

TEXAS AGRICULTURAL EXPERIMENT STATIONS

BULLETIN NO. 134

NOVEMBER, 1910

REPORT OF THE DIRECTOR

ON THE

Establishment of the New State Stations



POSTOFFICE
COLLEGE STATION, BRAZOS COUNTY, TEXAS

Austin Printing Company.



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STATE AGRICULTURAL EXPERIMENT STATIONS.

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J. L. WELCH, Troupe Station.....	Troupe, Smith County
W. S. HOTCHKISS, Lubbock Station.....	Lubbock, Lubbock County
J. T. CRUSE, Fort Worth Station.....	Fort Worth, Tarrant County
R. L. YOUNG, Pecos Station.....	Pecos, Reeves County
J. W. BUELL, Denton Station.....	Denton, Denton County
_____ , Temple Station.....	Temple, Bell County
I. S. YORK, Spur Station.....	Spur, Dickens County
_____ , Angleton Station.....	Angleton, Brazoria County
J. K. FITZGERALD, Beaumont Station.....	Beaumont, Jefferson County

NOTE.—The main station is located on the grounds of the Agricultural and Mechanical College, in Brazos County. The postoffice address is College Station, Texas. Reports and bulletins are sent free upon application to the Director.

COLLEGE STATION, TEXAS, November 18, 1910.

Hon. A. B. Davidson, Lieutenant-Governor, Chairman Board of Control of State Experiment Stations, Austin, Texas.

DEAR SIR: I have the honor to submit herewith my biennial report for the State Experiment Stations during the past year:

The Thirty-first Legislature appropriated \$25,000.00 annually for the establishment of at least four additional State experiment stations, and for as many more of these stations as the Board of Control might determine upon. This Board, under the terms of the law, consists of His Excellency, Governor T. M. Campbell; yourself, as Lieutenant-Governor of the State, and Hon. Ed. R. Kone, as Commissioner of Agriculture. In the location of these stations I acted for Governor Campbell and represented him on the Board. The law providing for the creation of these stations stipulated that two of them should be west of the ninety-eighth meridian, one of them in the black land belt of North or Central Texas, and one in the rice belt of South or Southeast Texas. After the appropriations became available, September 1, 1909, the Board had a meeting at Galveston to receive propositions from the people in South and Southeast Texas relative to the establishment of the rice station. Propositions for the establishment of the station were received from a number of different places, notably from the people of Bay City, in Matagorda county; Angleton, in Brazoria county; from Rowan, also in Brazoria county; Booth, in Fort Bend county, and from the people of Jefferson county. Subsequently, the Board received a proposition from the citizens of Liberty, in Liberty county. The Board therefore adjourned its meeting from Galveston in order to visit in person these various sites that were offered for the location of the station. Subsequent meetings were held in Fort Worth and at Austin for the purpose of giving a hearing to those who might desire to solicit the establishment of a station in the black land belt of North or Central Texas. Propositions were received from Denton, Greenville, Mart and Temple. At a later date a meeting of the Board was held at Stamford in order to give a hearing to those interested in the establishment of the two stations west of the ninety-eighth meridian, and to receive propositions from the several competing places. At this meeting propositions were received from Spur, in Dickens county; Plainview, in Hale county; Lubbock, in Lubbock county; Sweetwater, in Nolan county, and Pecos, in Reeves county. After a hearing from all the places competing for experiment stations, the Board undertook to visit each place and investigate on the ground the best locations and the most favorable terms offered for the several stations. It took considerable time to do this traveling, and at a subsequent meeting of the Board, in Austin, the following places were selected for station sites: At Amelia, near Beaumont, in Jefferson county; at Angleton, in Brazoria county; at Temple, in Bell county; at Denton, in Denton county; at Spur, in Dickens county; at Lubbock, in Lubbock county, and at Pecos, in Reeves county. In addition, a feeding station, for

the purpose "of feeding and fattening live stock for slaughter," according to the terms of the law, was located at Fort Worth, in Tarrant county. All of these stations have met the obligations which they voluntarily assumed in order to have a station established in the respective localities, except Angleton, and the transfer of the property at Temple has not yet been perfected. So that we have in actual operation six new State stations.

