

# **Establishment of the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS)**

While the University of Florida traces its roots to 1853 and the establishment of the state-funded East Florida Seminary, University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) traces its roots to the Morrill Act of 1862 which established the Land Grant university system. On July 2, 1862, President Abraham Lincoln signed into law what is generally referred to as the Land Grant Act. The new piece of legislation introduced by U.S. Representative Justin Smith Morrill of Vermont granted to each state 30,000 acres of public land for each Senator and Representative under apportionment based on the 1860 census. Proceeds from the sale of these lands were to be invested in a perpetual endowment fund which would provide support for colleges of agriculture and mechanical arts in each of the states. The establishment of Florida Agricultural College at Lake City in 1884 under the Morrill Act marked the beginning of what became the College of Agriculture of the University of Florida in 1906.

Florida's governing body for higher education created the Institute of Food and Agricultural Sciences in April 1964, by reorganizing UF's College of Agriculture, School of Forestry, Agricultural programs Experiment Station, and the Cooperative Extension Service into a single unit. Today, UF/IFAS includes extension in each of the state's 67 counties, 12 research and education centers with a total of 19 locations throughout Florida, the College of Agricultural and Life Sciences, the School of Forest Resources and Conservation, the Center for Tropical Agriculture, portions of the College of Veterinary Medicine, the Florida Sea Grant Program and IFAS Global.

The UF/IFAS research mission is to invent, discover and develop knowledge to enhance the agriculture and natural resources of Florida. Faculty members pursue fundamental and applied research that furthers understanding of natural and human systems. Research is supported by state and federally appropriated funds and supplemented by grants and contracts.

## **UF/IFAS Research Station History**

The Florida Agricultural Experiment Station administers and supports research programs in UF/IFAS. The research program was created in 1887 by federal legislation known as the Hatch Act, a follow-up to the 1862 Morrill Act that established US land-grant universities. The research programs support approximately 350 full-time equivalent faculty members in 17 academic departments on UF's Gainesville campus and at 13 research and education centers around the state.

## **NORTH FLORIDA RESEARCH AND EDUCATION CENTER-QUINCY**

### **Directors of the NFREC**

- L.O. Gratz – Director - 1930 – 1939
- Jacob Dewey Warner – Director – 1939 – 1951
- WC Rhoads - Acting Director – 1951 - 1958
- Willis H. Chapman - Director – 1960 to 1978
- Fred Rhodes - Acting Director - 1978 to 1979
- Iwan D. Teare – Director - 1979 to 1981
- Fred Rhodes – Acting Director - 1981 to 1982
- Don Herzog – Director - 1982 - 1994
- Fred Shoaks – Acting Director - 1994 - 1995
- Jim Marois – Director - 1995 to 1999
- Pete Vergot – Interim Director - 1999

- George Hochmuth – 1999 - 2006
- Richard Sprenkel – Interim Director – 2006-2008
- Nicholas Comerford – Director – 2008-2017
- David Wright - Interim Director - 2017 - 2018
- Glen Aiken - Director - Current

## **NFREC in Quincy/Gadsden County Overview**

Gadsden County was created in 1823, a year after the territorial government of Florida was formed, and was the fifth county to be designated. It consisted of all the area between the Suwannee and Apalachicola Rivers.[1]

Established in 1828, Quincy which was named for John Quincy Adams, [2] is the county seat of Gadsden County and it is located 20 miles west of Tallahassee. It is a rural community which is heavily dependent upon agriculture for its employment base.[3]

### **Historical overview of Gadsden County Tobacco Industry**

Tobacco history in Gadsden County, credited to pioneers from Virginia, began in the early 1820's immediately after Florida was ceded to the United States. The culture of tobacco under shade in Gadsden County began 1889.

Tobacco in Gadsden County was susceptible to a number of diseases, including mosaic, root-knot, wildfire, granville wilt, leaf spot, frog-eye, root rot and black shank. Black shank, a disease that according to growers, appeared in 1915 posed a huge threat to the tobacco industry in Gadsden County.

