

1898

# Tenth annual report of the agricultural experiment stations of the Louisiana State University and A. & M. College.

Louisiana State University and Agricultural & Mechanical College

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TENTH ANNUAL REPORT

OF THE

Agricultural Experiment Stations

OF THE

LOUISIANA STATE UNIVERSITY

AND

A. & M. COLLEGE,

FOR 1897.

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TO THE GOVERNOR.

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BATON ROUGE.

PRINTED AT THE TRUTH BOOK AND JOB OFFICE.

1898.

LOUISIANA STATE UNIVERSITY AND A. AND M. COLLEGE, }  
OFFICE OF STATE EXPERIMENT STATION, }  
Baton Rouge, La., January 24, 1898. }

To His Excellency, Murphy J. Foster, Governor of Louisiana :

SIR—In accordance with the provisions of Section 3 of the Act of Congress to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an Act approved July 2d, 1862, and the Acts supplementary thereto, I beg leave to submit a report of the operations of the Louisiana Agricultural Experiment Stations, including a statement of the receipts and disbursements from July 1st, 1896 to July 1st, 1897.

#### STATION NO 1.

Sugar Experiment Station, Audubon Park, New Orleans, has continued the series of experiments in the field, laboratory and sugar house with sugar canes hitherto reported. In the field trials with seedlings, *i. e.*, varieties of canes grown from the pure seed of the cane, several have proven good both in tonnage and sugar content. One of them is deserving of special mention. No. 74. It has now been tested for four years, and this year the results have been such as to justify the Station in distributing small quantities of it among the planters of the State. It has yielded over forty tons per acre, and with a mill extraction of 78 per cent., its juices had a density of 18 degrees, Brix, and polarized nearly 17 per cent. sucrose.

It has been planted largely this year, with a view of a more extended distribution among the planters next fall.

In the sugar house several pieces of new machinery have been tested. The new circular diffusion battery, with its complete system of hydraulics, works admirably. This was a gift from one of the recent students of the Audubon Sugar School, Mr. S. E. Suarez, Cucuta, United States of Colombia, South America.

The chemistry of the sugar cane, and the changes produced by the different methods of clarification, have been continued from last year in the laboratory and a bulletin covering the results of such investigations will be soon issued by this Station.

The citrus grove replanted after the severe freeze of 1894-95, bore for the first time this year a small quantity of fruit. Over seventy-five varieties of oranges and pomelos have been secured, and buds from any variety are cheerfully given to every grower of oranges in this State.

The alfalfa crop upon this Station is a marvelous success. From a two acre cut, planted in October, 1895, sixteen cuttings have been made to date, and the stand is still good and plants vigorous. Patches sown in the fall of 1896 to 1897 are also equally as luxuriant.

It should be seeded in this latitude in October, and at the rate of a bushel to five or six acres. The hay from the cuttings made in the summer readily sold for \$15 per ton.

The Velvet Bean (*Dolichos multiflorus*) has been successfully grown on all three of the stations. It is an immense viner and produces the largest quantity of forage of any plant known. It also gives, late in the season, a goodly yield of pods. As an improver of soil, it must rank in the first class of leguminous plants. A quantity of seed was last year distributed over the State, and this year a much larger supply is available for the same purpose.

Red and crimson clovers have also done well on this station.

#### STATION NO. 2.

State Experiment Station, Baton Rouge, La., has harvested another excellent crop of cigar tobacco. The previous crops, after being properly cased, have been made into cigars and distributed through middle Louisiana. The praise accorded by those who have smoked them, together with the testimony of the manufacturers, clearly substantiate the claim already made, that middle Louisiana can grow profitable crops of cigar tobacco. The crops generally upon this station were fairly good, while the small grain and clover yields were very good.

The Horticultural Department has received many valuable additions to its orchard and gardens. In the latter, as also at Calhoun and Audubon Park, careful experiments have been made to test home-grown seed of nearly all kinds of vegetables against those grown in the North and East. It is gratifying to note that in nearly every instance the former has proven the equal, and frequently the superior of the latter. This is encouraging to Southern seed growers, and if abundantly proven by future experiments, will greatly extend the seed growing industry in the South. Bulletin on Horticultural Results, now being prepared for the press, will give the detailed results.