It soon became evident to the Board, after listening to the argument presented by the citizenship of these various localities, that the number of stations specifically provided for by law would not meet the requirements of the agricultural conditions of the State. Texas is so large, with such varied climatic and soil conditions, and therefore widely different industrial conditions, that four stations, in the opinion of the Board, would not serve the purpose for which the appropriation was originally made, and would not meet the demands of the people of the State for relief through experiment stations, from agricultural problems which the farmers themselves could not undertake to solve. It was evident to the Board that two stations would be needed in the rice belt, one in the southern part of the State, and one in the southeastern part; two in the black land belt, one primarily for small grain and Indian corn, and one more particularly for cotton, corn and oats in the central black land belt. Therefore, stations were established at Denton and Temple. In the western part of the State, with its untried conditions and its vast area of fertile land and varying climate, it was believed that two stations would not by any means meet the requirements of the citizenship of that part of our State. A station was needed on the plains, one on the lower plains, and in addition thereto one somewhere near the Pecos river, where tests in irrigation could be made. Consequently, three stations were established in conformity with this belief of the Board; the irrigation station at Pecos, the plains station at Lubbock and the lower plains station at Spur. In addition to all these State stations, we have been doing cooperative work with the United States Department of Agriculture on a tobacco station at Nacogdoches, Texas. For the part maintenance of this station, supplementary to the money furnished by the United States Department, \$1,000.00 annually was appropriated by the Thirty-first Legislature for the years 1909-10 and 1910-11. The law creating these stations also provided that all State stations should be put under the jurisdiction of this Board. We had two stations already established, one at Beeville, in Bee county, since 1895; and one at Troupe, in Smith county, since 1902. There are, therefore, ten State stations in all, eight of which have been established and are actually under way.

DENTON STATION.

The citizens of Denton county contributed a cash bonus of \$5,000.00 for the establishment of a station adjacent to Denton and offered as a further inducement a tract of land, consisting of 101 acres, at something like \$25.00 an acre less than its real market value. The site selected is just outside the city limits and had fairly

good improvements on the property when it was turned over to the State, with 70 acres in cultivation and the balance in pasture. The cultivated land was already sown in wheat when the place was secured last April. It was too late, therefore, to make very many experiments at this station during the past year, and it was not considered advisable to destroy this growing wheat crop. A superintendent was employed at a salary of \$60.00 a month to take charge of this place and conduct the necessary repairs by his own labor and a hired laborer, and at the proper time to gather the wheat crop, which had been reserved in the purchase of the place as part payment on the land. The crop brought \$1014.40, and the place has been put into experimental plots of wheat, oats, barley and rye for another year. Some alfalfa has been sown and corn will be planted in the spring. The dwelling house has been repaired and repainted. The barns, which were in a bad state of repair have been improved and painted, a neat tenant house has been built, the field fence replaced or repaired, and the farm put in a thorough state of cultivation. We still owe on this place the sum of \$2,300.00.

FORT WORTH FEEDING STATION.

The land adjacent to Fort Worth was too expensive to expect the citizens to contribute property in *fee simple* for the use of the station. The Fort Worth Board of Trade, however, leased the most desirable tract of land adjacent to the city for a term of two years, renewable at their option for two years more, and two years additional thereafter. So that the lease, by contract, runs in conformity with the State appropriation for two years, but exists subject to the pleasure of the Station Board of Control and the Fort Worth Board of Trade for a total period of six years. The Board of Trade pays the rent on this place as it falls due per month. The State took possession of the place the first of last December, and had considerable improvements to make. Feeding pens had to be constructed for steers, sheep and hogs; tenant houses had to be repaired and some work done on the fences. It was the first of February before we were ready to begin actual work with live stock. Experiments were conducted with steers, hogs and sheep, and the results of the feeding tests will be published in bulletin form, now in the hands of the printer.

SPUR STATION.

We were given 160 acres of land and \$3,000.00 in cash at the Spur station, just one mile from the limits of the town. This territory is entirely new as a farming country, the little town of Spur itself being only three months old when we began work. We were, therefore, considerably hampered at the beginning in the way of making our improvements. The land was mesquite prairie and had to be grubbed, the sod broken, fences and houses built, wells bored and windmills raised and tanks built for water. Our barns had to be built, and all the necessary fences. Necessrily this was quite an undertaking in the way of improvements, in view of the fact that arrangements had to be made also for this year's crop. In the course of time plats were

planted to different varieties of Kaffir corn and milo maize, peanuts, *Kolthi* and *moth beans*, two new legumes, the seed of which were imported from India for trial, and different varieties of cotton. At the same time land was broken for wheat and oats, to be planted this fall, and has been maintained through the summer in dust mulch, in order that all moisture might be safely conserved. The spring was very dry and considerable difficulty was experienced in getting the hard sod land broken. Extra teams in addition to our regular station team had to be hired, and the land most thoroughly and carefully prepared in order that we might feel reasonably sure of a crop this year. The crop has, however, been very satisfactory under the conditions. The experimental notes have not yet been made up, but will be reported and published in due time. We have three bored wells on the place, two tanks, 70 acres in cultivation, fenced with rabbitt-proof wire, the balance of the place fenced for pasture. A nice five-room cottage for the Superintendent, two neat tenant houses and the necessary barns.