Recognizing the vital need of immediate help-scientific and experimentation if the county's greatest industry was to be saved, the shade growers sought the aid of the state and asked that a tobacco experimental station be established at Quincy.[4] A committee composed of C.R. Shaw, E.B. Shelfer, Sr., D.A. Shaw, A.L. Wilson, Mrs. F.R.S. Phillips, Capt. W.L. Taylor, S.W. Anderson, E.D. Edwards, L.B. Ellinor and Lee Munroe solicited the funds to purchase the land needed.[5] Senator S.W. Anderson, and representative E. Paul Gregory and M.R. Hinson looked after the legislative details and secured the appropriation. [6]

### **Establishment of the Research Station**

The Legislative Act in May 1921 (July 1, 1921)[7] appropriated \$30,000 for equipment and maintenance for the facility. The station started with a 23-acre tract, located a half mile south of the county courthouse on the "High Bridge" road, at the Southwest corner of Adams and Experiment Station Road, currently named MLK Drive, and deeded it to the state on December 15, 1921.

Dr. W.B. Tisdale was appointed Assistant Plant Pathologist February 15, 1922, and assigned to the study of tobacco diseases, including black shank, in the vicinity of Quincy. In March 1922, a contract was awarded for construction of a two-story brick laboratory and office building.

In 1923 a tobacco shade was constructed on the south side of the station grounds, which covered about two and a half acres, a tobacco barn was also built. In 1924 the principal improvements of the year consisted of a greenhouse unit. In April 1924, the station was moved to a site one mile north of the post office. In October 1925, the station was moved to the University of Florida Tobacco Experiment Station. The first agronomic work was started in 1925.[8]

In 1929, an appropriation by the Legislature provided for expansion of tobacco research and initiation of general field crops and livestock investigations. During the year, 617 acres located 3½ miles south of Quincy

on the Lake Talquin Road, and 20 acres adjoining the tobacco station property were acquired to expand the tobacco research and to initiate general field crops and live stock investigations.

On September 18, 1952 was the dedication of a new building. The office and laboratory building of the North Florida Experiment Station was dedicated and named in honor of Dr. Jacob Dewey Warner, ten months after his death. A soil testing laboratory for research work and service testing was authorized in 1955.

The Center purchased a farm adjoining the present location, called the Shelfer farm, circa 1970 or 1971 and moved all the faculty members from the tobacco location to that location. Tobacco faculty was also moved into buildings on the new property.

In 1971, the name was changed to the Agricultural Research and Education Center- Quincy, to signify the integration of research, extension and instruction functions at the Center.

The old Tobacco Experiment Station building was torn down and replaced by the Gadsden County School Board building in 1973.

The name of the Center was again changed in 1984 to the North Florida Research and Education Center to emphasize the regional importance of research and extension activities conducted at the Center. In 1997 money was appropriated for a new building. In 1999 Quincy received a new facility that cost \$5,700,000 and is located off of Pat Thomas Parkway and Research Road

## **The Research**

In 1922/1923 R.W. Ruprecht conducted early fertilizer experiments to determine the effects upon cigar-leaf tobacco of different amounts of potash and phosphate from various sources when used in combination with different amounts of manure. In addition to fertilizer experiments, the chief work of the Station was to investigate tobacco diseases. "Black shank was the most serious disease of tobacco in Gadsden County in 1922." [9]

Dr. Tisdale produced several resistant strains of good quality leaf but it was not until 1929 that the Rg variety was isolated from seed saved from a single surviving plant in a commercial field. He was so successful he was known as the "savior of Gadsden's shade industry." [10] Although Rg was not released commercially until 1935, when it was made available it soon became the dominate shade tobacco grown. As a result of the breeding program which was initiated shortly after the station was established, Florida 301, a new black shank resistant variety was released in 1931. Florida 301 was directly responsible for saving the industry.

In 1929 Dr. Tisdale was transferred to Gainesville and Dr. L.O. Gratz, was transferred to Quincy in April 1930 and placed in charge. [11]

Dr. Jacob Dewey Warner, a native of South Carolina and a graduate of Clemson College and the University of Kentucky, became the assistant agronomist at Florida's main experiment station in Gainesville in 1929 and was promoted to associate agronomist in 1932.

In 1933, in general, the work at the North Florida Experiment Station progressed satisfactorily throughout the year. This was due in part to the rather large number of laborers placed at our disposal by the Gadsden County Unemployment Relief Council. From 20 to 60 of these men were working on the station...had it not been for this extra labor most of the work mentioned below under Expansion Program could not have been attempted this year. [12]

In 1933 the 2-acre tobacco cloth shade which has been in use for 10 consecutive years was rebuilt. A home orchard of about an acre consisting of pears, peaches, plums, figs, and persimmons, was established near the home site. The general farming program consisted chiefly of growing sufficient feed for the livestock on hand. Some preliminary work was under way to gain information about the method of land preparation for seeding and the proper time of seeding carpet grass. An attempt was made to establish carpet, Bermuda, Bahia and centipede grasses in five duplicate 3-acre areas. The work in the field of animal husbandry at the North Florida Station had been preliminary, and was conducted in cooperation with the Department of Animal Husbandry.