Prof. W. R. Dodson has greatly increased the number of plants in the Botanical Garden, by purchase and exchange. He has also conducted for several years a series of experiments looking to the solution of the presence of red rice in our rice fields, and how to eradicate it, and his results are contained in a bulletin now in press.

Under Act 129 of 1894, Prof. H. A. Morgan has been called upon several times to inspect and disinfect fruit trees and plants brought from other countries. Recently some orange trees badly infected with scale have been introduced from Florida, and arrangements are now being made to have them thoroughly cleansed or destroyed.

In the spring, nine head of Western cattle were imported from St. Louis, and experiments instituted with them for studying carefully the Southern cattle fever and the various methods of rendering imported cattle immune.

Simultaneously, Prof. Morgan has studied the life history of the Southern cattle tick, the vehicle for transmitting the disease. While the results have been by no means conclusive, yet the investigations have been productive of valuable information and suggestions for future work. These investigations have been made by Profs. Dodson and Morgan and Drs. Staples and Dalrymple.

#### STATION NO. 3.

North Louisiana Experiment Station, Calhoun, has had a very fair season, and therefore good crops. Red and crimson



clovers and alfalfa have during the past year done well, yielding large and profitable crops. The small grains, after furnishing luxuriant pasturages through the winter to all kinds of stock, made bountiful harvests, and have impressed upon all observant farmers the necessity of growing these crops through the winter, and the certainty of abundant harvests if they be sown at the right time and in the right manner.

The yellow leaf tobacco is still successfully grown on this station. Prospects are good for the establishment at an early day of a factory for the manufacture of plug and smoking tobacco at Monroe. If this be done, quite a stimulus will be given to this new industry in North Louisiana.

Both the dairy and the poultry yards continue to receive popular attention from the farmers and their wives.

The camp meeting and fair held last September at this station was very largely attended. The exhibits were numerous and excellent. A large premium list provided by the Police Juries of several parishes stimulated exhibitors to strong competition.

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The following bulletins have been issued during the year:

Bulletin No. 46, Leguminous root tubercles.

Bulletin No. 47, Results of experiments at State Experiment Station, Baton Rouge, in corn, cotton, forage crops, etc.

Bulletin No. 48, Report of the Entomologist.

Bulletin No. 49, Commercial Fertilizers.

Bulletin No. 50, Red Rice.

Special Bulletin, Geology and Agriculture, Part IV.

Besides the above, the Director has prepared a book of 200 pages on the Sugar Cane, giving its history, botany and agriculture, which has been distributed among all interested in sugar growing in this State.

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The following constitute the present staff of the stations:

SUGAR EXPERIMENT STATION NO. 1.

Posotffice, Audubon Park, New Orleans, La.

Wm. C. Stubbs, A. M., Ph. D., Director.

R. E. Blouin, M. S., Assistant Director and Chemist.  
 H. W. Taylor, B. S., Chemist.  
 C. C. Krumbhaar, Mechanical Engineer.  
 Geo. Chiquelin, Sugar Maker.  
 W. D. Clayton, B. S., Farm Manager.  
 E. S. Matthews, B. S., Soil Physicist.  
 Jas. K. McHugh, Secretary and Stenographer.

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STATE EXPERIMENT STATION NO. 2.

Postoffice, Baton Rouge, La.

Wm. C. Stubbs, A. M., Ph. D., Director.  
 D. N. Barrow, B. S., Assistant Director.  
 H. Skolfield, Treasurer.  
 Chas. E. Coates, Jr., Ph. D., Chemist.  
 J. F. Harp, B. S., Assistant Chemist.  
 W. W. Clendenin, A. M., Geologist.  
 W. R. Dodson, A. M., Botanist.  
 W. H. Dalrymple, M. R. C. V. S., Veterinarian.  
 F. H. Burnette, Horticulturist.  
 James Clayton, Farm Manager.

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NORTH LOUISIANA EXPERIMENT STATION NO. 3.

Postoffice, Calhoun, La.

Wm. C. Stubbs, A. M., Ph. D., Director.  
 D. C. Sutton, B. S., Asst. Director.  
 Baynard Turpin, B. S., Chemist.  
 Ivy Watson, Farm Manager.  
 Gene Watson, Horticulturist.

