	General Analysis Official Analysis...	10.55 9.89	10.92 11.54	60.00 55.21	3.25 4.48	..... 4.81	The Quaker Oats Co., Chicago, Ill.
Nancy Hank's Horse and Sole Feed	1407	General Analysis Official Analysis...	12.80 10.17	12.50 11.97	50.00 46.82	5.00 5.25	..... 17.75	C. W. Bartleson & Co., Jackson- ville, Fla.
Green Shorts	1404	General Analysis Official Analysis...	8.50 8.40	17.00 16.84	52.00 55.50	2.00 3.50	..... 5.55	The Southwestern Milling Co., Kansas City, Mo.
Navaho Stock Feed.....	1409	General Analysis Official Analysis...	11.50 12.15	21.00 19.21	52.00 46.20	4.00 3.00	..... 7.47	Edgar-Morgan Co., Memphis, Tenn.
Penny Feed	1410	General Analysis Official Analysis...	8.50 8.50	11.00 12.54	40.00 45.70	2.00 4.47	..... 2.20	City Mills Co., Columbus, Ga.
Pure Blood Shorts.....	1411	General Analysis Official Analysis...	8.00 5.37	10.00 11.57	38.00 50.91	4.00 1.50	..... 1.45	Southern Mills, Nashville, Tenn.
Laying Feed	1412	General Analysis Official Analysis...	3.55 3.50	10.50 10.51	55.25 49.70	2.50 5.12	..... 3.54	J. B. Wilcox Co., Nashville, Tenn.

Wheat Shorts	1415	Guarant'd Analysis Official Analysis...	4.00 4.15	12.00 12.57	25.00 25.62	4.00 4.50	5.15	Delmon-Walker Milling Co., Union City, Tenn.
Larve Feed	1416	Guarant'd Analysis Official Analysis...	14.00 14.18	12.80 12.18	28.00 27.97	1.00 1.14	4.00	The Larvona Milling Co., De- troit, Mich.
Mazofita Feed	1417	Guarant'd Analysis Official Analysis...	12.00 1.00	14.00 14.07	28.00 28.15	2.50 3.22	4.97	The Quaker Oats Co., Chicago, Ill.
Burns Dairy Feed.....	1418	Guarant'd Analysis Official Analysis...	12.00 12.72	15.50 15.74	45.00 42.89	1.50 2.25	5.00	American Milling Co., Chicago, Ill.
"King Corn" Horse Feed..	1417	Guarant'd Analysis Official Analysis...	10.00 1.04	1.00 11.12	20.00 27.00	1.50 2.19	7.29	M. C. Peters Mill Co., Omaha, Nebr.
Imperial Horse Feed.....	1418	Guarant'd Analysis Official Analysis...	12.00 1.00	11.00 11.71	22.00 27.27	1.00 2.40	5.40	E. & E. Newsum, New Orleans, La.
Emerald Horse Feed.....	1419	Guarant'd Analysis Official Analysis...	14.00 1.17	11.00 11.27	22.00 27.13	1.25 2.02	5.95	Stafolds Feed and Milling Co., New Orleans, La.
International Horse & Mule Feed	1420	Guarant'd Analysis Official Analysis...	12.00 11.29	12.50 14.00	20.00 20.47	1.50 2.00	4.54	International Sugar Feed Co., Memphis, Tenn.
Standard Cotton Seed Meal	1421	Guarant'd Analysis Official Analysis...	..... .....	28.00 28.70	..... .....	..... .....	.....	King Lumber & Oil Co., Uni- dilla, Ga.
Cotton Seed Meal.....	1422	Guarant'd Analysis Official Analysis...	..... .....	28.00 28.19	..... .....	..... .....	.....	Florida Cotton Oil Co., Jackso- ville, Fla.
Cotton Seed Meal.....	1423	Guarant'd Analysis Official Analysis...	..... .....	28.00 29.18	..... .....	..... .....	.....	Florida Cotton Oil Co., Jackso- ville, Fla.

OFFICIAL FEEDING STUFF ANALYSES, 1912—(Continued.)

NAME, OR BRAND,	Laboratory Number.		Fibers.	Protein.	Minerals Free Fe ₂ O ₃ (Moisture and Ash).	Fat.	Ash.	NAME AND ADDRESS OF MANUFACTURER.
Corn Horse & Mule Feed.	1424	Guarant's Analysis Official Analysis...	12.98 11.14	14.09 11.85	54.94 58.91	2.50 2.49	4.85	The Corn Mills Co., St. Louis, Mo.
Memphis Stock Feed.....	1425	Guarant's Analysis Official Analysis...	12.08 11.25	14.09 14.86	48.00 47.59	2.50 1.55	9.19	Webb & Maury, Memphis, Tenn.
Pure Wheat Bran.....	1426	Guarant's Analysis Official Analysis...	5.58 6.49	15.09 17.27	54.06 49.52	4.00 3.52	1.82	Cadwick Milling Co., Grand View, Ind.
Globe Gluten Feed.....	1427	Guarant's Analysis Official Analysis...	.....	21.80	51.94	2.58	.....	Corn Products Refining Co., New York, N. Y.
Maize Feed	1428	Guarant's Analysis Official Analysis...	12.08 9.22	14.09 15.91	54.06 59.66	2.58 2.17	1.12	The Quaker Oats Co., Chicago, Ill.
Pine Feed	1429	Guarant's Analysis Official Analysis...	8.58 8.47	12.52 12.55	49.06 68.41	1.56 4.75	2.32	Mountain City Mill Co., Chatta- nooga, Tenn.
Native Feed Meal.....	1430	Guarant's Analysis Official Analysis...	.....	19.82 49.22	.....	.....	.....	The Southern Oil Co., Alabama.
Native Feed Meal.....	1431	Guarant's Analysis Official Analysis...	.....	19.82 23.15	.....	.....	.....	The Southern Oil Co., Alabama.

Cotton Seed Meal,	1432	Contract's Analysis	28.62	.....	.....	.....	Quark Oil Co., Quark, Ala.
		Official Analysis	40.78	.....	.....	.....

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FOOD AND DRUG SECTION.

R. E. ROSE, State Chemist.

SPECIAL FOOD ANALYSER, 1912.

A. M. HENRY, Asst. Chemist.

Samples Taken by Purchases Under Section 12, Act Approved June 5, 1911.

ALCOHOLIC DRINKS.

No.	LABEL.	MANUFACTURER.	Alcohol cont. (per cent by volume.)	FROM.
1023	Schnapps Brw	Tampa Distilling Works, Tam- pa, Fla.	Trace	L. A. Hendry, Ft. Myers.
1024	Whiskey .....	.....	42.40	Hutledge Family, Tallahassee.
1025	Beer .....	.....	2.87	H. B. Holland, Brooksville.
1026	Beverage No. 100.....	.....	5.26	Paul Carter, Marianna.
1028	Beverage No. 200.....	.....	5.54	Paul Carter, Marianna.
1021	Beverage No. 300.....	.....	5.15	Paul Carter, Marianna.
1022	Beverage No. 400.....	.....	5.25	Paul Carter, Marianna.
1027	Banquet Beer	Ash Grove Beach Brewing As- sociation, St. Louis.	4.37	J. W. Nelson, Tallahassee.
1025	Beer .....	.....	4.32	J. H. McChesick, Marianna.

1030	Beer	The Florida Brewing Co. Tampa, Fla.	2.25	J. E. McMullen, Center Hill.
1037	Berliner Malt Extract.....	New Orleans Brewing Co...	2.25	Harrell & Co., Chipley.
1038	Cider .....	.....	7.52	F. L. Renschel, Graceville.
1040	Cider .....	.....	7.64	L. A. Dall, Graceville.
1041	Cider .....	.....	6.77	F. H. Kistler, Cottontale.
1042	Beer	The Tampa Brewing Co. Tampa, Fla.	4.54	W. A. Tille, Sanford.
1043	Near Beer .....	.....	1.80	W. A. Tille, Sanford.
1044	Beer	New Orleans Brewing Co...	2.25	G. F. Morris, Baker.
1045	Hop Brew Lager Beer.....	South Atlantic Bottling Co. Jacksonville, Fla.	2.60	South Atlantic Bottling Co., Jackson- ville.
1046	Cider .....	.....	7.39	C. A. Jones, Campbellton.
1047	Cider .....	.....	5.12	W. B. Crawford, Klaimmees.
1048	Root Mende, Alcohol less than 2%, contains 12 ozs.....	Chas. Mann Co., Jacksonville, Fla.	1.55	F. N. Milton, Mayor, Macclenny.
1049	Hop Brew, Alcohol less than 1%, contains 12 ozs.	South Atlantic Bottling Co. Jacksonville Fla.	0.41	South Atlantic Bottling Co., Jackson- ville.
1051	Cider .....	.....	5.87	W. B. Crawford, Klaimmees.

SPECIAL FOOD ANALYSES, 1912.—Continued.

No.	LABEL	MANUFACTURER	Alcohol (per cent by volume)	FROM
1063	Cider .....	.....	5.12	W. H. Crawford, Kinston.
1064	Root Malt Made, Alcohol less than 1%, contains 12 oz.	Chas. Blum Co., Jacksonville, Fla.	1.18	E. R. Sessions, Live Oak.
1067	Cider .....	.....	5.20	A. D. Stanton, Sheriff, Madison.
1091	Beer .....	.....	4.58	A. D. Stanton, Sheriff, Madison.
1092	Beer .....	.....	4.69	A. D. Stanton, Sheriff, Madison.
1212	Imitation Beer .....	.....	6.43	J. L. Sikes, Deputy Sheriff, Ellaville.

SPECIAL FOOD ANALYSES, 1912.—(Continued.)

ORANGES SENT IN BY CITIZENS.

In the last year 299 special samples of oranges and grapefruit have been analyzed. Of these 299 samples, 209 of them were sent by 17 citizens of Florida, for the purpose of a study of the ripening of oranges. These 209 analyses with later ones will be published in a special bulletin later. All samples were prepared for analysis by taking twelve average oranges, they are peeled cut across the plugs and then the juice extracted in an ordinary wooden lemon squeezer. The percentage of juice was then determined and the further analysis made on the juice. The percentage of "Total Sugar as Invert Sugar," "Total Acid as Citric Acid," and the "Ratio of the Total Acid to the Total Sugar" were then determined. The above method of analysis is the method recommended by the Commission appointed by the Commissioner of Agriculture to prepare a standard for mature citrus fruit under The Immature Citrus Fruit Law and adopted by the Citrus Growers' Convention held at Gainesville on August 15, 1912.