LUBBOCK STATION.

At Lubbock we had to confront practically the same conditions that we found at Spur, so far as getting ready for a crop was concerned. We were given 160 acres of land, some two and one-half miles out from town, on the open prairie, and the citizens of Lubbock also agreed to put us up a Superintendent's dwelling at a cost of \$1,800.00, and sink us a windmill well. These improvements were in time completed, but there remained much to be done on the part of the State. The land had to be grubbed, fenced and the sod turned and properly pulverized in order that a crop could be obtained for this year. A tenant house had to be built and a barn constructed. These improvements have all been finished in a neat, substantial manner. The land has been fenced, an orchard was set out and field crops planted, but the drouth has been so severe that it has been almost impossible to reach any results this year on sod land. We will have little to report from this station in the way of satisfactory results from experimental work, but with the fall rains which have come in that locality, small grains have been planted and the orchard and vineyard, which died out last summer, will be renewed.

PECOS STATION.

On account of the unexpected financial condition of the country, which has borne more heavily upon the people of West Texas than upon any other district of the State, and because of certain local financial obligations which the people of Reeves county had already assumed, Pecos has been very slow in perfecting the improvements which were agreed upon between the town and the Station Board when the station was located there. However, eighty acres of land, about two and one-half miles from town, has been turned over to the State. A well sunk and a splendid supply of water has been obtained, and the necessary equipment of engine and pumping ma-

chinery has been installed. The State took charge of the property the first of November. A Superintendent's house has been built, a tenant house and a barn. The land has been fenced, about 30 acres grubbed and broken, and some of it has been prepared for irrigation. An orchard will be set out this winter and regular field experiment begun next spring. A young man from California has been secured as Superintendent, and the station will be developed as rapidly as possible.

BEAUMONT STATION.

The citizens of Beaumont gave 100 acres of land and put up a neat five-room cottage for the Superintendent and built a very good barn. The place is located immediately between a station on the Southern Pacific Railroad known as Amelia and one on the Frisco Railroad known as Elizabeth, five miles west of Beaumont. The two railroads at this place are about one-half a mile apart, and a shell road connects the two stations. The land, therefore, fronts on a public road, with the Southern Pacific on the south and the Frisco on the north. It was fenced on two sides, and a part of the ground had been indifferently plowed. It was necessary, however, to build additional fences, to build a yard fence and lot fences, to dig drainage ditches and construct levees. All the land had to be rebroken. However, we succeeded in getting in our crops of rice, of Indian corn, peanuts, cowpeas and sorghum. The results have been fairly satisfactory, but we have been considerably bothered on account of our levees being new, permitting the water to leak from the irrigated land to the non-irrigated land. Our corn was late, but our rice crop was good; our cotton, peanuts and sorghum crops were all good. Results of the work will be reported later in a printed bulletin.

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It is not necessary to go into details here of the work done at Troupe and Beeville during the past year. It would require too much space in a report of this kind, but the results will be published in bulletins.

PURCHASE OF STOCK FOR THE NEW STATIONS.

When it became evident that as many as seven or eight new stations would be established, I began inquiry in regard to the purchase of horses or mules for these stations. I was anxious to put in good draft mares at all of the stations, except Temple, Angleton and Beaumont, and I thought mules ought to be purchased for these stations. I therefore purchased four good mules for the Beaumont station and sent an experienced buyer to Iowa to purchase grade draft mares, for the other stations, since it was impossible to obtain them in this State, and purchased a carload lot. These were distributed at Pecos, Lubbock, Spur, Fort Worth, Denton and one at Troupe. They are without exception high-grade mares, and have given most satisfactory service. They have all been bred, but not all of them are in foal. At a later date a brief bulletin will be published on the subject of brood mares on the farm. We have gained some important experience that we believe will be of value to farmers of the State.

