Texas Agricultural Experiment Station No. 6

I. Context

Denton County was organized in 1846, and the City of Denton established ten years later as the county seat. For its first ten years, agricultural pursuits in Denton County were mostly ranching. As early as 1857, farms began to show up on the open range. However, subsistence farming was the rule until the 1880s, when railroads reached Denton County. Now, farmers could expand to money-making crops that could be shipped to distant markets, and ranchers could ship their cattle by rail. The era of cattle drives was ending.

By 1881, two railroads – Texas and Pacific and Missouri-Kansas and Texas – reached the city of Denton. In 1887, a section of the Gulf, Colorado and Santa Fe railroad was completed through western Denton County. New towns emerged along the railroad lines and became local market towns, while Denton, the county seat, became the center for the county's agricultural activity. [1]

As farmers transformed the prairie into wheat fields, the western section of Denton County along the railroad became known as the prairie wheat belt. At Krum, Sanger, Valley View and other towns all along the railroad lines, grain storage warehouses, elevators and mills were built to handle the grain waiting to be exported.

In 1886, Denton County farmers formed the Alliance Milling Company, a cooperative milling operation with more than seven hundred stockholders, located in the city of Denton. Two years later, in 1888, Alliance's Peacemaker Flour won the first premium award at the Texas State Fair in Dallas and captured the top prize for the next nine years. After ten years, Peacemaker was barred from further competition. Alliance's Peacemaker Flour went on to win a Gold Medal at the World's Fair in St. Louis, Missouri, and a Gold Medal at the World's Fair in Paris, France, the only one of its kind won by the United States. [2]

On June 30, 1898, the Denton Record and Chronicle reported 800,000 bushels of wheat raised county-wide.

"Foreign buyers are stationed at all points on the railroad in the wheat raising portions of the county," the newspaper report said.

So, when the U.S. government decided to fund experiments to improve agriculture, Denton was already a major agriculture hub and ready to try for one of the experiment stations to be located in Texas.

Agricultural experiment stations were authorized when the U.S. Congress passed the Hatch Act March 2, 1887. The Act called for agricultural experiment stations to be established by land grant colleges in each state. Federal grants were appropriated to be paid directly to each state to establish the stations. [3]

According to the Hatch Act, the agricultural experiment stations were needed to "aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science."

Within a month after the Act was passed, the Texas Agricultural Experiment Station was established at Texas Agricultural and Mechanical College of Texas (Texas A&M) to conduct research into the state's crop and livestock operations.

II. Overview

By March 1888, scientists at Texas A&M were conducting the first research projects at College Station. The next year, field tests were conducted at several state prison farms, the Gatesville Reform School, and Prairie View Normal College. Several temporary stations were established, but the first permanent regional station opened in 1894 in Beeville, Bee County, Texas. In 1902, a station was established at Troupe in Smith County. [4]

By 1909, the Texas Legislature had approved Senate Bill 51 creating agricultural experiment stations. The Thirty-First Legislature appropriated $25,000 annually to establish at least four stations and

as many more as the Board of Control (the governor, lieutenant governor, and secretary of agriculture) might decide were needed.[5]

The legislation stipulated that two stations should be located west of the ninety-eighth meridian, one in the blackland belt of north or central Texas, and one in the rice belt of South or Southeast Texas. The Board of Control later decided that Texas' varied climatic and soil conditions demanded more stations, and they added another station in the rice belt, another station in the blackland belt and a station for irrigation tests on the Pecos River.[6]

As soon as word came about the planned agricultural experiment sub-stations, the Denton Chamber of Commerce began to actively pursue locating a station in Denton. The Chamber appointed a committee of three members to work on the project.[7]

On December 3, 1909, Dr. H.H. Harrington, retired president of Texas A&M who was still Director of Stations, traveled to Denton to inspect the proposed site and meet with the Chamber's committee. Dr. Harrington was president of the college from September 8, 1905, until August 7, 1908. He was named director of stations in 1906 while serving as president. [8]

On Jan. 10, 1910, J.N. Rayzor, one of the three-man Chamber committee, received word that Station No. 6 would be located in Denton. [9]

Other sites chosen were Amelia near Beaumont in Jefferson county; Angleton in Brazoria County; Temple in Bell County; Spur in Dickens county; Lubbock in Lubbock county and Pecos in Reeves county. The board also located a station for "feeding and fattening live stock for slaughter" at Fort Worth in Tarrant County. [10]

So, by 1910, six new State stations were actually in operation. Amelia had not met the requirements to have a station established, and the transfer of property for the Temple site had not been completed, but all of the other stations were ready for business.