No.	DATE.	FROM	VARIETY.	Juice (Per cent.)	ANALYSIS OF JUICE.			TASTE.
					Acid as Citric. (Per cent.)	Sugar as Invert. (Per cent.)	Ratio of Acid to Sugar.	
1020	Jan. 18.	Chase & Co., Sanford.....	Parson Brown.....	.....	9.45	19.95	1 to 21.41	Very Sweet
1021	Jan. 18.	Chase & Co., Sanford.....	Seedlings .....	.....	9.27	19.41	1 to 21.25	Very Sweet
1056	Aug. 28.	A. M. Henry, Tallahassee.....	.....	.....	9.74	21.09	1 to 21.66	Very Sweet
1052	Sept. 14.	A. C. Haynes, Deland.....	.....	.....	1.29	10.44	1 to 8.14	Tart
1055	Sept. 17.	E. B. Peters, Leesburg.....	Parson Brown.....	.....	9.78	4.52	1 to 4.69	Tart
1057	Sept. 18.	A. J. Nye, Orlando.....	Blood .....	.....	1.66	5.87	1 to 5.44	Sour

SPECIAL FOOD ANALYSES, 1912.—(Continued.)
ORANGES.—(Continued.)

Nos.	DATE.	FROM	VARIETY.	Juice (Per cent.)	ANALYSIS OF JUICE			TASTE.
					Acid as Citric, (Per cent.)	Sugar as Invert, (Per cent.)	Ratio of Acid to Sugar.	
1055	Sept. 29.	R. J. High, Orlando.....	Sweet Seville (No. 1).....	44.55	0.51	6.25	1 to 6.50	Tart
1056	Sept. 29.	R. J. High, Orlando.....	Parson Brown (No. 2).....	44.55	1.19	5.56	1 to 6.50	Sour
1102	Oct. 4.	Johnson & Co., Leesburg.....	.....	44.55	1.41	7.25	1 to 7.25	Tart
1104	Oct. 2.	W. E. Harris, Oco.....	.....	44.55	2.05	.....	.....	.....
1105	Oct. 2.	L. A. Hendry, Ft. Myers.....	Seedlings.....	44.55	1.54	6.89	1 to 4.47	Sour
1106	Oct. 2.	Gro. K. Tisdler, DeLeon Spgs.	Sweet Seville.....	44.55	0.63	.....	.....	.....
1107	Oct. 2.	R. H. Mole, Leesburg.....	Parson Brown.....	44.55	1.16	.....	.....	.....
1108	Oct. 2.	A. J. May, Orlando.....	Navel.....	44.55	0.70	.....	.....	.....
1110	Oct. 4.	H. C. Mays, Plant City.....	Early Alafia River.....	44.55	0.78	.....	.....	.....
1112	Oct. 7.	Alexander & Hibel, DeLeon Spgs. Sour.	Shall Hammock.....	44.55	1.88	6.29	1 to 3.34	Sour

1116	Oct.	9.	Jack Camp, Ocala.....	Glen Alice Seed.....	43.50	1.40	5.08	1 to 4.04	Sour
1119	Oct.	7.	B. F. Thibault, Crestview City.	Rose's Early.....	44.70	1.45	7.17	1 to 5.12	Sour
1120	Oct.	7.	J. C. Smith, Dayton.....	.....	40.14	1.44	6.68	1 to 6.40	Tart
1127	Oct.	10.	J. J. Parrish, Titusville.....	Seedlings	42.45	1.70	6.20	1 to 2.05	Sour
1128	Oct.	8.	R. L. Collins, Umatilla.....	.....	.....	1.32	.....	.....	.....
1129	Oct.	8.	Royal C. Dana, Tallahassee.	Seedlings .....	.....	2.31	.....	.....	.....
1131	Oct.	9.	D. A. Tule, Floral City.....	Parson Browns.....	42.90	0.87	6.20	1 to 7.24	Tart
1134	Oct.	12.	Florida Citrus Growers' As- sociation, Sarasota.	Seedlings	45.03	1.75	4.55	1 to 2.55	Very Sour
1137	Oct.	15.	R. P. Braton, Ft. Myers.....	Early Seedlings.....	45.11	0.73	7.88	1 to 10.72	Sweet
1138	Oct.	15.	Edw. A. Henderson, Ft. My- ers.	.....	42.17	1.68	7.37	1 to 4.48	Sour
1141	Oct.	19.	J. W. Pyles, Geneva.....	Seedlings	46.10	2.25	5.24	1 to 2.22	Very Sour
1144	Oct.	22.	S. E. Marx, Plant City.....	Mar's Early.....	43.40	0.95	6.59	1 to 6.24	Tart
1147	Oct.	25.	Wiggins & Daniel Packing House, Plant City.	Alafia River Seedlings	45.15	1.54	6.32	1 to 4.19	Sour
1150	Oct.	26.	D. N. Barnes Packing House, Arcadia.	Seedlings	43.33	1.31	6.07	1 to 4.62	Sour

SPECIAL FOOD ANALYSES, 1912.—(Continued.)
ORANGES.—(Continued.)

No.	Date.	FROM	VARIETY.	Juice (Per cent.)	ANALYSIS OF JUICE			TASTE.
					Acid as Citric (Per cent.)	Sugar as Invert (Per cent.)	Ratio of Acid to Sugar.	
1155	Oct. 18.	K. S. Parrish, Parrish.	.....	41.81	0.78	6.82	1 to 8.63	Tart
1156	Oct. 18.	K. S. Parrish, Parrish.	.....	41.78	0.78	6.62	1 to 8.58	Tart
1157	Oct. 18.	Wiggins & Daniel, Plant City	.....	42.59	1.10	6.25	1 to 5.67	Sour
1158	Oct. 18.	Cham & Co., Kissimmee.	.....	39.88	0.65	5.95	1 to 9.16	Sour
1159	Oct. 18.	Cham & Co., Kissimmee.	.....	39.37	0.78	5.82	1 to 7.46	Tart
1160	Oct. 17.	Samsona Citrus Growers' As- sociation, Homestead	Seedlings	45.21	1.45	5.85	1 to 3.45	Sour
1161	Oct. 19.	J. W. Frost, Homestead	Seedlings	41.95	1.54	5.36	1 to 2.85	Very sour
1162	Oct. 18.	DePaha Fruit Co., Arcadia.	Navel	41.99	1.12	6.24	1 to 5.57	Sour
1163	Oct. 19.	H. N. Bares, Arcadia.	Seedlings	41.91	1.24	6.22	1 to 5.01	Sour

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1155	Oct. 19.	R. P. Braton, Ft. Myers.....	Hammock Seedlings....	44.26	0.69	7.80	1 to 11.51	Sweet
1156	Oct. 19.	R. P. Braton, Ft. Myers.....	Hammock Seedlings....	41.00	0.59	7.97	1 to 12.45	Very Sweet
1175	Oct. 19.	S. J. High, Orlando.....	.....	49.82	1.62	6.62	1 to 4.09	Sour
1171	Oct. 19.	S. J. High, Orlando.....	Parson Browns.....	44.91	1.43	6.94	1 to 4.82	Sour
1176	Oct. 21.	G. F. Dostick, Wausola.....	Seedlings	65.38	1.52	6.23	1 to 4.16	Sour
1178	Oct. 25.	J. T. Patch, Dale City.....	.....	.....	2.09	.....	.....	.....
1181	Oct. 23.	Edward Parkinson, Alva....	Parson Browns.....	34.90	0.63	7.25	1 to 11.62	Sweet
1186	Oct. 21.	Royal C. Dana, Tallahassee..	Seedlings	62.12	1.37	.....	.....	.....
1191	Oct. 25.	Wiggins & Daniel, Plant City .....	.....	43.23	1.21	6.95	1 to 8.21	Sour
1193	Oct. 24.	W. C. Hathcock, Plant City..	Hathcock's Extra Sweet	42.22	0.89	7.91	1 to 8.76	Tart
1194	Oct. 25.	Wiggins & Daniel, Plant City	Seedlings	45.74	1.26	7.26	1 to 6.12	Sour
1198	Oct. 26.	J. T. Patch, Dale City.....	.....	47.88	0.52	8.94	1 to 8.65	Tart
1207	Oct. 29.	B. B. Hull, Winter Garden...	Seedlings	62.44	1.59	6.69	1 to 4.40	Sour
1208	Oct. 29.	Boloto Fruit Co., Arcadia...	Jaffas	62.58	1.46	6.68	1 to 4.75	Sour
1209	Oct. 29.	A. B. Willford Packing House, Arcadia.	Seedlings	51.62	1.25	6.96	1 to 5.61	Sour
1217	Oct. 29.	B. J. Carleton, Arcadia.....	Hammock Seedlings....	37.80	1.67	6.19	1 to 3.45	Sour

SPECIAL FOOD ANALYSES, 1912—(Continued.)
ORANGES.—(Continued.)

No.	DATE.	FROM	VARIETY.	Juice (Per cent.)	ANALYSIS OF JUICE.			TASTE.
					Acid as Citric (Per cent.)	Sugar as Invert. (Per cent.)	Ratio of Acid to Sugar.	
1208	Oct. 29.	D. N. Barco, Arcadia.....	Seedlings	41.14	1.21	7.27	1 to 5.63	Sour
1209	Oct. 29.	Scott Bros.' Packing House, Arcadia.....	Pineapple	36.00	1.60	7.44	1 to 4.65	Sour
1210	Oct. 29.	T. B. Dyrd & Son, Tallahassee.....	.....	.....	6.79	.....	.....	.....
1211	Oct. 29.	C. J. Carlton Woodhale.....	.....	59.88	1.19	7.19	1 to 6.05	Tart
1213	Oct. 29.	J. Gates, Manatee.....	.....	43.94	1.34	7.68	1 to 5.73	Sour
1215	Oct. 29.	Norwin Fruit Co., Norwin.....	Seedlings	42.54	1.28	7.25	1 to 5.65	Sour
1221	Nov. 1.	B. J. Stieh, Orlando.....	Parson Browns.....	46.97	1.46	6.82	1 to 4.65	Sour
1222	Nov. 1.	B. J. Stieh, Orlando.....	Parson Browns.....	45.79	1.71	7.89	1 to 7.51	Tart
1223	Nov. 1.	Overstreet & Brow, Orlando.....	Parson Browns.....	48.38	1.22	7.97	1 to 6.53	Tart

1224	Nov.	1.	A. B. Willford, Ft. Green...	Seedlings	43.15	1.26	7.37	1 to 5.35	Sour
1225	Nov.	1.	Bainey & Harder, Wauchula	Seedlings	42.50	1.28	7.41	1 to 5.20	Sour
1226	Nov.	1.	Joe. Gentle & Co., Orlando...	Seedlings and Jaffas...	42.22	1.22	6.65	1 to 5.64	Sour
1228	Nov.	1.	Wetumpka Grove, Wetumpka	Parson Brownes.....	47.54	6.56	7.68	1 to 7.76	Tart.
1233	Nov.	2.	J. F. Mace & Son, Lake Helen	Jaffas	47.03	1.10	7.50	1 to 6.20	Tart
1234	Nov.	2.	J. F. Mace & Son, Lake Helen	Ruby	46.12	1.12	6.85	1 to 6.12	Tart.
1235	Nov.	2.	J. F. Mace & Son, Lake Helen	Homonassa	51.14	1.26	7.07	1 to 5.44	Sour
1236	Nov.	2.	J. F. Mace & Son, Lake Helen	Sweet Seedlings.....	48.28	1.42	7.09	1 to 5.80	Sour
1237	Nov.	2.	J. F. Mace & Son, Lake Helen	Prize	42.76	1.12	7.68	1 to 6.24	Tart.
1238	Nov.	2.	J. F. Mace & Son, Lake Helen	Pineapple	46.20	1.10	7.20	1 to 4.97	Tart
1242	Nov.	4.	Gentle & Co., Bowling Green	Seedlings	42.92	1.20	7.17	1 to 5.14	Sour
1243	Nov.	4.	W. E. Harris, Owa.....	Seedlings	43.47	1.47	7.65	1 to 5.20	Sour
1246	Nov.	4.	R. L. Collier, Orestilla.....	Seedlings	44.43	1.06	8.04	1 to 7.58	Tart
1247	Nov.	4.	Esperie Hollinger, Tampa...	Seedlings	43.42	1.08	8.02	1 to 7.44	Tart
1250	Nov.	4.	DeBota Fruit Co., Arcadia...	Jaffas	54.23	1.46	8.71	1 to 4.60	Sour
1251	Nov.	4.	Arcadia Citrus Growers' Picking House, Arcadia.	Pineapple	41.22	1.24	7.65	1 to 6.12	Tart.