A cattle herd was established in 1933. Early in November a small herd of cattle consisting of 16 cows two years old or older and nine heifers under two years old were purchased near Quincy, moved off the range, and established on the Station farm.

In 1936, the work of the station was broadened to cover all farm crops raised in northern Florida and the name was changed to the North Florida Experiment Station.[13] Prior to the cattle program starting in 1946 a registered Angus herd was added to the Station in 1937. The first small grain varieties were released in 1940. They were oat varieties used for forage production. Quincy Red and Quincy Grey. [14]

In 1945, 350 acres of land adjoining the experiment station was purchased making possible expansion of the livestock and field crops research programs. The tobacco industry in Quincy, meanwhile was doing well. By 1946, 150 million cigars a year were manufactured in a string of solid old brick buildings around Quincy.[15]

Also in 1946, a cattle program was established at the Station. In 1947 there were about 10,000 beef cattle and 20,000 hogs in Gadsden County, and livestock sales amounted to \$1,652,000. Dr. Fred Rhodes, a retired NFREC-Quincy faculty member, described the inception of the cattle program that began with Sloan Baker, as a solution to a problem. The tobacco program used cow manure on the tobacco, so they needed someone to manage the cattle. Dr. David Pritchard took over the program upon Baker's retirement. The North Florida Experiment Station was among the four Gadsden Angus breeders, which also included Dr. H.V. Porter, S.M. Strum, and Charles Bassett. The cattle program was eventually moved to Chipley and then to its current home at the Beef Unit at the NFREC-Marianna (See NFREC in Marianna).

Work at the station did not just focus on tobacco and animal husbandry. Plant breeding of annual ryegrass began in the 1950s when T.E. Webb used mass selection to develop the annual ryegrass variety Florida Rust Resistant from local ecotypes, domestic varieties and plant introductions. Florida Rust Resistant was released by W.H. Chapman in 1962.[16]

In 1951, a registered herd of Hereford cattle was acquired through the efforts of the Southeastern Livestock Improvement Foundation and added to the cattle program.

In 1954 Buford Smith began working at the Experiment Station as an agricultural technician for Tom Webb, an agronomist, who worked with lupins and soy beans.

In an effort to provide more diversified agriculture in North Florida, a horticultural program was started in 1957. Early work consisted of evaluating several vegetable crops and small deciduous fruits for adaptation to the area.

“When I was working with Tom Webb in 1957 or 1958 we started growing tomatoes and working with them,” said Buford Smith, who worked with Webb studying diseases, insects and yield of tomatoes. “Not too long after that they started up the tomato crop and that got to be the big thing then.”

Even with all the additional research areas added, shade tobacco was still a primary focus of the station. 1960 was the peak of Florida Shade Tobacco production with 7,350,000 pounds.[17]

In 1963 research was conducted on 31 projected phases of investigations pertaining to shade tobacco, animal husbandry, horticulture, field crops, and pasture. Two new projects were written on (1) selection of replacement females in beef cattle and (2) the effect of shade on the microweather and production of horticultural crops.

Some of the projects included, Flue-cured tobacco improvement, corn breeding, vegetable variety trials, small grain improvement by breeding and selection, testing soybean breeding lines and varieties, wintering stocker cattle and calves.

Plant selection within the Dixie Shade variety resulted in a late flowering selection which produced more commercially usable and total leaves, higher yield, and better quality tobacco than the unselected variety or a grower selection. Foundation seed of this selection is being produced by Florida Foundation Seed Producers Association and will replace the Experiment Station strain of Dixie Shade now being used.

In 1966, Forty-three hundred acres of shade grown and fire-cured tobacco were grown in Florida; most of which was grown in Gadsden County. Neither the acres nor the yield per acre of shade tobacco had changed much in the last 15 years. Acres in shade-grown tobacco were 4,100 in 1951.[18]

Also in 1966, Fred Rhodes began working at the Experiment Station as a soil chemist, studying fertility and irrigation, in shade tobacco. The focus of the tobacco research was tobacco breeding, tobacco diseases, and insect control.

“One thing I did that was pretty well appreciated by the growers was that they were having a problem with the tobacco leaves turning purple and I was able to verify that this was due to iron build up in irrigation ponds,” said Rhodes. “We made available a water testing program and we came up with suggestions on how to reduce iron by using limestone and agitating it to raise the PH of the water. Some of the growers realized it saved them quite a bit of money by finding out what the problem was.”