The Hatch Act had provided $15,000 each year to each state. In 1906, Congress passed the Adams Act to increase funding for the experiment stations. Congress appropriated $5,000 per state the first year, with an annual increase of $2,000 per state until the amount authorized by the Adams Act

reached $15,000. Combined with Hatch Act funds, each state thus received $30,000. However, only five percent of the federal grant could be used for buildings and maintenance. State contributions were supposed to provide additional money for buildings and maintenance. [11]

The Denton Chamber of Commerce had offered as site for the station a 100.25 acre farm west of town owned by J.N. Rayzor. The property was outside the city limits, about where Peterbilt Truck Company later located on Airport Road. Rayzor sold the land for $7,500, including the $5,000 in cash contributed by the citizens of Denton and the state assumed payment of $2,000 that Rayzor owed on the land. The site's improvements included a 70-acre field of growing wheat, so it was decided that the state would pay the shortage and be repaid when the wheat crop was sold. [12]

T.W. Buell was hired as superintendent at $60 a month to take charge of the place and make the necessary repairs "by his own labor and a hired laborer, and to gather the wheat crop at the proper time." Experimental plots of wheat, oats barley and rye were put in, some alfalfa was sown and plans made for corn to be planted in the spring. The dwelling house was repaired and repainted. The barns, which were in bad condition, were repaired and painted, a tenant house was built, the field fence replaced and repaired, and the farm put in a thorough state of cultivation.[13]

In his annual report of the 1911-1912 fiscal year, Mr. Bonney Youngblood, who was named director of Agricultural Experiment stations at College Station in 1911, described the scope of work for the past season in Denton: there were rotation studies; small grains, corn, cotton, sorghum and legume variety tests; and tests to determine the merits of different methods of soil preparation, cultivation and seeding rates. He also described experiments with grasses, alfalfa, clover and vetches.

Some problems with the site were soon apparent. The land was in a transition zone between the Fort Worth prairies and the sandy Cross Timbers zone, so the soils were extremely variable. Also, the land was infested with Johnson grass, which was nearly impossible to plow with horse- or mule-drawn equipment. [14]

In 1913, the state bought a new farm five miles northwest of Denton, known as the J.T. Luper farm. The new farm contained 203 acres. The state paid $16,240 for the farm, $8,340 in cash, assumed a

promissory note of $5,582.50, still owed on the land and promised to pay the $2,317.50 at eight percent interest.[15]Work began and soon the farm had new fences, one residence and two small tenant cottages for laborers. The farm was enlarged in 1942 by buying an adjoining 132 acres, giving the station 335 acres bounded on the south by Hampton Road and on the west by Masch Branch Road. Work began and soon the new farm had new fences, one residence and two small tenant cottages for laborers. Mr. Buell resigned in October 1914 and was followed by V.L. Cory.[16]

In 1915, the station reported establishing 2,735 plots of experimental grain, using 97 varieties. However, Mr. Cory submitted depressing reports. The station's farmers' association was dead, he reported, there was no cooperation from local people, no interest in the farm, labor was difficult to get and he had no telephone. [17]

The unhappy Mr. Cory resigned, and C.H. McDowell became superintendent in 1916. Conditions were improving. Mr. McDowell built a new superintendent's home, two tenant cottages, tore down the old barn and used lumber from it for a machine shop. And built a new barn. He bought a new Ford tractor for $1,100 and a new Keystone thresher that cost $2,735. [18]

Problems emerged that winter, however. Weather caused widespread damage. High winter temperatures followed by a low of 8 degrees Fahrenheit killed all of the farm's oats and barley and 80 percent of the wheat throughout central Texas. [19]

Tragedy again struck in the extremely dry summer of 1925 when dry grass caught on fire and the office building was destroyed. Sparks from a fire under a washpot outside one of the houses ignited the blaze. That was a time when many women did their laundry by boiling clothes in a big washpot over an open fire out of doors. Some of the men working at the farm put the fire out, but it rekindled and spread to the office. The men couldn't put the second fire out, but saved some records. Other records, tools and equipment were lost. Although the station still did not have a telephone, the Denton Fire Department was notified of the fire and sent help. Unfortunately, the fire truck ran out of gas on the way and the firemen were late getting to the blaze. [20]

Local state representatives filed a special bill with the Texas Legislature asking for $7,500 to build a new building and another $7,500 for office equipment, a laboratory and seed storage facility. The Legislature approved the bill and appropriated $7,500 to build the structure, promising the additional money would be appropriated the next year. That money never came, however. It would be 1929 before the station got a new office building. [21]

In 1929, the U.S. Congress passed legislation expanding grain crop research. This allowed the experiment stations to hire agronomists or plant pathologists. Dr. I.M. Atkins came to the Denton station as agronomist in 1930.