SPECIAL FOOD ANALYSES, 1912.—(Continued.)
ORANGES.—(Continued.)

No.	Date.	FROM	VARIETY.	Juice (Per cent.)	ANALYSIS OF JUICE			TASTE.
					Acid as Citric. (Per cent.)	Sugar as Invert. (Per cent.)	Ratio of Acid to Sugar	
1252	Nov. 8.	Scott Bros., Arcadia.....	Pineapple	44.82	1.18	7.45	1 to 6.27	Tart
1253	Nov. 6.	D. N. Basso, Arcadia.....	Seedling	44.68	1.23	7.22	1 to 5.90	Sour
1254	Nov. 9.	J. P. Mason & Son, Lake Helen	Tangerines	41.64	0.98	7.86	1 to 7.92	Tart
1255	Nov. 9.	Gardner Citrus Growers' As- sociation, Garden.....	Parson Browns.....	44.56	1.24	6.86	1 to 5.57	Sour
1256	Nov. 9.	Hainey & Barber, Waukeela	.....	41.63	0.97	8.19	1 to 8.35	Sweet
1257	Nov. 9.	Osman Fruit Co., Ocala.....	.....	42.78	1.25	7.08	1 to 5.68	Sour
1257	Nov. 8.	A. H. Senter, Arcadia.....	Seedlings	46.21	0.77	7.19	1 to 9.25	Sweet
1258	Nov. 8.	Doyal C. Dean, Tallahassee.	Seedlings	46.92	1.78	7.95	1 to 5.56	Sour

GRAPEFRUIT.

1605	Sept. 27.	A. J. Nye, Orlando.....	.....	1.37	4.50	1 to 2.43	Very Good
1257	Nov. 9.	J. P. Mace & Son, Lake Wales.....	24.82	1.48	2.52	1 to 4.75	Good

SPECIAL FOOD ANALYSES, 1912.—(Continued.)
MISCELLANEOUS.

No.	LABEL.	RESULTS.	FROM.
1919	Grits	Sour, fermented	David Anderson, Crescent City.
1920	Bottled water.....	Total solids, 4 parts per million....	R. E. Ross, Tallahassee.
1925	Milk	Fat (per cent.)..... 5.09	E. H. Sellards, Tallahassee.
1925	Tobacco	<i>Stramonium</i> leaves absent. <i>Lobelia</i> leaves absent.	United Grocery Co., Jacksonville.
1949	Sugar Cane Juice.....	Sucrose (per cent.)..... 56.25 Invert Sugar (per cent.)..... 2.19 Total Sugar (per cent.)..... 58.44	Dr. W. S. Burkhart, Miami.
1941	Coffee & Chicory..... (Chock-Nuts.)	Chicory (per cent.)..... 37.56	Consolidated Grocery Co., Jacksonville
1942	Coffee & Chicory..... (Lantano Brand.)	Chicory (per cent.)..... 31.25	Consolidated Grocery Co., Jacksonville
1952	Flour	Test for bleaching..... Negative.	Consolidated Grocery Co., Pensacola.
1954	Milk (Stripping).....	Milk Fat (per cent.)..... 7.95	J. Earl Perkins, Tallahassee.
1955	Milk (Herd)	Milk Fat (per cent.)..... 5.85	J. E. Perkins, Tallahassee.

SPECIAL FOOD ANALYSES, 1912—(Continued.)
MISCELLANEOUS—(Continued.)

No.	LABEL.	RESULTS.	FROM.
1198	Lard	Butyro-refractometer Reading at 40°C..... 59.90 Halphen Test for Cotton Seed Oil	R. A. Hagood, Tallahassee.
1199	Oats	Test for Sulphur.....	S. Samsy & Co, Jacksonville.
1202	Crown Brand Choice Cape Cod Wiring.	Case badly corroded. Contains filthy, decomposed and putrid animal substance.	Peninsular Naval Stores Co., Tampa.
1248	Japanese Case Juice.....	Brix at .....17.5°C=16.75° Sucrose (per cent).....=13.92 Invert Sugar (per cent).....= 1.28 Total Sugar (per cent).....=15.20 Coefficient of Purity.....=82.59	R. E. Rose, Tallahassee.
1265	Crown Brand Choice Cape Cod Wiring.	Case badly corroded. Contains filthy, decomposed and putrid animal substance.	Peninsular Naval Stores Co., Tampa.

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

FOOD AND DRUG SECTION.

E. E. DAME, State Chemist.

SPECIAL DRUG ANALYSIS, 1912.

A. M. HENNY, Asst. Chemist.

Samples Taken by Purchaser Under Section 12, Act Approved June 5, 1911.

MISCELLANEOUS.

No.	LABEL.	MANUFACTURER.	Alcohol (per cent by volume.)	FROM
1025	White Alcohol .....	.....	47.68	J. M. Smith, Tallahassee.
1027	Alcohol .....	.....	54.51	The Griffin Drug Co., Dade City.
1031	Plant Extract of Saw Palmetto	The Palmetto Extract Co., Miami, Fla.	33.97	The Palmetto Extract Co., Miami.
1261	Medicine	Mrs. Annie Fritchel, San An- tonio, Fla.	15.21	Mrs. Annie Fritchel, San Antonio.

DEPARTMENT OF AGRICULTURE—DIVISION OF CHEMISTRY.

R. E. ROSE, State Chemist.

FOOD AND DRUG SECTION.

A. M. HENRY, Asst. Chemist.

Samples Taken by State Inspector Under Section 12, Act Approved June 7, 1911.

OFFICIAL FOOD ANALYSIS, 1912.

KETCHUPS.

"Ketchup is the clean, sound product made from properly prepared pulp of clean, sound, fresh, ripe tomatoes, with spices and with or without sugar and vinegar," is the standard.

Thirty-two samples were examined, which varied in price from 11 to 28 cents per pound. Fourteen of these contained sodium benzoate as a preservative, while no preservative was detected in the other eighteen. Out of the thirty-two samples, seven were classed as legal, complying with the law in all particulars; nineteen were passed and six were declared illegal. Five of the samples declared illegal were adulterated in that they contained a filthy, decomposed or putrid vegetable substance, and the other was misbranded as it contained a misstatement of the net weight. The legal samples varied in price from 11 to 28 cents per pound; the passed samples from 16 to 28 cents, and the illegal samples from 11 to 27 cents.

Of the fourteen samples containing sodium benzoate, five were adulterated, and of the eighteen samples without it, one was adulterated.

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Number.	LABEL.	Total Solids (Per Cent.)	Salt (Per Cent.)	Sodium Benzoate (Per Cent.)	Weight (Average Samples, Grams.)	Microscopical Examination.			Remarks.
						Per Cent of Fields with Mold.	Yeasts and Spores per 1-60 c. c. m.	Bacteria (millions per c. c.)	
1077	Ball Head Tomato Catsup, 2 oz. net, Gibbs Preserving Co., Baltimore, Md.	24.98	1.50	0.99	8.8	4	9	10	Legal.

OFFICIAL FOOD ANALYSIS, 1912—(Continued.)
KETCHUPS—(Continued.)

Number.	LABEL.	Total Solids (Per Cent.)	Salt (Per Cent.)	Sodium Bicarbonate (Per Cent.)	Weight (A sample deposits, Oms.)	Microscopical Examination.			Remarks.
						Per Cent of Fields with Mold.	Yeasts and Spores per 1-c.c. c. c. b.	Bacteria (million per c. c.)	
1628	Tomato Catsup, 8 ozs., T. A. Sailer Preserving Co., Cincinnati, Ohio.	22.12	2.18	0.00	9.0	10	2	12	Legal.
1629	Gold Medal Tomato Catsup, 8 ozs., Eddy & Eddy Mfg. Co., St. Louis, Mo.	26.25	2.75	0.00	9.0	20	40	50	Passed.
1640	Tomato Ketchup, 1-10 of 1% Bicarbonate of Soda, Red Snapper Brand Co., Memphis, Tenn.	19.84	2.10	0.20	8.5	20	40	25	Passed.
1641	Tomato Catsup, Beech-Nut Packing Co., one-half pint, Cana- joharie, N. Y.	25.55	4.27	0.00	9.1	4	20	0	Passed.
1642	Tobacco-Ketchup, 74 ozs. net, Joseph Campbell Co., Camden, N. J.	22.59	4.56	0.00	9.1	8	10	8	Legal.
1643	Tomato Catsup, 84 ozs. net, VanCamp Packing Co., Indianapolis, Ind.	25.24	2.22	0.00	9.0	2	24	10	Legal.
1644	Junior' Tomato Catsup, 1-10 of 1% Bicarbonate of Soda, Jones Irrig., Chattanooga & Harkness, Louisville, Ky.	22.54	2.75	4.25	9.2	60	100	120	Illegal.
1645	Blue Grass Bell Tomato Catsup, 1-10 of 1% Bicarbonate of Soda, Jones Irrig. & Co., Louisville, Ky.	.....	2.91	0.70	18.1	0	10	1	Passed.