Although useful, the research provided by the station was not enough to sustain the Gadsden County shade tobacco industry. In the 1970s the Quincy tobacco industry was no longer economically viable. “Quincy Shade tobacco industry went under when Central American farmers discovered they could make a killing in the shade tobacco business. Since then, those farmers have undercut Quincy’s tobacco prices and sent the local economy into a tailspin that has left 1,800 people out of jobs. Quincy residents pioneered the shadehouse growing method and the tobacco was the county’s number one export – until recently.”[19]

Economics played a big part in the downfall of the industry. “The cost of growing it and the labor got so expensive that they couldn’t quite do it. That was about 1972,” said Buford Smith about the tobacco industry in Quincy.

After the shade tobacco production in Gadsden County stopped, Fred Rhodes switched his work on fertility and irrigation to corn, cotton, soybeans, tomato, and canola. The other researchers that previously worked on tobacco also switched their research foci to other areas.

In 1970, research associated with field and forage crops, beef cattle, production of cigar-wrapper tobacco, and horticultural crops was conducted under 30 projects. Some of the more noteworthy accomplishments include: The release of the Florunner peanut variety which yielded more than 15% above Early Runner and was outstanding in commercial production.

Ronald Barnett joined the faculty in April 1970 as assistant agronomist to conduct research on small grain improvement with emphasis on wheat breeding. Prior to 1970 the small grains breeding program at the Station was mainly an oat breeding program, but switched to soy bean wheat rotation in 1970. Triticale (a novelty, specialty crop, a cross between wheat and rye) breeding was started in 1970 with Dr. Barnett.

Gerald L. Greene, assistant entomologist, transferred from the Central Florida experiment station in July and conducted research on identification, biology and control of insects affecting field crops.

In 1975 research associated with field and forage crops and beef cattle was conducted under 15 projects. There was an increase in the area of crop protection with emphasis on pest management and prevention of leaching fertilizers. Shade tobacco acreage decreased from a peak of approximately 6,500 acres to slightly less than 400 for the 1976 season. This decrease resulted in a realignment of research efforts to include entomological work on peanuts, an increased pathological program with field crops, and production studies on soybeans. The breeding program for improved disease resistance of shade tobacco was being conducted at a reduced level.

As entomology research continued to grow at the Agricultural Research and Education Center Quincy, it was designated as the Integrated Pest Management Center for North Florida in 1979.

In 1982, the first variety of Triticale was released with the University of Georgia, not under formal agreement. It was not used for the milling industry, but rather for the hog farmers in the area to use as feed.

It took ten years for Dr. Barnett and the small grains breeding program to release “Florida 301,” which was a wheat variety. “Florida 301” was early maturing, had better disease resistance, and it was well adapted to the region. The acreage got up to 150,000 acres in Florida. That variety was grown on about a million acres of land each year for 7 or 8 years.

In 1984 the small grains breeding program released “Florida 302,” which was not related to Florida 301. It was a barn burner, bin buster, high yielding. “Florida 301” was a 10 percent improvement over everything that was available.

By 1988, four years after its release, “Florida 301” was grown on at least 3 million acres a year, from east Texas to southeastern Pennsylvania. “Florida 301” gave the Center an international reputation in small grain breeding.[20]

In 1993 or 1994, the small grains breeding program at the Center formed a regional breeding program, with the University of Georgia. “Morey” was the first variety released under the partnership.

In 1996, “Chapman,” a new winter oat variety (*Avena Sativa* L.), which was cooperatively developed by the NFREC-Quincy and University of Georgia was released. It was named in honor of Mr. W.H. Chapman, a former Center Director of the NFREC-Quincy and distinguished oat breeder. Foundation Chapman oat seed was grown by Florida Foundation Seed.

## **NORTH FLORIDA RESEARCH AND EDUCATION CENTER-SUWANNEE VALLEY**

### **Live Oak/Suwannee County Overview**

The land known as Suwannee County had been a part of four counties over the years – St. Johns, Duval, Alachua and Columbia. By 1858, residents of the area were petitioning the legislature to become a county and on Dec. 21, 1858, an act was signed.