The decade of the '30s was to bring new hazards. The Great Depression was looming. Drought and serious plant disease and insect problems killed the crops. There was more widespread winter killing of grain. Finances became critical. Federal workers took a month's leave without pay. State funds were slashed. State employees could not cash their pay vouchers for weeks. The station had two full-time laborers or technicians and picked up additional day laborers as needed for $1 a day. They hired high school students for the summer harvest period. Station No. 6 supplemented funds with income from farm produce, selling surplus grain, livestock, cotton and even eggs. [22]

All experimental planting was done by hand – marking the rows, opening furrows with a hoe, scattering and covering the seed – everything. Station workers were in the field from 6:30 a.m. to 6:30 p.m. and longer during busy seasons. [23]

The experiment farm first used large plots for tests and also provided seed for farmers to conduct tests on their own land. Later, station researchers put nearly everything into nursery plots – 12-foot-square lots of four rows – and expanded the research on individual privately-owned farms.

The next decade brought relief and eventually a degree of prosperity to the farm. Station No. 6 had become a major player in the economic growth of Denton and Denton County. Local newspapers regularly ran articles about the farm and spotlighted the annual Field Days that were popular attractions at the farm.

The first field day at the farm was held in 1913, but they were not resumed until Superintendent McDowell renewed the programs after taking over supervision of the station in 1916. [24]

Paul Dunkle, who became superintendent in 1922, became known as the "Dean of Field Days." Field days had become popular annual events, and the number of visitors sometimes reached more than two thousand. When the Chamber of Commerce began furnishing free barbecue lunches during the Field Day, the numbers increased beyond the farm's capacity. Tour guides could not handle that many people, and the visitors tramped down many of the plants. Mr. Dunkle changed the once-a-year Field Days into a series of smaller specialized Field Days. These proved just as popular, but not as crowded, and groups sometimes came from as far as 200 miles away. The new kind of field days was so successful that other Texas stations copied his pattern. [25]

An article in the Denton Record-Chronicle on May 16, 1965, illustrates the Field Day activities. The morning program included talks by Dr. Atkins, who was by then director of small grain research at the Main Station at Texas A&M, and Dr. James H. Gardenhire on small grain research. Other specialists talked about the Certified Seed program, fertilizer, profitable cotton production, dealing with limited plant moisture, and pastures. Afternoon tours of the farm followed the morning talks. The Agribusiness Committee of the Denton Chamber of Commerce co-sponsored the field day. Mr. Dunkle died on May 24, 1947, of a sudden heart attack just after the main Field Day that year. The annual events continued, however, until the station closed in 1972.

While Mr. Dunkle was superintendent, the station developed a Texas red rust-proof oat seed at the station. To produce and distribute the seed, certified to be Texas red rust-proof seed, he established the Denton County Pedigreed Grain Association. The association originally was a group of 12 Denton County farmers who contracted to grow certified seed that the association would sell. The association bought two seed cleaners and hired a manager, H .F. Browder. In 1941, Tom Harpool, who had worked for Mr. Browder since 1935, acquired part ownership in the pedigreed grain operation. In 1945, Mr. Harpool acquired full ownership. The pedigreed grain operation continued to be an important part of Harpool Seed Company.[26]

Dan I. Dudley was the next superintendent, serving from 1947 to 1966. He was followed by Dr. Gardenhire, who had worked at the station since 1952. Dr. Gardenhire grew up in Rockwall, east of Dallas. He enrolled in North Texas State Teachers College, now the University of North Texas, in 1940 but left to go into the United States Coast Guard in 1942. After he was released from military service in 1945, he enrolled at Oklahoma Agricultural and Mechanical College, now Oklahoma State University, and obtained his bachelor of science and master's degrees. He completed his Ph.D. at North Texas after moving to Denton to work at Station No. 6.[27]

Dr. Gardenhire was first employed as a general researcher for fertilizer and crops and soon added oats and barley research to his job. He was assistant agronomist to Dr. Atkins and later the agronomist for Station No. 6. He became superintendent in 1966 and remained in that position until the station closed in 1972. He moved to the new Dallas center, where he resumed work on small grain research, and remained there until his retirement in 1984. [28]

Station No. 6 was closed as part of a movement to convert stations into regional research and extension centers and to adapt to the growing urbanization of North Texas. When the Texas State Research Foundation, a private foundation, went out of business in 1972, it turned over its research facilities and a portion of its land in Dallas County to the Texas Agricultural Experiment Station. The Dallas station became a center for urban agricultural research, including work related to turf, landscaping, and nursery industries, biological control of insects, and management of fertilizer and other chemicals for both farm and urban use. [29]

After Station No. 6 was closed, the land and buildings were sold to a Dallas corporation.