1044	Tomato Ketchup, H. J. Heinz Co., Pittsburg, Pa.....	22.01	3.98	0.98	8.5	29	14	9	Passed.
1047	Cholcolt Tomato Ketchup, contains Sodium Benzoate, National Pickle & Canning Co., St. Louis, Mo.	21.84	2.14	0.28	9.0	34	60	58	*Illegal.
1048	Sunbeam Pure Food Tomato Catsup, Austin Nichols & Co., New York, N. Y.	25.50	3.50	0.00	9.2	2	8	2	Passed.
1049	Richeson Tomato Catsup, 8 ozs. net, Sprague, Warner & Co., Chicago, Ill.	19.87	2.28	0.00	8.9	4	23	18	Legal.
1050	Waldorf Tomato Catsup, 1-10 of 1% Benzoate of Soda, The Williams Bros. Co., Detroit, Mich.	27.46	4.35	0.02	12.2	10	27	14	Passed.
1051	Pride of the Farm Tomato Catsup, 1-10 of 1% Benzoate of Soda, E. Fritchard, New York, N. Y.	28.43	2.48	0.27	11.5	6	19	10	Passed.
1052	Tomato Ketchup 7½ ozs. net, The Great Atlantic & Pacific Tea Co., New York, N. Y.	24.65	3.25	0.00	8.9	16	28	22	Passed.
1053	Pride of Long Island Tomato Catsup, preserved with Benzoate of Soda, The Garrett-Bergen Co., Brooklyn, N. Y.	18.65	3.27	0.12	12.4	24	69	28	Passed.
1054	Standard Catsup, 1-10 of 1% Sodium Benzoate, Hirsch Bros. & Co., Louisville, Ky.	21.68	2.42	0.00	9.0	28	22	18	Passed.
1055	Libby's Tomato Catsup, Libby, McNeill & Libby, Chicago, Ill.	17.56	1.92	0.00	8.7	6	14	4	Passed.
1056	Kentucky Belle Catsup, 1-10 of 1% Sodium Benzoate, Kentucky Canning Co., Owensboro, Ky.	22.68	3.05	0.08	11.7	40	150	62	*Illegal.
1057	Schimmel's Catsup, 8 ozs. net, The American Preserves Co., Philadelphia, Pa.	19.82	1.88	0.00	8.6	22	22	100	*Illegal.
1058	Blue Label Tomato Ketchup, 1-10 of 1% Benzoate Soda, Curtice Bros., Rochester, N. Y.	24.49	4.21	0.20	8.8	2	18	6	Passed.
1059	Yours Truly Tomato Catsup, 8 ozs. net, Lewis-Upchurch Co., Jacksonville, Fla.	24.48	3.98	0.00	8.1	4	21	2	Legal.
1060	Ferdell Tomato Catsup, Sprague, Warner & Co., Chicago, Ill.	21.22	1.84	0.00	8.8	29	14	1	Passed.
1061	Crown Catsup, Forbes Bros. T. & S. Co., St. Louis, Mo.....	14.26	2.75	0.00	12.2	48	21	23	Passed.
1062	Tomato Catsup, 1-10 of 1% Sodium Benzoate, The Williams Bros. Co., Detroit, Mich.	20.29	1.57	0.07	8.8	8	18	10	Passed.
1063	Ketchup, 16 ozs., The Hart Olney Canning Co., Oneida, N. Y....	21.11	1.16	0.00	12.6	22	9	1	Legal.

*Illegal—Adulterated—Contains a filthy, decomposed or putrid vegetable substance.

OFFICIAL FOOD ANALYSES, 1912.—(Continued.)
KETCHUPS.—(Continued.)

Number.	LABEL.	Total Solids (Per Cent.)	Salt (Per Cent.)	Sodium Bicarbonate (Per Cent.)	Weight (Acetic- Acid Soluble Solids.)	Microscopical Examination.			Remarks.
						Per Cent. of Fields with Mold.	Yeasts and Spores per 100 c. c.m.	Bacteria (allies) per c. c.	
1664	Premier Tomato Catsup, Francis H. Leggett & Co., New York, N. Y.	23.14	2.75	0.58	18.5	18	15	3	Failed.
1665	Oyster Hot Tomato Catsup, 1-18 of 1% Bicarbonate of Soda, The Hyman Pickle Co., Louisville, Ky.	20.45	2.36	0.25	8.5	22	20	5	Failed.
1666	Royal Scarlet Tomato Catsup, 1-18 of 1% Bicarbonate of Soda, E. C. Williams Co., New York, N. Y.	19.15	2.63	0.25	8.7	6	6	6	Failed.
1667	Red Cap Tomato Catsup, 1-18 of 1% Bicarbonate of Soda, United Specialty Co., Jacksonville, Fla.	12.42	1.78	0.28	9.1	12	150	80	Illegal.
1668	Gold Medal Tomato Catsup, 16 ozs., Eddy & Eddy Mfg. Co., St. Louis, Mo.	11.92	2.46	0.66	3.6	24	18	1	Illegal.

*Adulterated—Contains a 80% decomposed or partly vegetable substance.

†Adulterated—Contains a 80% decomposed or partly vegetable substance.

OFFICIAL FOOD ANALYSIS, 1912.—(Continued.)

CANNED CORN.

In the seventy-seven samples examined no evidence of preservatives, artificial sweeteners, or bleaching agents were detected. Forty out of these seventy-seven samples were misbranded in that they failed to bear any statement of the net weight or measure on the label, and the most of the thirty-seven that had statements of the weight or measure were not stated in pounds and ounces when over one pound, as required to be done.

Number.	LABEL.	Total Solids (per cent.)	Saccharin.	Weight.	REMARKS.
1069	Nabob Corn, Francis H. Leggett & Co., New York.	21.12	None.	12 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1070	Blue Label Sweet Corn, Carlton Bros. Co., Rochester, N. Y. Contents weigh at least 20 oz.	22.31	None.	1 lb 5 ozs.	Legal.
1071	Paris Sugar Corn, Burnham & Morrie Co., Portland, Me, Net weight 20 ozs.	22.09	None.	1 lb 6 ozs.	Legal.
1072	Richelles Brand Corn, Sprague, Warner & Co., Chicago, Ill. Capacity 19 liquid ozs.	20.56	None.	1 lb 5 ozs.	Legal.

OFFICIAL FOOD ANALYSES, 1912.—Continued.
CANNED CORN.—(Continued.)

Number.	LABEL.	Total Solids (per can.)	Sucrose.	Weight.	REMARKS.
1073	White Rose Brand Corn. See- man Bros., New York. Aver- age weight of contents at least 12 ozs.	20.45	None.	12 ozs.	Legal.
1074	Red Lion Brand Sugar Corn. Farmer's Canning Co., Red Lion, Pa.	22.50	None.	1 lb 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1075	Snow Drift Sugar Corn. W. W. Bayer & Co., Baltimore, Md.	22.50	None.	1 lb 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1076	Early Bird Sugar Corn. G. T. Hobbs & Co., Denton, Cal- houn County, Md.	19.33	None.	1 lb 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1077	Wayne Brand Country Gentle- man Sweet Corn. Packed by Edgett-Burham Co., Newark, N. Y.	22.50	None.	11 ozs.	Illegal. Misbranded. No statement of net weight or measure.

1078	Burnham Brand Country Gentleman Sweet Corn. Edgett-Burnham Co., Newark, N. Y. Not less than 3 cans.	23.25	None.	11 cans.	Legal.
1079	Pauline Brand Country Gentleman Sweet Corn. Edgett-Burnham Co., Newark, N. Y. Not less than 3 cans.	23.17	None.	11 cans.	Legal.
1080	My Favorite Sugar Corn. Geo. W. DeVille, Stewartstown, Pa. Contents 13 cans. or over.	20.13	None.	1 B. 5 cans.	Legal.
1081	Apple Blossom Brand Extra Standard Quality Sweet Corn. Oswego County Canning Co., Fulton, N. Y.	25.75	None.	1 B. 5 cans.	Illegal. Misbranded. No statement of net weight or measure. Corn decayed. Cans badly corroded.
1082	Extra Quality Republic Sugar Corn. Austin, Nichols & Co., New York.	22.22	None.	1 B. 5 cans.	Illegal. Misbranded. No statement of net weight or measure.
1083	Seaboard Pure Food Sweet Corn. Austin, Nichols & Co., New York.	20.22	None.	1 B. 5 cans.	Illegal. Misbranded. No statement of net weight or measure.
1084	Scottish Chief Sweet Corn. Austin, Nichols & Co., Distributors, New York.	19.75	None.	1 B. 5 cans.	Illegal. Misbranded. No statement of net weight or measure.

OFFICIAL FOOD ANALYSES, 1912.—Continued.
CANNED CORN.—(Continued.)

Number.	Label.	Total Solids (Per cent.)	Starch.	Weight.	Remarks.
1885	Stragood Sweet Corn, Genesee Canning Co., Genesee, Ill.	23.00	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1886	Little Fellow Sweet Corn, Genesee Canning Co., Genesee, Ill.	22.41	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1887	Nichols Brand Pearls Grain Sweet Kernel Corn, Ft. Stanwix Canning Co., Rome, Oneida County, N. Y.	23.00	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1888	Plus Brand Sweet Kernel Corn, Stanwix Canning Co., Rome, Oneida County, N. Y.	24.75	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1889	Sweet Violet Brand Country Gem Kernel Corn, John F. White Co., Mt. Morris, N. Y., About 204 ozs.	24.42	None.	1 lb. 5 ozs.	Legal.

1080	Baxter's Finest Brand Sugar Corn. H. C. Baxter & Bro., Brunswick, Me. Net weight 29 ozs.	25.07	None.	1 lb 4 ozs.	Legal.
1081	Gold Dragon Brand Corn. H. C. Baxter & Bro., Brunswick, Me. Net weight 29 ozs.	24.56	None.	1 lb 4 ozs.	Legal.
1082	Preferred Stock Brand Sugar Corn. H. C. Baxter & Bro., Brunswick, Me. Net weight 29 ozs.	25.45	None.	1 lb 4 ozs.	Legal.
1083	Libbe Brand Sugar Corn. H. C. Baxter & Bro., Brunswick, Me. Net weight 29 ozs.	25.58	None.	1 lb 4 ozs.	Legal.
1084	Blue Ridge Brand Sugar Corn. B. F. Shriver Co., Union Mills, Md. Contents 18 ozs. or over.	21.21	None.	1 lb 4 ozs.	Legal.
1085	Country Gentleman Corn, A No. 1. B. F. Shriver Co., Union Mills, Md. Contents 18 ozs.	22.16	None.	1 lb 4 ozs.	Legal.
1086	Royal Scarlet Evergreen Corn. R. C. Williams & Co., New York.	20.22	None.	12 ozs.	Illegal. Misbranded. No statement of net weight or measure.

OFFICIAL FOOD ANALYSES, 1912.—Continued.
 CANNED CORN.—(Continued.)

Number.	LABEL.	Total Solids (Per cent.)	Saccharine.	Weight.	REMARKS.
1097	Robin Hood Brand Sweet Corn, R. C. Williams & Co., New York.	21.55	None.	11 ozs.	Legal. Misbranded. No statement of net weight or measure.
1098	Crescent Brand Sweet Corn, R. C. Williams & Co., New York.	21.55	None.	1 lb. 6 ozs.	Legal. Misbranded. No statement of net weight or measure.
1099	Red Line Sweet Corn, R. C. Williams & Co., New York.	20.45	None.	1 lb. 4 ozs.	Legal. Misbranded. No statement of net weight or measure.
1100	Our Table Brand Cream Corn, Webster-Thomas Co., Boston, Mass.	21.98	None.	1 lb. 5 ozs.	Legal. Misbranded. No statement of net weight or measure.
1101	Grandmother's Brand A. & P. Corn, The Great Atlantic & Pacific Tea Co., Inc., Jersey City, N. J.	21.92	None.	1 lb. 4 ozs.	Legal. Misbranded. No statement of net weight or measure.