“Suwannee County is one of the major agricultural counties in the State; it ranks second in number of farms and farmers. The principal crops are bright tobacco, watermelons, corn, peanuts, and small grains. Tobacco is the main cash crop. Livestock-raising is also a major enterprise in the county.”[21]

### **Establishment of the Suwannee Valley Research Station**

Legislation enabling creation of the Suwannee Valley Experiment Station was passed during the 1947 Florida legislative session. The bill naming and designating the location of the station was written and introduced by Suwannee County Representative Harold Gilmore; Senator G. Warren Sanchez piloted the bill through the upper house. The bill, however, did not appropriate money for personnel or operation. In 1949 Suwannee County representative, Randall Slaughter, secured \$25,000 for personnel and equipment. When funds became available, work was begun with the transfer of George E. Ritchey from the University of Florida's Main Station to Live Oak on November 1, 1950 and the hiring of a secretary, Ms. Bernice Allen.

The early experimental work of Mr. Ritchey was conducted on the land of several local farmers. T. T. Scott donated the use of a 6-acre tract on the edge of town for plot work. P.C. Crapps, who later purchased Mr. Scott's land, continued this arrangement. Other farmers soon were cooperating – mostly in various types of pasture studies – including Ottis Brown and Mr. R. E. Cannon (Pensacola bahia pasture), Clyde and Curtis Griffin (farm land and pecan grove), Claude Johns (lake bottom pasture), B. F. Leigh (clover pastures), and Duke McAllister and J. B. Mills (corn fertilizer studies). Mr. Mills was the first farm foreman at the Center.

Under the sponsorship of Senator J. Graham Black, who served the area beginning with the 1951 legislative session, an effort was made to purchase a permanent site for the Suwannee Valley Experiment Station's work. L. J. Day, local banker, and Fred Green, Live Oak businessman, served with Floyd Eubanks, county agricultural agent, on a committee to find a suitable site. J. R. Henderson, agronomist and soils specialist from the Main Station worked with this committee in typing soils of proposed sites.

“The Suwannee Valley Experiment Station was established and this fine facility has continually developed new varieties for this area.” [22]

A 300-acre tract, which included a 30-acre lake useful for irrigation, was purchased from Huelin Lee in 1953 for \$19,500. This farm contained a wide variation in soil types permitting work with all crops germane to this area. An office building and a machine shed were constructed on the station farm, and since the 1954 crop season, much of the experimental work has been conducted on station owned lands.

## **The Research**

In 1959 the total production of flue-cured tobacco allotments was 4,960,345 pounds and the allotted acreage was 3,684.71, the highest of any other county. [23] In 1959 crop yields were the highest in Station history. Research was broadened. Coastal Bermuda grass hay fertilized at varying rates of nitrogen is being fed to lactating cows at the Main Station; grape rootstocks were planted preparatory to testing promising new breeding lines; and minor element studies with clover varieties were begun. A new tobacco barn, partitioned for curing studies, and a new block building for fertilizer storage were completed.

Animal research was not conducted at the Suwannee Valley Experiment Station until 1966. No animal research was conducted at the Suwannee Valley Experiment Station until 1966. At the request of the Suwannee County Rural Areas Development Council, the Florida Agricultural Experiment Station sought funds from the 1965 legislature to begin swine research. Senator Houston Roberts and Representative Leon McDonald worked to secure approval of these funds, and 20 additional, adjacent acres were purchased from H. E. Wiggins, Sr. in 1965. Dr. G Hollis was employed as the Swine Researcher in 1966.

In 1970 G.R. Hollis resigned as assistant professor from the Suwannee Valley station. Dr. R.H. Houser replaced Dr. Gilbert Hollis as animal nutritionist in charge of swine research. New facilities for this program include additional sow feeding and added pens and shelter for boars. Agronomic research facilities added include a bulk tobacco curing barn and increasing the length of our pivot irrigation system by 90 feet, adding approximately 9 acres of irrigated land. A new soybean variety has been released in cooperation with other Florida units.

In 1971, the name of the Center was changed to the Agricultural Research Center, Live Oak, and, subsequently, in 1984, to the Agricultural Research and Education Center, Live Oak.

1975 was an active and productive year. Research was conducted under four projects in swine nutrition and management and six projects in agronomic crop production. Construction was completed on a new nursery facility for baby pigs.

An onsite nematology program was initiated in 1976 with the hiring of Dr. J. R. Rich. The position was created by IFAS due to the long-standing need for expertise in solving nematode problems on field crops in the area. Nematode-induced losses to tobacco and field corn have been a major concern of the nematological research program.

Dr. Ed White was hired at the Center in 1978 and work in swine continued until the early 1990s, when the decline of the swine industry reached a point where continuation of the swine research and demonstration work was not justified. Dr. White and his swine research program were transferred to Gainesville in 1992.