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At the end of this report will be found a correct exhibit of the receipts and expenditures arising from the Hatch Bill for the fiscal year ending June 30th, 1897. It shows expenditures have equalled the receipts.

Respectfully submitted,

WM. C. STUBBS,

Director.

Statement of receipts and expenditures of the Louisiana Agricultural Experiment Station, in account with the United States Appropriation:

1897.	Cr.	Dr.
The receipts from the Treasurer of the United States for the year ending July 1st, 1897.....		\$15,000.00
By salaries.....	\$ 8,461.58	
Labor.....	2,267.34	
Publications.....	473.40	
Postage and stationery.....	291.41	
Freight and express.....	325.41	
Heat, light and water.....	188.76	
Chemical supplies.....	368.96	
Seeds, plants and sundry supplies.....	418.97	
Fertilizers.....	178.56	
Feeding stuffs.....	295.86	
Library.....	157.01	
Tools, implements and machinery.....	675.47	
Scientific apparatus.....	497.95	
Live stock.....	399.32	
	\$15,000.00	\$15,000.00

We, the undersigned members of the Bureau of Agriculture, to whom is entrusted the disbursement of the above funds, do certify that we have examined the accounts of the Experiment Station of the Louisiana State University and Agricultural and Mechanical College, for the fiscal year ending June 30th, 1897, and have found the above classification to be correct, and that the receipts for the time named are shown to be \$15,000, and that the corresponding disbursements are \$15,000, for all of which the proper vouchers are on file, and have been examined by us and found correct.

J. G. LEE,

Commissioner of Agriculture.

WM. GARIG,

Vice President of Supervisors and ex-Officio

Member of Bureau of Agriculture.

LIST OF PUBLICATIONS.

FIRST SERIES.

\*Bulletin No. 1, Organization of Sugar Experiment Station.

\*Bulletin No. 2, Manurial requirements of soil.



- \*Bulletin No. 3, Experiments with various crops.
- \*Bulletin No. 4, Results of experiments with oats.
- \*Bulletin No. 5, Results of experiments with sorghum.
- \*Bulletin No. 6, Results of experiments with corn.
- \*Bulletin No. 7, Field experiments with sugar cane.
- Bulletin No. 8, Experiments with cotton.
- \*Bulletin No. 9, Analyses and valuation of fertilizers.
- \*Bulletin No. 10, Sugar house and laboratory work  
in 1886.
- \*Bulletin No. 11, Experiments in oats.
- Bulletin No. 12, Experiments in sorghum.
- Bulletin No. 13, Cotton and its products.
- \*Bulletin No. 14, Sugar cane (field experiments).
- Bulletin No. 15, Rice.
- Bulletin No. 16, Potatoes, tomatoes, peas and small  
grains.
- Bulletin No. 17, Ensilage.
- \*Bulletin No. 18, Analyses of Commercial Fertilizers.
- Bulletin No. 19, Sorghum, field, laboratory and sugar  
house results; diffusion process.
- Bulletin No. 20, Sugar cane (field experiments).
- Bulletin No. 21, Report of State Experiment Station,  
Baton Rouge, 1888.
- Bulletin No. 22, Report of North Louisiana Experiment  
Station, Calhoun, 1888.
- Bulletin No. 23, Sugar cane, laboratory and sugar house  
results.
- Bulletin No. 24, Rice and its by-products.
- Bulletin No. 25, Analyses of Commercial Fertilizers.
- Bulletin No. 26, Report of State Experiment Station,  
Baton Rouge, 1889.
- \*Bulletin No. 27, Report of North Louisiana Experiment  
Station, Calhoun, 1889.
- \*Bulletin No. 28, Report of Sugar Experiment Station,  
1889.

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SECOND SERIES.

- \*Bulletin No. 1, Commercial Fertilizers.
- Bulletin No. 2, Texas screw worm.

Bulletin No. 3, Report of Horticultural Department for Baton Rouge and Calhoun Stations.

Bulletin No. 4, Irish potatoes; results at three stations.

Bulletin No. 5, Sugar making on a small scale (reprint with additions).

Bulletin No. 6, Sugar cane (field experiments, 1890).

Bulletin No. 7, Report of State Experiment Station, Baton Rouge.

Bulletin No. 8, Results of North Louisiana Experiment Station, Calhoun.