1102	Iron Brand Corn. The Great Atlantic & Pacific Tea Co., Inc., Jersey City, N. J.	23.50	None.	1 lb. 5 ozs.	Illegal, misbranded. No statement of net weight or measure.
1103	Van Camp's Sugar Corn. Van Camp Packing Co., Indianapolis, Ind. Net weight 20 ozs.	22.84	None.	1 lb. 4 ozs.	Legal.
1104	Standard Sugar Corn. Van Camp Packing Co., Indianapolis, Ind. Net weight 14 ozs.	22.57	None.	1 lb. 3 ozs.	Legal.
1105	Honey Drop Brand Sugar Corn. Davis, Baxter & Co., Portland, Me. Net weight 12 ozs.	22.73	None.	12 ozs.	Legal.
1106	American Beauty Brand Blue Fog Cream Style Sugar Corn. E. V. Stockham, Perryman, Md.	25.74	None.	1 lb. 5 ozs.	Illegal, misbranded. No statement of net weight or measure.
1107	War An Brand Sweet Corn. Home Canning Co., Rome, N.Y. Net weight 21 ozs.	24.45	None.	1 lb. 5 ozs.	Legal.
1108	Victory Brand Maine Style Sweet Corn. The John Doyle Co., Baltimore, Md.	26.65	None.	1 lb. 3 ozs.	Illegal, misbranded. No statement of net weight or measure.
1109	Clipper Brand Sweet Corn. Wm. Norman & Sons, Inc., Baltimore, Md. Contents 18 ozs. or over.	27.75	None.	1 lb. 4 ozs.	Legal.

OFFICIAL FOOD ANALYSES, 1912.—Continued.
CANNED CORN.—(continued.)

Number.	LABEL.	Total Solids (per cent.)	Remarks.	Weight.	REMARKS.
1110	American Club Sweet Corn. The Hart Olney Canning Co., Ossida, N. Y.	24.57	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1111	Amber Cream Brand Sugar Corn. Providence Canning Co., Providence, R. I. Net weight 20 ozs.	21.21	None.	1 lb. 5 ozs.	Legal.
1112	Wells's Cream Sugar Corn. H. F. Wells Co., Portland, Me. Net weight 20-21 ozs.	22.54	None.	1 lb. 5 ozs.	Legal.
1113	Favorite Sweet Corn. W. M. Clark Co., Rochester, N. Y. Contents weight at least 20 ozs.	24.69	None.	1 lb. 5 ozs.	Legal.
1114	Heidelberg Brand Sugar Corn. J. H. Hebbel & Son's Hebbel-Brand Antisepic Canning Co., Baltimore, Md. Contents 18 ozs. net wt.	19.49	None.	1 lb. 1 oz.	Legal.

1113	Bridal Brand Sweet Sugar Corn. Thomas Roberts & Co., Philadelphia, Pa. Average net weight of contents 20 ozs.	22.10	None.	1 lb 4 ozs.	Legal.
1114	Bevo Brand Country Gentleman Sweet Corn. S. K. Constock & Co., Newark, N. Y. The net contents of this can is about 20 1/2 ozs.	24.19	None.	1 lb 5 ozs.	Legal.
1117	Darbee Brand Sugar Corn, Snow Flake Canning Co., Brunswick, Me. Net weight 20 ozs.	24.20	None.	1 lb 4 ozs.	Legal.
1118	Day & Night Brand Sugar Corn, Peninsular Naval Stores Co., Tampa, Fla.	17.43	None.	1 lb 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1119	Pawn Grove Brand Sugar Corn, James T. Smith, Pawn Grove, Pa.	18.90	None.	1 lb 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1120	United States Brand Sweet Corn, United States Canning Co., Fredonia, N. Y. Weight 21 ozs.	21.45	None.	1 lb 5 ozs.	Legal.
1121	Star II's Brand Sugar Corn, Beach, Newman & Beach, Clarksville, Ohio.	19.29	None.	1 lb 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.

OFFICIAL FOOD ANALYSIS, 1911.—Continued.
CANNED CORN.—(Continued.)

Number.	LABEL.	Total Solids (Per cent.)	Brandname.	Weight.	REMARKS.
1122	Moose Head Pig Sugar Corn, Chas P. Osborn, Aberdeen, Md.	11.89	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1123	Little Jap Moose Style Sweet Corn, Wm. Nissen & Sons, Inc., Baltimore, Md. Contains 28 ozs. net wt.	21.72	None.	1 lb. 4 ozs.	Legal.
1124	Perfection Brand Sugar Corn, Ed D. Deper & Co., New York.	24.78	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1125	Harvest Brand Sugar Corn, Am- tin, Nichols & Co., New York.	24.47	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1126	Blue Mountain Brand Sugar Corn, Amtin, Nichols & Co., New York.	28.41	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.

1127	Maryland Chief Brand Maine Style Sugar Corn. J. Langrall & Bro., Inc., Baltimore, Md. Contents 15 ozs. or over.	21.57	None.	1 lb. 4 ozs.	Legal.
1128	Delicatessen Brand Sugar Corn. Camden Packing Co., Camden, Oneida County, N. Y. Net weight 15 ozs.	22.35	None.	1 lb. 5 ozs.	Legal.
1129	Hyron Brand Choice Corn. Average weight of contents at least 15 ozs.	22.07	None.	1 lb. 5 ozs.	Legal.
1130	Reck's Brand Sugar Corn. C. Reck, Key West, Fla.	20.51	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1131	Varick Brand Sweet Corn. Francis H. Leggett & Co., New York	19.75	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1132	Premier Brand Corn. Francis H. Leggett & Co., New York.	21.50	None.	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1133	Monsoon Brand Sweet Corn. Sprague, Warner & Co., Chicago, Ill. Liquid capacity 15 ozs.	22.34	None.	1 lb. 5 ozs.	Legal.
1134	Hampden Brand Maine Sweet Corn. Portland Packing Co., Portland, Me.	20.05	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.

OFFICIAL FOOD ANALYSES, 1912.—Continued.
CANNED CORN.—(Continued.)

Number.	LABEL.	Total solids (Per cent.)	Insoluble.	Weight.	REMARKS.
1125	Hattercup Brand Maine Sugar Corn, Portland Packing Co., Portland, Me.	22.54	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1126	Gold Seal Sugar Corn, Portland Packing Co., Portland, Me.	21.40	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1127	Spring Garden Brand Maine Style Sweet Sugar Corn, Wm. Grech Co., Baltimore, Md. Net contents of this can weigh 20 ozs.	25.81	None.	1 lb. 2 ozs.	Legal.
1128	Allen & Roberts Brand Standard Sweet Corn, R. C. Williams & Co., New York.	26.06	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1129	E. N. Hook Brand Egyptian Sweet Corn, Archer, Merrill & Condit Co., New York.	19.02	None.	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.

1140	Golden Sceptre Brand Fancy Maize Sweet Corn. Van De- man & Lewis Co., Jacksonville, Fla. Contents 18 cans or over.	21.50	None.	1 D 5 cans.	Legal.
1141	White Cross Maine Sugar Corn. H. E. Webb Co., Portland, Me.	24.25	None.	1 D 5 cans.	Illegal. Misbranded. No statement of net weight or measure.
1142	Brook Dale Brand Evergreen Sugar Corn. Thom. D. Miller, Webster, Md.	18.50	None.	1 D 5 cans.	Illegal. Misbranded. No statement of net weight or measure.
1143	Meadow Brand Sugar Corn. Geo- rge Canning Co., Geneva, Ill.	23.50	None.	1 D 4 cans.	Illegal. Misbranded. No statement of net weight or measure.
1144	Pride of the West Brand Sugar Corn. Gibson Canning Co., Gibson City, Ill. Net weight 1 D 5 cans.	25.25	None.	1 D 5 cans.	Legal.
1145	Lebanon's Best Brand Sugar Corn. The Banner Packing Co., Lebanon, Ohio. Net weight of contents 25 cans.	19.50	None.	1 D 5 cans.	Legal.

OFFICIAL FOOD ANALYSES, 1912.—(Continued.)
ORANGES.

No.	Date	Variety	Juice (Per Cent.)	Analysis of Juice			Taste	Remarks
				Acid in Juice (Per Cent.)	Amount of Sugar (Per Cent.)	Ratio of Acid to Sugar		
1145	Oct. 21	.....	15.10	1.21	7.99	1 to 6.62	Sour.	Immature.
1146	Oct. 21	Peace River Brand.....	29.22	1.29	6.59	1 to 5.15	Sour.	Immature.
1147	Oct. 21	Pottery Brand.....	42.81	1.24	7.42	1 to 6.15	Tart.	Immature.
1148	Oct. 21	.....	49.65	1.28	7.98	1 to 6.17	Sour.	Immature.
1149	Oct. 22	Lansdale Brand.....	41.56	1.25	7.49	1 to 5.98	Sour.	Immature.
1150	Oct. 23	.....	42.15	1.22	7.92	1 to 6.54	Sour.	Immature.
1151	Nov. 2	Royal Palmiana Brand (Sweet).....	11.59	1.45	8.54	1 to 5.90	Sour.	Immature.
1152	Nov. 2	Royal Palmiana Brand (Sweet).....	20.73	1.36	7.54	1 to 5.54	Sour.	Immature.
1153	Nov. 2	Royal Palmiana Brand (Sweet).....	11.51	1.38	8.25	1 to 6.00	Tart.	Immature.
1154	Nov. 2	Swathara.....	47.04	1.68	7.47	1 to 4.45	Sour.	Immature.

GRAPEFRUIT.

No.	DATE.	ANALYSIS OF JUICE			REMARKS.
		Acid as Citric. (Per Cent.)	Sugar as Invert. (Per Cent.)	Ratio of Acid to Sugar.	
1158	Sept. 16.	1.80	8.85	1 to 4.91	Immature.
1164	Sept. 25.	1.78	5.44	1 to 3.05	Immature.

OFFICIAL FOOD ANALYSES, 1912.—(Continued.)

SODA WATER SIRUPS.

Of the five samples of Soda Water Sirups examined all were free from preservatives. Three contained Coal Tar dye. The dye were not analyzed; the three samples containing them were passed without further tests.