I have not been disappointed in the purchase or use of these mares instead of using mules, but there are certain conditions which it is important to know in order to gain the best results by the use of mares instead of mules.

OTHER EQUIPMENT.

It has been a large expense to the State to buy the necessary equipment and teams for these farms. Wagons, plows, harrows, planters, hoes, axes and harness all had to be purchased outright. In addition, there were constant little expenses, as there are even on the simplest farm, that could not be anticipated, and yet had to be met in order to maintain the farm. An experiment station farm should not only carry out experiments that would be of value to the farmers when the results have been achieved, but it should serve in some measure as a model farm in its arrangement, in its equipment and in its neatness and well-appointed condition. It sometimes seems, and the farmer frequently believes, that the expense necessary to do this on his own farm is unwarranted; but the final effect on the country at large must be for good, and must contribute more to the material wealth of the community than is lost through the expense of labor. We have believed in this system, and have endeavored to so equip the station and so improve it and keep it that it would look attractive, not only to the farmer, but to any one coming near it.

TITLE TO STATION LANDS.

The Board took the position that as agents for the State they would be expected to secure title to these several station sites in *fee simple* before incurring the necessary expense of improvements attached to each piece of land. Therefore, at all of these stations, except at Fort Worth the State holds the land in *fee simple*; through the generous contributions of the citizenship of the respective localities where the stations are situated, the State has actually thus acquired more property than she has expended in money. That is to say, the total appropriation for the two fiscal years, beginning September 1, 1909, was \$50,000.00 for the establishment and maintenance of new stations. I think it will be a conservative estimate to say that the property acquired by the State is worth \$65,000.00.

SUPERVISION.

By the terms of the law the Director of the experiment station at College Station is made Director of the State stations also, and a local Superintendent is appointed for each station. In making these appointments the Board has deferred very largely to my judgment, and I have endeavored to select men whose training would peculiarly fit them for the position. Any sentiment of friendship or political preference has not in any way determined the selection of these men. As far as possible I have secured graduates of A. & M. Colleges, either of the Texas College or some other institution of a similar kind, who have been out long enough to gain practical experience in the line of

work that the station would engage in. Where this could not be done I have selected practical men with some previous training that would justify a belief in their fitness for the position. These Superintendents have given entire satisfaction and have justified my expectations. I have visited the stations as often as possible, and, where practicable, have supervised the expenditures and given my entire time and energy to station work. The main station, at College Station, supported by the United States government, has paid my entire salary, and has also paid my bookkeeper and stenographer, so that the State has been at no expense for supervision, except the salaries of local superintendents. With the growth of the work, however, it will probably be necessary to engage some additional help and pay for the same out of State funds. The work at College and at the State stations also will likely prove more than one man can do, and it is hardly fair to encroach too much upon the funds of the national government, engaging the time of a bookkeeper and stenographer. Texas is so large that it requires a considerable time to get around on a visit to the several stations, distributed as they are over the State to meet the agricultural conditions of the different districts.

A FINANCIAL STATEMENT

of the money received and disbursed, with the amount turned over to the station treasury is herewith attached, and an inventory of all property at the several stations is on file in my bookkeeper's office at College station.

RECOMMENDATIONS

William C. Brown, president of the New York Central Railroad, said that America could better afford the cost of one battleship each year expended in agricultural experiment station work than to spend it in strengthening the navy. The authorities at Washington, in reply to this, came out with the statement that not less than eighteen million dollars is being spent each year in this country by the agricultural departments in order that the productive capacity and efficiency of farms in this country may be increased. Of this vast amount a total sum of about one and one-half million dollars is spent in the several States, or \$30,000.00 annually in each State, by the respective experiment stations. This leaves about sixteen million dollars to be disbursed from Washington. Some of this is expended in Texas: much of it in the Southern States collectively. If it were equally divided among the States and Territories, including Alaska, it would amount to something over three hundred thousand dollars apiece. Texas gets of this amount, through the various agencies of the Agricultural Department and through the United States stations established in the State under the direction of this Department, as much, perhaps, as \$40,000.00 annually, the Brownsville station alone receiving \$10,000.00 from the United States government. So that under the present system of dispensing her money from Washington for agricultural purposes, she is giving far more than she is receiving, but even at this rate the United States government is probably contribut-

ing more for experiment station work in the State than the State contributes from her own treasury. We of the Southern States are more anxious to accept contributions from the national government than are the people of the Northern States, insofar as these gifts relate to agricultural work, although theoretically we advocate States' rights and local self-government. There is no other insidious agency so inclined to undermine local self-government and so centralize power as the acceptance by a people of money from the national government for the industrial development of their State. This applies particularly to educational matters, when the money is expended directly from Washington, rather than through the regularly constituted agency of the State. I do not mean to imply that we should reject the aid we are now getting from the national government in the development of Texas agriculture, but I do mean to emphasize the necessity of the State doing her part in order that we may not come to rely too much on other sources for the improvement of our agricultural and industrial conditions.