During the late 70s and early 80s, profitability of agronomic row crops, such as corn and soybean was declining. Efforts at the Center began to shift into a search for alternative crops for agronomic farmers, and this effort was funded with federal and state funds. This was the Farming Systems Research/Extension program begun in 1981. Much of the new work begun in the mid 80s was with horticultural enterprises, such as vegetables and fruit crops.

In 1979, an EPA-funded research project evaluating the long-term effects of feeding municipal sewage sludge on growth and reproductive performance of swine, was completed. Research implicated reduced reproductive performance in sows and reduced growth in their progeny to lower nutritive content of diets containing sludge. Other long-term research has evaluated eleven of the fourteen FDA approved feed-grade antibiotics/antimicrobial compounds for their respective efficacies in controlling atrophy or hypoplasia of the nasal turbinates in swine infected with *Bordetella bronchiseptica*. Data from these studies indicated that feed-grade antibiotics are effective in maintaining normal growth performance of swine in the presence of atrophic rhinitis. An application of low energy technology (LET) successfully demonstrated that semen quality in boars could be maintained during seasons of high ambient temperature by simply providing adequate shade and periodically sprinkling the body surface to enhance evaporative cooling.

In 1980 the Florida Swine Evaluation program was moved to the Center. The Program was discontinued in 1992 and all swine research and evaluation facilities were demolished in 1998.

Among the research needs and priorities in the 1980s, was technology for energy efficiency, water conservation, reduced pesticide usage, and the maximization of production and profits in agriculture through overall increased efficiency. The Plant Science programs conducted research in varietal improvement including drought and disease tolerance, minimum tillage and multi-cropping systems in deep sands, and proper irrigation, nutrient and pest management in these cropping systems. Through this and other research, the Center programs put an emphasis on the production of feed grains and protein sources critical to the survival and growth of the animal industries in North Florida.

A major facility and personnel expansion of the Research Center occurred with the move of the Florida Swine Evaluation Unit (formerly west of Live Oak) to the Center in August of 1980. A laboratory-office building was placed near the original office building. The building provided, for the first time, a laboratory space for housing of major analytical instrumentation at the Center. In addition, a large, modern swine testing facility was placed in an area near the Swine Research facilities. The IFAS Swine Evaluation Unit move added three more onsite career service employees and provided an extension function to activities of the Research Center.



The Swine Evaluation Program was discontinued in 1992 and all swine research and evaluation facilities demolished in 1998. In 2XXX, it was recommended by the NFREC Center Director and approved by campus administration that the Suwannee location be removed from the NFREC and made into an Extension Demonstration facility.

## **NORTH FLORIDA RESEARCH AND EDUCATION CENTER IN MARIANNA**

### **Marianna/Jackson County Overview**

Jackson County was founded on land, cotton, and slaves, and became one of the most populous and wealthy sections of Florida, at the time of the Civil War. During the 78 years between 1822 – when the county was created – and 1900, there was little change in agricultural practices, which were still geared to the mule, hoe, and manual labor, modern farm implements and power machinery being some years in the future at the turn of the century. There was a marked expansion in cotton acreage from 1900 to 1915. During this period, Jackson County was the largest cotton-producing county in Florida, and the multi-million-dollar crop brought great wealth to many large growers and land owners. In 1917 however, there was a great reduction in the crop and the county suffered tremendous losses in land values and farm income.[24]

The early and timely development of the peanut industry is an interesting bit of Jackson County history, especially as peanuts have proven a far more valuable crop than cotton, measured in dollars and cents, and the fact Jackson has become one of the largest producing areas in the United States, and is home of the world's largest processing plant.[25]

The trend to scientific agriculture had begun with the county agent system just before WWI. It had accelerated with the arrival of Charles O. Reiff in the late 1920s and W.W. Henley in the 1930s. A great milestone was reached when an experiment station was opened in 1948.[26]

### **Establishment of the Marianna Research Station**

Although NFREC in Marianna is identified as just that, NFREC in Marianna, it was actually located in Greenwood, Fl until Marianna annexed the location into the city boundaries in 2013. Greenwood is one of the oldest settlements in Jackson County.

NFREC in Marianna was originally one of the Mobile Units established in 1941. Cooperative experiments were begun in 1944 by Associate Agronomist Ralph W. Lipscomb working with farmers in Jackson, Calhoun, Washington and Holmes counties.