No.	LABEL.	SACCHARIN	SALICYLIC ACID.	BENZOIC ACID.	COAL TAR DYE.	REMARKS.
1149	Pineapple Soda Water Sirup, Armour & Co., Pensacola, Fla.	Absent.	Absent.	Absent.	Absent.	Legal.
1149	"Ingestol," Wharton Chemical Co., Nashville, Tenn.	Absent.	Absent.	Absent.	Present.	Passed.
1145	Top-Notch Brand Pineapple Soda Water Sirup, Armour & Co., Pensacola, Fla.	Absent.	Absent.	Absent.	Absent.	Legal.
1162	Artificial Pineapple Sirup, R. A. LaGrasso, 126 Maiden Lane, N. Y.	Absent.	Absent.	Absent.	Present.	Passed.
1160	Artificial Strawberry Soda Water Sirup, W. H. Hoffmann & Son, 115 N. Dearborn St., Chicago, Ill.	Absent.	Absent.	Absent.	Present.	Passed.

OFFICIAL FOOD ANALYSIS, 1912.—(Continued.)

SUCCOTASH.

In the twelve samples examined no evidence of preservatives, artificial sweeteners, or bleaching agents were detected. Ten out of these twelve samples were misbranded in that they failed to bear any statement of the net weight or measure on the label, and the statement of the net weight in the other two was in ounces instead of pounds and ounces, as required. Two samples were adulterated in that soaked beans were used and the label contained no statement of the fact. One sample was adulterated in that the beans were wormy, although the fact that they were soaked beans was stated on the label. The samples varied in price from 10 to 35 cents per pound. One of the twelve samples was classed as legal, complying with the law in all particulars; two were passed and ten declared illegal.

Number.	LABEL.	Total Solids (Per Cent.).	Weight.	REMARKS.
1146	Progress Brand Succotash, Wm. Grech Co., Baltimore, Md.	79.41	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1147	Spring Garden Brand Succotash (Dried Beans), Wm. Grech Co., Baltimore, Md.	77.22	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure. Adulterated; contains wormy lentils.
1148	Hops! Brand Fine Table Succotash, R. C. Williams & Co., New York, N. Y.	87.22	1 lb. 6 ozs.	Illegal. Misbranded. No statement of net weight or measure.

OFFICIAL FOOD ANALYSIS, 1912.—(Continued.)
 SUCROTABLE.—(Continued.)

Number.	LABEL.	Total Solids (Per Cent.)	Weight.	REMARKS.
1149	Victory Brand Sucrotab, John Hagle Co., Baltimore, Md.	27.29	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure. Adulterated; soaked beans used.
1150	Blue Label Sucrotab, Currier Brothers Co., Rochester, N. Y.	24.13	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure. Adulterated; soaked beans used.
1151	Tom Brand Sucrotab (Dried Beans), The Great Atlantic & Pacific Tea Co., Jersey City, N. J.	25.34	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1152	Grandmother's Brand Sucrotab, The Great Atlantic & Pacific Tea Co., Jersey City, N. J.	26.29	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1153	Flag Brand Sucrotab (Dried Beans), 20 oz. cans, Parli Haverly Canning Co., Rome, N. Y.	23.64	1 lb. 5 ozs.	Passed.
1154	White Rose Brand Sucrotab, Norman Hess, N. Y.	22.97	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1155	President Madison Brand Ripe Lima Sucro- tab, The Meffing Canning Co., Meffing, N. Y.	21.29	1 lb. 5 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1156	United Peace Sucrotab (Green Lima Beans), Thomas Roberts & Co., Philadelphia, Pa.	22.18	1 lb. 4 ozs.	Illegal. Misbranded. No statement of net weight or measure.
1157	Golf Sucrotab (net weight 23 ozs.), Golf Can- ning Co., Rome, N. Y.	24.98	1 lb. 5 ozs.	Passed.

MISCELLANEOUS ANALYSES AND EXAMINATIONS, 1912.

WATER SAMPLES.

- M. 1657—Well water from J. E. Bowman, Mc-David.
76-foot flowing well.
Total dissolved solids (parts per 1,000,000)= 68
A lightly mineralized water.
- M. 1672—Well water from John Donk, Jr., Tallahassee.
Total dissolved solids (parts per 1,000,000)= 61
A lightly mineralized water.
- M. 1673—Lake water from I. A. Woods, Dade City.
Total dissolved solids (parts per 1,000,000)= 33
A lightly very mineralized water.
- M. 1674—Spring water from I. A. Woods, Dade City.
Total dissolved solids (parts per 1,000,000)= 45
A very lightly mineralized water.
- M. 1676—Spring water from St. Andrews Ice & Power Co., St. Andrews.
Total dissolved solids (parts per 1,000,000)= 50
A lightly mineralized water.

- M. 1677—Well water from St. Andrews Ice & Power Co., St. Andrews.
354-foot well.
Total dissolved solids (parts per 1,000,000)= 290
A highly mineralized water.
- M. 1678—Well water from St. Andrews Ice & Power Co., St. Andrews.
371-foot well.
Total dissolved solids (parts per 1,000,000)= 460
A highly mineralized water.
- M. 1679—Well water from St. Andrews Ice & Power Co., St. Andrews.
437-foot well.
Total dissolved solids (parts per 1,000,000)= 265
A highly mineralized water.
- M. 1680—Well water from Joseph Halton, Sarasota.
Total dissolved solids (parts per 1,000,000)=1820
A very highly mineralized water.
- M. 1681—Well water from Joseph Halton, Sarasota.
From pipe 1-2 mile from well.
Total dissolved solids (parts per 1,000,000)=1835
A very highly mineralized water.
- M. 1682—Well water from T. L. Joyce, Ocoee,
70-foot well.
Total dissolved solids (parts per 1,000,000)= 33
A very lightly mineralized water.

- M. 1684—De Leon Springs water, from Julia A. Sweeney, De Leon Springs.
 Total dissolved solids (parts per 1,000,000)= 123
 A moderately mineralized water.
- M. 1685—Spring water from W. C. Mahin, Hawthorne.
 Total dissolved solids (parts per 1,000,000)= 205
 A highly mineralized water.
- M. 1687—Pond water from Alger-Sullivan Lumber Co., Century.
 Total dissolved solids (parts per 1,000,000)= 40
 A very lightly mineralized water.
- M. 1688—Deep well water from Alger-Sullivan Lumber Co., Century.
 Total dissolved solids (parts per 1,000,000)= 47
 A lightly mineralized water.
- M. 1689—Surface well water from Alger-Sullivan Lumber Co., Century.
 Total dissolved solids (parts per 1,000,000)= 34
 A very lightly mineralized water.
- M. 1694—Well water from Mrs. S. S. Pritchard, White Springs.
 Total dissolved solids (parts per 1,000,000)= 258
 A highly mineralized water.
- M. 1699—Spring water (No. 1) from R. P. Hopkins, Live Oak.
 Total dissolved solids (parts per 1,000,000)= 156
 A moderately mineralized water.

- M. 1700—Spring water (No. 2) from R. P. Hopkins, Live Oak.
 Total dissolved solids (parts per 1,000,000) 148
 A moderately mineralized water.
- M. 1731—Spring water (No. 3) from R. P. Hopkins, Live Oak.
 Total dissolved solids (parts per 1,000,000) 75
 A lightly mineralized water.
- M. 1702—Spring water from J. W. Wilmot, Orlando.
 Total dissolved solids (parts per 1,000,000) 391
 A highly mineralized water.
- M. 1711—Spring water from Southport Lumber Co., Southport.
 Total dissolved solids (parts per 1,000,000) 50
 A lightly mineralized water.
- M. 1712—Creek water from Southport Lumber Co., Southport.
 Total dissolved solids (parts per 1,000,000) 45
 A lightly mineralized water.
- M. 1721—Well water from W. J. Jenkins, Round Lake.
 Total dissolved solids (parts per 1,000,000) 33
 A very lightly mineralized water.
- M. 1722—Lake water from Dr. J. M. Robson, Sanford.
 Total dissolved solids (parts per 1,000,000) 52
 A lightly mineralized water.

- M. 1723—City water from Pipes, from Dr. J. M. Robson, Sanford.
 Total dissolved solids (parts per 1,000,000)= 418
 A highly mineralized water.
- M. 1724—Sanford City Water from Basin, from Dr. J. M. Robson, Sanford.
 Total dissolved solids (parts per 1,000,000)= 442
 A highly mineralized water.
- M. 1725—Flowing well water from C. E. Cessna, Chicago, Ill.
 400-foot well, on Choctawhatchee Peninsula.
 Total dissolved solids (parts per 1,000,000)=1353
 A very highly mineralized water.
- M. 1726—Well water from Dr. C. H. Chapman, Hosford.
 496-foot well.
 Total dissolved solids (parts per 1,000,000)= 235
 A highly mineralized water.
- M. 1727—Well water from M. L. Adams, Perry.
 12-foot well.
 Total dissolved solids (parts per 1,000,000)= 46
 A lightly mineralized water.
- M. 1728—Well water from J. M. Hutchinson, Lynn Haven.
 19-foot well.
 Total dissolved solids (parts per 1,000,000)= 39
 A very lightly mineralized water.

- M. 1729—Artesian well water from I. L. Moody,
Bunnell.
414-foot artesian well.
Total dissolved solids (parts per
1,000,000)= 521
A very highly mineralized water.
- M. 1735—Well water from C. P. Kelly & Co.,
Madison.
165-foot well.
Total dissolved solids (parts per
1,000,000)= 439
A highly mineralized water.
- M. 1736—Water from W. H. Reams, Winser
Garden.
Total dissolved solids (parts per
1,000,000)= 270
A highly mineralized water.
- M. 1737—Water from J. H. Keen, River Junc-
tion.
Total dissolved solids (parts per
1,000,000)= 239
A highly mineralized water.
- M. 1739—Well water from J. M. Hutchinson,
Lynn Haven.
107-foot well—85-fr. casing.
Total dissolved solids (parts per
1,000,000)= 224
A highly mineralized water.
- M. 1742—Spring water from W. H. Tracy,
Boulogne.
Total dissolved solids (parts per
1,000,000)= 32
A very lightly mineralized water.

M. 1747—Well water of 155 ft. City well of St. Petersburg, Pinellas County. For Florida Geological Survey.

(Milligrams per liter.)

Silica (SiO_2)	28.5
Iron and Aluminum ($\text{Fe}+\text{Al}$)	0.9
Calcium (Ca)	92.6
Magnesium (Mg)	9.6
Chlorine (Cl)	120.6
Carbonate radicle (CO_3)	0.0
Bicarbonate radicle (HCO_3)	216.6
Sulfate radicle (SO_4)	2.1
Phosphate radicle (PO_4)	1.5
<hr/>	
Total dissolved solids	580.0

M. 1748—Well water from R. S. Hanna, Maximo Point, Pinellas County. For Florida Geological Survey.

(Milligrams per liter.)