The Fort Worth station ought itself to have at least \$10,000.00 a year, and be enlarged into a breeding station, particularly for dairy cattle and sheep in addition to its present work as provided for by the terms of the law, namely, "feeding and fattening live stock for slaughter." Within the next decade Texas, with the opportunities given her by nature, ought to develop rapidly as a dairy State and in the sheep industry. We must now send to Illinois or some other Central-Western State for high-grade sheep, and the best breeds adapted to the different districts of this State is still a problematical question. It has been pretty clearly demonstrated that the Merinos are particularly suited for the western portion of our State, but practically nothing has been determined in regard to the kind of sheep that thrive best in the black lands, in East Texas and in South-Central Texas. The State ought to undertake and encourage this work, and it can be done nowhere else so well as at Fort Worth.

The opportunity which West Texas has to grow cotton and raise forage crops should form the farming basis for the development of the dairy industry in that part of our Commonwealth. No other nitrogenous or protein feed has been produced in this country that is so cheap from a financial efficiency as cottonseed meal, either for dairy purposes, for hogs, or for feeding horses and mules when the proper precautions are taken. The West, over a very large division of its territory, comprising an area equal to an ordinary sized State, can grow milo maize, Kaffir corn, cowpeas, peanuts, and several drouth resistant legumes that are admirably adapted as supplementary feeds to cotton seed or cottonseed meal; a combination of feeds, therefore, that form the basis of the dairy industry. Supplementary to this industry, hog raising would follow as a logical sequence. Fort Worth is the natural outlet for a large portion of this territory. It is the city most frequently visited by the people of the West. The dairy industry, with the proper demonstration at that point, would spread to the West and Northwest, contributing greatly to the development of all that territory.

Therefore, I submit the following recommendations:

1. That a deficiency appropriation be asked for from the Thirty-second Legislature, to finish paying for the land at the Denton Station.

2. That the stations be allowed the money received from the sale of products raised on the station farms. This has been done in the case of the Beeville and Troupe Stations up to the beginning of the last fiscal year. The sum is not very much, because a demonstration station is not conducted as a revenue producer, but the funds, of course, should be accounted for in the biennial report to the Legislature. The sum, though small, would materially aid at critical times toward the maintenance of the stations.

3. That the Thirty-second Legislature be asked for an emergency appropriation of \$5,000.00 for the further maintenance of the stations during the fiscal year of 1910-11.

4. That the appropriations for the years 1911-12 and 1912-13, or the next two fiscal years, be increased \$5,000.00 annually. In addition to the money amounting to \$50,000.00 appropriated for the establishment of the new stations, Beeville and Troupe have each received \$3,500.00 a year for their maintenance and support. This amounts to a total appropriations for all of the stations, \$32,000.00 a year, and I recommend that this sum be increased to \$37,000.00 annually, for the maintenance of the ten State stations, and that an additional sum of \$1,500.00 annually be appropriated for publishing bulletins.

Very respectfully submitted,

H. H. HARRINGTON,
Director.

**FINANCIAL STATEMENT NEW STATE EXPERIMENT STATIONS,
SEPTEMBER 1, 1909 TO SEPTEMBER 1, 1910.**

Legislative appropriation		\$ 25,000 00
Deficiency appropriation		5,000 00
Warrant for real estate credited back to Station fund		2,500 00
Traveling expenses	\$ 1,463 41	
Miscellaneous	5,053 86	
Implements, vehicles and harness.....	2,193 56	
Live stock	4,747 20	
Salary of Superintendents.....	3,599 16	
Feeding stuffs	3,324 51	
Real estate	7,500 00	
Building and improvements.....	4,318 96	
Vouchers approved and unpaid.....	284 70	
Unexpended balance	14 64	

\$ 32,500 00	\$ 32,500 00
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Credit to State Treasury, sale of products, \$1,267.00.

C. W. CRISLER,
Chief Clerk.