In 1948 the work was permanently located on a 345-acre tract of land, which was previously part of the Marianna Air Base (Marianna Army Air Field/Graham Air Base, named for William J. Graham) and was acquired from the War Assets Administration for peanut research.

### **The Research**

With the resources of the Institute of Food and Agricultural Sciences of the University of Florida available to it, the station has assisted farmers in developing better seeds – such as the Dixie-18, Florida 200, and Florida 201 corn hybrids, fertilizer mixtures suited to Jackson County soils and crops, and insecticides to control infestations. Jack Oswald's {Director of FL. Foundation Seed} Florida Foundation Seed, located adjacent to the experiment station, was also engaged in seed research.[27]

In 1957 the non-profit, Florida Foundation Seed Producers, Inc. was established. Before this date the Florida Crop Improvement Association was in operation. An amendment to the Articles of Incorporation was passed

and the name was changed to Florida Foundation Seed Producers, Inc. Two years later the legislature appropriated \$20,000 to be used over a two-year period for the purpose of hiring a manager and purchasing equipment necessary to operate.[28]

In 1960 a grant-in-aid of \$10,000 from the Florida and Georgia Cigar Leaf Tobacco Association made possible the addition of an Assistant Agronomist to enlarge the research program on the improvement of cigar-wrapper tobacco through breeding and selection. Improvement to facilities during the year included construction of a 20-foot by 90-foot plastic greenhouse for tobacco research.

In 1964 Jackson County had 41,340 head of pig, the highest of any county. Swine tended to be concentrated in counties where corn and peanuts were important.[29]

In 1966 Jackson County harvested 24,800 acres of peanuts picked and threshed, which was slightly more than half of the Florida total of 49,000.[30]

Dr. Ronald Barnett was appointed April 1, 1970 as Assistant Agronomist. In 1970 Ralph W. Lipscomb, Associate Agronomist retired Sept. 30. Dr. P.E. Vipperman, Jr. joined the faculty at Marianna in December as assistant animal scientist to supervise the establishment of the swine research unit and to conduct the swine research program.

(People doing research in 1970 include, W.H. Chapman, J.B. Aitken, R.L. Stanley Jr., F.S. Baker Jr., C.E. Dean, R.R. Kinkaid, W.B. Tappan, G.L. Greene, F.M. Rhodes)

In 1971, a 40 sow swine unit was added, which emphasized research in swine nutrition and management. Though authorized in the mid 1960's, funds for the building project were not released until 1971. During May 1971 an architect was appointed to the project and plans were prepared. Bids based on the architect's plan indicated cost would considerably exceed allocated funds. So, a forced account building procedure was requested and authorized. With the help of the Agricultural Engineering Department a plausible alternative plan was prepared and construction began.

A wooded site on the 350 acre Marianna Agricultural Research Center was chosen for the swine unit. In 1971, the water system, fences and feeding stalls were completed. A mobile home was moved to the site as the residence for an agricultural technician. During early 1972 specific pathogen free (SPF) Duroc, Hampshire, and Yorkshire x Hampshire weanling pigs were brought to the farm to start the breeding herd. The research program started with Dr. Vernon LeBrant.

The program, which ended in 2000, was taken over in 1981 by Bob Myer. The swine unit took up about 10 acres, and at any one time had about 40 brood sows and 3 boars, which would produce an average of approximately 600 pigs per year. For years the research at the swine unit focused on alternative feeds, feeds that could be produced locally or were available locally, in order to help reduce the feed costs of local swine production. The research also helped other livestock industries as well.

“Over the years, we have done work with many different feed ingredients etc. and I've always felt that we helped other industries besides the swine industry, because you can look at the pig as a model for many different things, and we would show that this certain material had excellent feed value and we used a pig, but this material ended up being fed to other livestock once we showed that it was ok. So in addition to trying to help the swine industry, I would like to think that we were very good in helping other industries.”

Research was also conducted on confinement and outside production.

“One of the programs we did was a long term study, where we raised pigs outside and we compared them to pigs raised inside, and their different environmental conditions, we actually did an 8 year study of that,” said

Bob Myer. “We were looking at some low tech, low cost options for raising pigs in the southeast. Everyone had went to confinement, but we said, why not go back and reinvent the wheel, here, and look at using the newer tools that we have available now for raising pigs, but going back and using the simple outside dirt lots that we used way back when.”