Phosphate radicle (PO_4)	0.0
Silica (SiO_2)	42.2
Sulfate radicle (SO_4)	558.6
Carbonate radicle (CO_3)	0.0
Bicarbonate radicle (HCO_3)	180.0
Chlorine (Cl)	1117.0
Iron and Aluminum ($\text{Fe}+\text{Al}$)	2.6
Calcium (Ca)	328.6
Magnesium (Mg)	122.8
Potassium (K)	8.8
Sodium (Na)	462.2
Oxygen (O) (Calculated)	7.8
<hr/>	
Total dissolved solids	2830.6

These may be combined as follows:

Potassium Chloride (KCl)	24.8
Sodium Chloride (NaCl)	1175.2
Magnesium Chloride (MgCl ₂)	489.9
Calcium Chloride (CaCl ₂)	46.7
Calcium Chloride (CaSO ₄)	791.7
Calcium Bicarbonate Ca (HCO ₃) ₂ ..	233.1
Calcium Silicate (CaSiO ₃)	56.9
Silica (SiO ₂)	12.7
Iron and Aluminum (Fe+Al)	2.6
	<hr/>
Total dissolved solids	2839.6

M. 1749—Well water from well located at Passa-Girille
Pinellas County. For Florida Geological
Survey.

(Milligrams per liter.)

Silica (SiO ₂)	46.2
Iron and Aluminum (Fe+Al)	6.2
Calcium (Ca)	336.8
Magnesium (Mg)	187.9
Sodium (Na)	611.9
Potassium (K)	10.9
Chlorine (Cl)	1569.2
Carbonate radicle (CO ₃)	0.0
Bicarbonate radicle (HCO ₃)	294.4
Sulfate radicle (SO ₄)	754.7
Phosphate radicle (PO ₄)	0.0
	<hr/>
Total dissolved solids	3775.3

These may be combined as follows:

Potassium Chloride (KCl)	20.8
Sodium Chloride (NaCl)	1555.3
Magnesium Chloride (MgCl ₂)	777.9
Calcium Chloride (CaCl ₂)	25.0

Calcium Sulfate (CaSO_4)	1068.6
Calcium Bicarbonate $\text{Ca}(\text{HCO}_2)_2$	271.6
Calcium Silicate (CaSiO_2)	10.7
Silica (SiO_2)	39.2
Iron and Aluminum ($\text{Fe}+\text{Al}$)	6.2
	3775.3
Total dissolved solids	3775.3

- M. 1753—Tallahassee City Water from J. Stuart Lewis, Tallahassee.
 Total dissolved solids (parts per 1,000,000)= 165
 A moderately mineralized water.
- M. 1754—Well water from John D. Gable, Bonifay.
 40-foot well, 2 miles from Bonifay.
 Total dissolved solids (parts per 1,000,000)= 89
 A moderately mineralized water.
- M. 1756—Well water from G. H. Townsend, Greenville.
 Total dissolved solids (parts per 1,000,000)= 60
 A lightly mineralized water.
- M. 1804—Well water (Old Supply) from Board of Trade, Palatka.
 Total dissolved solids (parts per 1,000,000)= 52
 A lightly mineralized water.
- M. 1805—Well water (New Supply) from Board of Trade, Palatka.
 Total dissolved solids (parts per 1,000,000)= 625
 A very highly mineralized water.

- M. 1806—Well water from Orrin Randolph,
West Palm Beach.
54-foot well at Lake Worth.
Total dissolved solids (parts per
1,000,000) 220
A highly mineralized water.

MISCELLANEOUS SAMPLES.

- M. 1653—Pipe Clay, from T. S. Cooper, Sanborn
M. 1654—Impure Limestone, from V. H. Lanier, Tampa.
M. 1655—Impure Limestone, from V. H. Lanier, Tampa.
M. 1656—Quartz, with Mica Specks, from W. J. San-
ders, Astor Park.
M. 1658—Impure Limestone, from L. B. Skinner,
Dunedin.
M. 1659—Soft Phosphate, from G. P. Walker,
Clearwater.
Total Phosphoric Acid (%) 27.41
Equivalent to Bone Phos. of Lime (%) 59.89
M. 1660—Infusorial Earth, from F. A. Preston,
Bainbridge, Ga.
Water (H₂O) (%) 6.77
Volatile matter (%) 7.47
Silica (SiO₂) (%) 77.98
(After Ignition.)
Silica (%) 89.70
M. 1661—Shell Marl, from R. S. Mitchell, Pensacola.
M. 1662—Rock Phosphate, from J. D. Johnson,
Mayo.
Total Phosphoric Acid (%) 25.95
Equivalent to Bone Phos. of Lime (%) 56.79
M. 1663—Shell Marl, from A. D. Campbell, Chipley.
M. 1664—Impure Sodium Sulphate, from M. P.
Cain, Starke.

- M. 1665—Phosphate, from R. L. Schenck, Madison.
 Total Phosphoric Acid (%)34.60
 Equivalent to Bone Phos. of Lime (%) ..75.60
- M. 1666—Dog's stomach, from Dr. Mergie Ward, Branford.
- M. 1667—Marl, from H. M. Brittan, Ojus.
- M. 1668—Dog's stomach, from J. E. Alexander, DeLand.
- M. 1669—Dog's stomach, from Dr. R. A. Shine, Tallahassee.
- M. 1670—Peat, from A. D. Curry, Palatka.
 Ammonia (in original sample) (%) ... 1.12
- M. 1671—Pine Pollen, from Southern Land Securities Co., Bartow.
- M. 1675—Sandy Clay, from J. N. Whitner, Sanford.
- M. 1683—Impure Limestone, from J. M. Armstrong, Argyle.
- M. 1686—Shell Marl, from W. J. Jenkins, Round Lake.
- M. 1690—Boiler Scale, from Elias Bach & Son, Dade City.
- M. 1691—Clay, from C. W. Cox, Bennett.
- M. 1692—Impure Limestone, from C. W. Cox, Bennett.
- M. 1693—Pyrites from N. C. Cant, Whitney.
- M. 1695—Limestone, from H. D. Stewart, Live Oak.
 Calcium Oxide (CaO) (%)54.36
 Equivalent to Calcium Carbonate
 (CaCO₃) (%)95.97
- M. 1696—Iron Sandstone from E. D. Jones, Compass Lake.
- M. 1697—Peaty Marl from E. D. Jones, Compass Lake.
- M. 1698—Yellow Hardpan, from E. D. Jones, Compass Lake.
- M. 1703—Glue, from B. E. Leonard, Jacksonville.
- M. 1704—Phosphate, from A. H. Williams, Tallahassee.
 Total Phosphoric Acid (%)14.84
 Equivalent to Bone Phos. of Lime (%) ..32.43

- M. 1705—Limestone, from Dr. M. F. Huntley, Astor Park.
 Total Phosphoric AcidTrace
- M. 1706—Silicated Coral, from C. M. Fellows, Cottondale.
- M. 1707—Flint, from J. M. Cremen, Cottondale.
- M. 1708—Silica, from J. Q. Langley, DeFuniak Springs.
- M. 1709—Limestone, from Consolidated Naval Stores Co., Jacksonville.
- M. 1710—Limestone, from Futch Realty Co., Lake City.
- M. 1713—Kaolin, from W. C. Kimler, Davenport.
- M. 1714—Impure Limestone, from W. B. Snyder, Ft. Lauderdale.
- M. 1715—Phosphate, from E. B. Epps, Tallahassee.
 Total Phosphoric Acid (%)23.98
 Equivalent to Bone Phos. of Lime (%)52.49
- M. 1716—Iron Ore (Hematite), from J. D. Rooney, Jacksonville.
- M. 1717—Brown Ochre, from J. D. Rooney, Jacksonville.
- M. 1718—Impure Kaolin, from J. C. Sheffield, Lake City.
- M. 1719—Rock Phosphate, from The Standard Plate-mite Co., Eustis.
 Total Phosphoric Acid (%)36.95
 Equivalent to Bone Phos. of Lime (%)78.77
- M. 1720—Rock Phosphate, from C. L. Leggett, Greenville.
 Total Phosphoric Acid (%)33.91
 Equivalent to Bone Phos. of Lime (%)74.99
- M. 1730—Mica, from G. C. Vann, Shady Grove.
- M. 1731—Mud, from S. W. Johnson, Panama City.
- M. 1732—Impure Kaolin, from C. W. Deen, Lakeland.
- M. 1733—Gypsum, from J. J. Ganey, Rosewood.
- M. 1734—Impure Limestone, from Lyle & Edwards, Live Oak.
- M. 1738—Impure Limestone, from C. W. Cox, Bennett.

- M. 1740—Impure Limestone, from F. B. Godfrey, Alachua.
- M. 1741—Impure Kaolin, from G. F. Bullard, McMeekin.
- M. 1743—Carbonaceous Clay, from Wm. A. Sessoms, Bonifay.
- M. 1744—Calcareous Sandstone, from J. B. Glen, Chipley.
- M. 1745—Impure Limestone, from W. C. Holiday, Oviedo.
- M. 1746—Crude Kaolin, from G. D. Ramp, Bartow.
- M. 1750—Linsced Oil, from A. J. Harrell, Ellenton.
LeadTrace.
- M. 1751—Marl, from Fellsmere Farms Co., Fellsmere.
(Air Dry Sample.)
Lime (%)26.56
Equivalent to Carbonate of Lime (%)..38.51
Ammonia (%) 0.23
Phosphoric Acid (%) 0.115
Potash (%) 0.07
Insoluble Matter (sand) (%)56.42
- M. 1752—Muck, from Fellsmere Farms Co., Fellsmere.
(Air Dry Sample.)
Ammonia (%) 1.28
Phosphoric Acid (%) 0.01
Potash (%) 0.04
LimeTrace
- M. 1755—Sand (containing specks of Mica), from A. B. Lowry, Ft. Pierce.
- M. 1757—Crude Kaolin, from Dan Wear, Bartow.
- M. 1758—Hard Pan (cemented with Iron and organic matter), J. J. Lamb, Bradentown.
- M. 1759—Cane Syrup, W. J. Singletary, Grand Ridge.
- M. 1760—Sandstone, from A. C. Thomas, Cottondale.
- M. 1761—Marl (No. 1), from Bonita Land Co., Ft. Myers.

- M. 1762—Marl (No. 2), from Bonita Land Co., Ft. Myers.
- M. 1763—Ground Limestone, Atwood Grape Fruit Co., Manavista.
- M. 1764—Soft Limestone, from J. D. Rooney, Jacksonville.
 Calcium Oxide (CaO) (%) 55.34
 Equivalent to Calcium Carbonate
 (CaCO₃) (%) 95.55
- M. 1800—Soft Limestone, from A. Nigh, Parrish.
- M. 1801—White Lead, from Miss Inez Abernethy, Woman's College, Tallahassee.
 Lead and lead compounds Absent
 Zinc oxide Present
 Barytes (Barium Sulfate) Present
 Oil Present
- M. 1802—Slacked Lime from Gadsden Lumber Co., Quincy.
 Water and insoluble matter (%) 3.79
 Calcium Carbonate (%) 96.50
- M. 1803—Ground Limestone, from Gadsden Lumber Co., Quincy.
 Water & Insoluble matter (%) 5.55
 Calcium Carbonate (%) 94.45
- M. 1807—Linseed Oil "No. 1" from the Delzell Enterprise Co., Greensboro,
 Iodine number, 185.84.
 Not adulterated.
- M. 1808—Linseed Oil "No. 2" from the Delzell Enterprise Co., Greensboro,
 Iodine number, 117.93.
 Adulterated.