The "buildings have not been taken care of since," Atkins wrote in his undated manuscript, "and to us who lived there so long, they are a sad sight." [30]

Superintendents at Denton Station No. 6 were T.W. Buell, 1910-1915; V.L. Cory, 1915-1916; C.H. McDowell, 1916-1922; Paul B. Dunkle, 1922-1947; Dan I Dudley, 1947-1966; and James H. Gardenhire, 1966-1972.

III. Significance

Texas Agricultural Experiment Station No. 6 in Denton played a vital role in the community life of Denton County and the economic growth of the North Texas region for 62 years.

When the station was established, farming was the primary occupation of most of the Denton County populace. Farms were traditional and so were the techniques used on them. Farmers were growing small grains – oats, wheat, barley, rye and others – the same way farmers had for years.

Agriculture Experiment Stations were the first full-scale scientific approach in the U.S. to improve agriculture. Station No. 6 in Denton specialized in research on ways to improve the grains farmers already were growing, research to improve their resistance to the effects of weather and disease.

The station's success was evident in new varieties of oats developed that could withstand North Texas' sometimes severe winters – Nortex, New Nortex, Mustang and Alamo. The new varieties doubled yields and also helped overcome the old problem of rust damage. The station produced new wheat varieties such as Westar, Quanah and Frisco, and barleys Texan and Cordova.

Although the station's major concentration was on small grain research, its work covered all phases of the agricultural economy in the region – legumes, warm and cool-season grasses, fertilization, cropping systems, mechanical harvest of cotton, winter cover crops, insect and disease control, and variety testing. The station also was the official Weather Station for Denton County during much of its lifetime.

Farmers and farm families depended on the Agricultural Experiment Station for practical and expert advice on their farming operations. Assistance ranged from farming practices demonstrated at the station to programs that allowed farmers to test research on their own land.

The role of Station No. 6 in the region also led to establishment of agriculture-related industries that bought and sold seed, plants, fertilizer, mills, tool and implement sales and added more to the regional economy.

Agriculture was one of if not the biggest business in Denton County for the first half of the twentieth century and continued to be a major economic engine for the rest of the century and into the 21st. Types of farming operations may change. Horses and beef cattle are the largest income producing operations for 2010, but wheat continues to be a million dollar a year plus business. Wheat income is projected to reach about $6 million in 2010.

IV. Documentation

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[1] C.C. Bridges, *History of Denton, Texas, From Its Beginning to 1954*; (Waco; Texian Press, 1978), pp. 169-170.

[2] Bridges, p. 238.

[3] B.Youngblood, director, Texas Agricultural Experiment Station ; *Texas Agricultural Experiment Station Twenty-Fifth Annual Report, 1912;* (College Station, Brazos County, Texas; Von Boeckmann-Jones Co., Austin, Texas, printers), pp. 13-2.

[4] H.H. Harrington, director, Texas Agricultural Experiment Station; Bulletin No. 134, November, 1910; *Report of the Director on the Establishment of the New State Stations;* (College Station, Brazos County, Texas, Austin Printing Co.), Texas A&M Library p. 4.

[5] Harrington, p. 3.

[6] Harrington, p. 4.

[7] Irving Milburn Atkins, professor emeritus Texas A&M University, unpublished memoirs, owned by Dr. James H. Gardenhire; Old Number 6 and the Texas Small Grains Program - 1889-1969; private collection of Dr. Gardenhire. p. 8.

[8] *Timeline of Historical Events, College of Agriculture and Life Sciences, 1911-2001 Texas A&M University;* Compiled by Harry O. Kunkel, Dean Emeritus, in association with the College's 90th Anniversary Celebration, 2001/2002); p. 2.

[9] Atkins, p. 8

[10] Youngblood, p. 4.

[11] Youngblood, p. 4.

[12] Atkins, p. 8.

[13] Atkins ,p. 8.

[14] Atkins, p. 8.

[15] Denton County deed records, vol. 131, p 211.

[16] Atkins, pp. 8-9.

[17] Atkins, p. 9.

[18] Atkins, p. 9.

[19] Atkins, p. 13.

[20] Atkins, p. 15.

[21] Atkins, p. 15.

[22] Atkins, p. 20.

[23] Atkins, p. 18.

[24] Atkins, p. 40.

[25] Atkins, p. 20.

[26] Nita Thurman, *Tom Harpool: A Life Well-Lived;* (Old Alton Press, Denton, Texas 2008), pp. 27-30.

[27] Dr. James H. Gardenhire Interview with Nita Thurman, July 28, 2010, Rockwell, Texas. (note- due to Dr. Gardenhire's health, no historical notes were taken; however he shared the unpublished memoirs of Dr. Irving Milburn Atkins with the interviewer.)

[28] Atkins, p. 71.

[29] Handbook of Texas Online, s.v http://www/tahaonline.org/handbook/online/articles/AA/aja1.html accessed Aug. 1, 2010.

[30] Atkins, p. 71.