Bulletin No. 9, Sugar cane borer and its parasite.

\*Bulletin No. 10, Systematic feeding of work stock.

Bulletin No. 11, Report of sugar house and laboratory, 1890.

Bulletin No. 12, Commercial Fertilizers.

Bulletin No. 13, Sweet potatoes.

Bulletin No. 14, Sugar cane; field and laboratory results.

Bulletin No. 15, Report of veterinarian for 1891.

Bulletin No. 16, Results of North Louisiana Experiment Station, Calhoun.

Bulletin No. 17, Report of State Experiment Station, Baton Rouge.

Bulletin No. 18, Analyses of Commercial Fertilizers.

\*Bulletin No. 19, Forage crops, grasses, clovers and small grains.

Bulletin No. 20, Tobacco growing in Louisiana; results at Calhoun.

Bulletin No. 21, Results of North Louisiana Experiment Station, Calhoun, for 1892.

Bulletin No. 22, Report of State Experiment Station, Baton Rouge, 1892.

Bulletin No. 23, Analyses of Commercial Fertilizers.

Bulletin No. 24, Sugar cane; field experiments, physical and physiological.

Bulletin No. 25, Tobacco at North Louisiana Experiment Station.

Bulletin No. 26, Sugar cane; varieties of cane and striped versus purple.

\*Bulletin No. 27, Horticulture at Baton Rouge, Calhoun and Audubon Park.

Bulletin No. 28, Report of State Experiment Station, Baton Rouge.

\*Bulletin No. 29, Results for 1893, at Calhoun.

Bulletin No. 30, Sweet potatoes (with illustrations).

Bulletin No. 31, Domestic and Commercial Fertilizers.

Bulletin No. 32, Ramie, uses, history, composition, etc.

Bulletin No. 33, Tobacco growing in Louisiana, with results at Calhoun.

Bulletin No. 34, Cattle feeding in Louisiana.

Bulletin No. 35, Report of North Louisiana Experiment Station, Calhoun, 1894.

Bulletin No. 36, Horticulture; results for 1894.

Bulletin No. 37, Windrowed versus standing canes.

Bulletin No. 38, Chemistry of sugar cane and its products.

Bulletin No. 39, Analyses of Commercial Fertilizers.

Bulletin No. 40, Cow pea; origin, botanical relations, chemical composition, feeding value, restorative virtues to the soil, etc.

Bulletin No. 41, Tobacco; results at Baton Rouge and Calhoun.

Bulletin No. 42, Horticulture; results for 1895.

Bulletin No. 43, Bovine tuberculosis in North Louisiana.

Bulletin No. 44, Charbon or anthrax, with experiences during recent outbreak in North Louisiana.

Bulletin No. 45, Analyses of Commercial Fertilizers and Paris Green.

Bulletin No. 46, Leguminous root tubercles.

Bulletin No. 47, Experiments in corn, cotton, forage crops, tobacco, etc., at State Experiment Station, Baton Rouge.

Bulletin No. 48, Report of the Entomologist.

Bulletin No. 49, Commercial Fertilizers.

Bulletin No. 50, Red rice.

#### SPECIAL BULLETINS.

The orange and other citrus fruits, from seed to market, with insects beneficial and injurious, with remedies for the latter.

## SPECIAL BULLETINS.

Sugar Cane, History, Botany and Agriculture.

## GEOLOGICAL BULLETINS.

\*Part I. A preliminary report upon the hills of North Louisiana, north of the Vicksburg, Shreveport and Pacific Railroad.

Part II. A preliminary report upon the hills of North Louisiana south of the Vicksburg; Shreveport and Pacific Railroad.

Part III. A preliminary report upon the Florida parishes of East Louisiana, and the bluff and prairie and hill lands of Southwest Louisiana.

Part IV. A preliminary report upon the bluff and alluvial lands of Louisiana.

## ANNUAL REPORTS.

1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897.

## BIENNIAL REPORTS.

\*Vol. I, 1886; \*Vol. II, 1888; \*Vol. III, 1890; Vol. IV, 1892; Vol. V, 1894; Vol. VI, 1896; Vol. VII, 1898.

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Reports and Bulletins marked thus (\*) are out of print and cannot be supplied.