ANALYSIS OF EVERGLADE SOILS.

The following analyses of Everglade soils, samples taken at various points in the Everglades, from Lake

Okeechobee to the Miami River, near the banks of the State Canals, are located on the accompanying map.

The samples were taken in duplicate by representatives of the United States Agricultural Department, and the Drainage Commissioners of the State of Florida.

The surface soils samples are taken from the surface to 12 inches deep the subsoils from 12 inches to 36 inches deep.

The average of the series shows:

Ammonia (NH_3)	3.10%
Phosphoric acid (P_2O_5)	0.18%
Potash (K_2O)	0.08%

All samples reported are on an air dry basis.

The Ammonia (Nitrogen) determinations are made by the official modified Gunning Method for fertilizer. The Potash and Phosphoric Acid determinations by the official method for fertilizers.

M. 1784—Maximum Ammonia	4.41 %
Soil Sample No. 29.	
M. 1793—Minimum Ammonia	0.44 %
Sandy sub-soil No. 38.	
M. 1792—Maximum Phosphoric Acid	0.53%
(Evidently added phosphates on cultivated soil).	
Soil No. 37.	
M. 1795—Minimum Phosphoric Acid	0.04 %
Sub-soil No. 42.	
M. 1770—Maximum Potash	0.175%
Sub-soil No. 14.	
M. 1790—Minimum Potash	0.03 %
Soil No. 35.	
M. 1793—Minimum Potash	0.03 %
Sub-soil No. 37.	

EVERGLADE SOILS.

Sample taken from Lake Okeechobee to Miami, near
Banks of State Canals.

M. 1765—Everglade Soil No. 9.

Surface soil, S. New River Canal, NE. $\frac{1}{4}$ Sec.
4 T. 46, R. 35,

Moisture	12.06	%
Ammonia	3.35	%
Phosphoric Acid	0.26	%
Potash	0.115	%

M. 1766—Everglades Soil No. 10.

Sub-soil No. 9.

Moisture	12.22	%
Ammonia	3.52	%
Phosphoric Acid	0.19	%
Potash	0.085	%

M. 1767—Everglades Soil No. 11.

Surface soil, shores of Lake Okeechobee,
Demonstration Farm, West of S. New River
Canal. Cultivated field.

Moisture	13.81	%
Ammonia	3.72	%
Phosphoric Acid	0.13	%
Potash	0.195	%

M. 1768—Everglades Soil No. 12.

Sub-soil of No. 11.

Moisture	11.46	%
Ammonia	2.94	%
Phosphoric Acid	0.098	%
Potash	0.115	%

M. 1769—Everglades Soil No. 13.

West side of S. New River Canal, near Lake
Okeechobee,

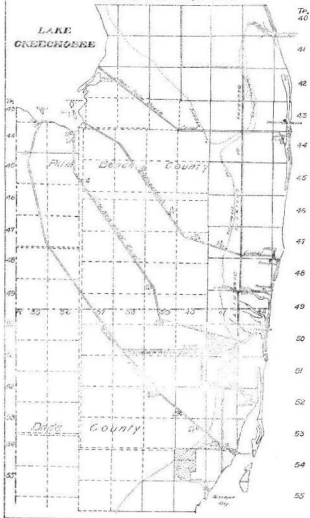
Virgin Soil.

Moisture	11.29	%
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	Ammonia	2.86 %
	Phosphoric Acid	0.28 %
	Potash	0.165%
M. 1770 —Everglades Soil No. 14.		
	Sub-soil of No. 13.	
	Moisture	10.38 %
	Ammonia	2.36 %
	Phosphoric Acid	0.37 %
	Potash (Maximum)	0.175%
M. 1771 —Everglades Soil No. 15.		
	South New River Canal, near Lake Okeechobee. Cultivated Land.	
	Moisture	13.04 %
	Ammonia	3.37 %
	Phosphoric Acid	0.30 %
	Potash	0.105%
M. 1772 —Everglades Soil No. 16.		
	Sub-soil of No. 15.	
	Moisture	11.06 %
	Ammonia	2.56 %
	Phosphoric Acid	0.21 %
	Potash	0.115%
M. 1773 —Everglades Soil No. 17.		
	Sec. 11, T. 45, R. 38. East of Hillsboro Canal.	
	Moisture	13.13 %
	Ammonia	4.37 %
	Phosphoric Acid	0.20 %
	Potash	0.07 %
M. 1774 —Everglades Soil No. 18.		
	Sub-soil of No. 17.	
	Moisture	13.17 %
	Ammonia	3.64 %
	Phosphoric Acid	0.05 %
	Potash	0.06 %

M. 1775—Everglades Soil No. 19.	
Sec. 14, T. 46, R. 39, 25 miles from Lake Okeechobee, East of Hillsboro Canal.	
Moisture	12.09 %
Ammonia	4.95 %
Phosphoric Acid	0.11 %
Potash	0.65 %
M. 1776—Everglades Soil No. 20.	
Sub-soil of No. 19.	
Moisture	12.82 %
Ammonia	2.82 %
Phosphoric Acid	0.05 %
Potash	0.97 %
M. 1777—Everglades Soil No. 21.	
Sec. 9, T. 47, R. 40, 32 miles from Lake Okeechobee, North of Canal.	
Moisture	12.42 %
Phosphoric Acid	0.15 %
Potash	0.94 %
M. 1778—Everglades Soil No. 22.	
Sub-soil of No. 21.	
Moisture	11.16 %
Ammonia	3.71 %
Phosphoric Acid	0.06 %
Potash	0.94 %
M. 1779—Everglades Soil No. 23.	
Sec. 29, T. 47, R. 41, North of Canal.	
Moisture	11.83 %
Ammonia	3.06 %
Phosphoric Acid	0.03 %
Potash	0.07 %
M. 1780—Everglades Soil No. 24.	
Sub-soil of No. 23.	
Moisture	12.74 %
Ammonia	3.00 %
Phosphoric Acid	0.06 %
Potash	0.06 %

MAP
Showing
Location of Soil Samples.
Collected by Chief Drainage Engineer
State of Florida, August 1912.



M. 1781—Everglades Soil No. 25.

Cleared land on border of Lake Okeechobee,
West of N. New River Canal. Virgin Soil.

Moisture	10.81 %
Ammonia	2.89 %
Phosphoric Acid	0.32 %
Potash	0.105 %

M. 1782—Everglades Soil No. 27.

1¼ mile S. of Lake Okeechobee, on West side
of N. New River Canal.

Moisture	10.19 %
Ammonia	2.97 ¼ %
Phosphoric Acid	0.46 %
Potash	0.085 %

M. 1783—Everglades Soil No. 28.

Subsoil of No. 27.

Moisture	11.65 %
Ammonia	3.32 %
Phosphoric Acid	0.20 %
Potash	0.115 %

M. 1784—Everglades Soil No. 29.

East side of N. New River Canal, 10 miles S.
of Lake Okeechobee.

Moisture	12.54 %
Ammonia (Maximum)	4.41 %
Phosphoric Acid	0.29 %
Potash	0.05 %

M. 1785—Everglades Soil No. 30.

Subsoil of No. 29.

Moisture	14.06 %
Ammonia	4.32 %
Phosphoric Acid	0.20 %
Potash	0.05 %

M.	1786—Everglades Soil No. 31, Center of Sec. 29, T. 48, R. 39, West of N. New River Canal.	
	Moisture	14.09 %
	Ammonia	3.72 %
	Phosphoric Acid	0.14 %
	Potash	0.07 %
M.	1787—Everglades Soil No. 32, Sub-soil of No. 31.	
	Moisture	11.08 %
	Ammonia	3.12 %
	Phosphoric Acid	0.06 %
	Potash	0.06 %
M.	1788—Everglades Soil No. 33, SE. $\frac{1}{4}$ Sec. 34, T. 49, R. 39, South of Canal.	
	Moisture	13.41 %
	Ammonia	3.51 %
	Phosphoric Acid	0.18 %
	Potash	0.08 %
M.	1789—Everglades Soil No. 34, Sub-soil of No. 33.	
	Moisture	13.28 %
	Ammonia	2.98 %
	Phosphoric Acid	0.06 %
	Potash	0.05 %
M.	1790—Everglades Soil No. 35, Center of Sec. 3, T. 50, R. 40, North of Canal.	
	Moisture	13.04 %
	Ammonia	3.12 %
	Phosphoric Acid	0.17 %
	Potash (Minimum)	0.03 %
M.	1791—Everglades Soil No. 36, Sub-soil of No. 35.	
	Moisture	11.04 %
	Ammonia	3.42 %
	Phosphoric Acid	0.11 %
	Potash	0.07 %

M. 1792—Everglades Soil No. 37.	
"Musca Isle" Grove, South of Miami Canal.	
Cultivated Soil—Evidently added Phosphate.	
Moisture	9.02 %
Ammonia	2.33 %
Phosphoric Acid (Maximum)	0.53 %
Potash	0.05 %
M. 1793—Everglades Soil No. 38.	
Sub-soil of No. 37. Sandy sub-soil.	
Moisture	1.52 %
Ammonia (Minimum)	0.44 %
Phosphoric Acid	0.24 %
Potash (Minimum)	0.03 %
M. 1794—Everglades Soil No. 41.	
Center of Sec. 11, T. 53, R. 40.	
Moisture	14.86 %
Ammonia	3.47 %
Phosphoric Acid	0.11 %
Potash	0.085 %
M. 1795—Everglades Soil No. 42.	
Sub-soil of No. 41.	
Moisture	13.14 %
Ammonia	3.60 %
Phosphoric Acid (Minimum)	0.04 %
Potash	0.06 %
M. 1796—Everglades Soil No. 43.	
NE. $\frac{1}{4}$ Sec. 31, T. 52, R. 40.	
Moisture	11.63 %
Ammonia	3.44 %
Phosphoric Acid	0.15 %
Potash	0.06 %
M. 1798—Everglades Soil No. 45.	
E. $\frac{1}{2}$ Sec. 9, T. 52, R. 39.	
Moisture	12.32 %
Ammonia	4.07 %
Phosphoric Acid	0.13 %
Potash	0.07 %

M. 1799—Everglades Soil No. 46.

Subsoil of No. 45.

Moisture	12.38 %
Ammonia	3.67 %
Phosphoric Acid	0.25 %
Potash	0.07 %

NOTE.—Numbers 1792 and 1793—soil No. 37 and subsoil No. 38—taken from "Musa Isle Grove"—a cultivated orange grove, have evidently been fertilized with commercial fertilizers, particularly phosphates.