The first major building to be built was the feed mill which was completed in January 1974. Prior to completion of the mill, feeds were prepared by a local commercial mill. Construction on the farrowing-nursery unit began during early 1974 and on the finishing unit in mid 1974. Simultaneous construction was carried out on both units until February 1975 when the farrowing-nursery unit was completed. The finishing unit was completed during April 1975.

The research facilities are arranged so applied nutrition and management studies can be conducted during gestation, lactation, baby pig and growing-finishing pig phases of swine production.

The nursery and farrowing units are located in the main building and are separated by a service area. The farrowing unit has room for fourteen crates and is equipped with zone cooling for the sow and heat lamps for baby pigs.

The research done at the swine research program resulted in 22 referred scientific publications, 33 referred proceedings publications, 10 trade journal articles, 91 research reports, and 65 referred scientific abstracts. Research results were also presented at nearly 100 scientific meetings including meetings in Brazil, Portugal, Canada, Poland, Denmark, and China.

In 1998, however, there was a crash of hog prices and the industry in Florida was never able to recover.

Waste is removed by a flush gutter under slats which lie across the rear of the crates. The nursery unit has twenty-two 4ft. x 14.5 ft pens, half with expanded metal floors and half with floors of solid concrete. A forced air heating system provides supplemental heat to enclosures across the end of each pen. Waste disposal in the nursery is accomplished by a flush gutter under the expanded metal floor or across the end of the pen for those with solid floors.

A weighing-sorting facility is also situated near the center of the unit. Experimental diets are prepared in the feed mixing facility, which is equipped with a hammer mill, weigh hopper and 50, 400, and 2000 pound capacity mixers.

Research currently under way is concerned with how local feedstuffs can be better utilized in swine diets. Other areas of study include the effect of feed additives on performance by swine of SPF origin and the effect of age at weaning on subsequent performance.

In 1973, FFSP erected at the Agriculture Research Center near Marianna, a \$50,000 warehouse, processing and office space, and installed equipment valued at over \$40,000 for processing seed. After a variety developed by the University is released, foundation seed is maintained by FFSP under the supervision of the breeder and under the State Seed Certification program. The foundation material is sold to seed producers for increase as registered seed to be made available to Florida farmers and growers. Under the Memorandum of Understanding with the University of Florida Agricultural Experiment Stations, all excess profits made from seed sales by the organization revert to the University for the benefit of research. Officers of the corporation are President, Ben Hall of Marianna; Vice-President, Marcus Pender of Greenwood; and secretary-Treasurer, Manager, A.J. Oswarld, Gainesville.

In 1981 thirty percent of Jackson County’s total farm income comes from peanuts.[31] Also in 1981 half the peanuts harvested in Florida are grown in Jackson County.[32]

Where Jackson county farmers were producing as little as 8 bushels of corn to the acre in 1949, they now enjoy yields up to 150 bushels per acre where irrigation is used. Peanuts yielded less than 700 pounds per acres in 1956, but that has increased to more than 2 tons per acre in some cases.[33]

According to the Tampa Times-Tribune in 1992, “Most of the peanuts grown in Florida are the Florunner variety, a prodigious plant developed by the University of Florida and released in 1969. It has succeeded to the point that growing smaller Spanish peanuts has become a rarity in Florida.”[34]

In 1995 the SunOleic 95R, a new peanut variety with a healthier kind of oil and a much longer shelf life was bred by Dr. Dan Gorbet. In 1998, Gorbet received an Honor Award from the U.S. Department of Agriculture, the USDA’s highest recognition for outstanding contributions to agriculture and the consumer. Gorbet was awarded for outstanding research and development of successful commercial peanut varieties, including the world’s first cultivation with high-oleic chemistry.

“Florida’s Agricultural Experimental Stations continue to develop stronger and more stress-resistant seed varieties and export demand for Florida peanuts continues to increase.”[35]

In 1999 NFREC-Marianna broke ground on a new facility \$3,900,000 and included an additional 930 acres of property. This area is referred to as the Beef Unit. When the University of Florida research farms in Chipley and Monticello were closed. The cattle at those locations became the nucleus at the NFREC in Marianna. Today the cow herd consists of 300 cows of Angus, Brangus, and Braford origin. The nucleus of the Braford cows are a result of an initial generous donation by Payne Midgette of Running M Ranch in 2011 when he donated 29 cows and a bull.

The first faculty member housed in Marianna that focused on beef cattle systems was Dr. William Herring from 2000 to 2002. He was a genetist with an interest in the heritability of feed efficiency. Dr. Herring was the faculty member responsible for initiating many of the ideas around a facility to obtain feed efficiency in beef cattle. After the departure of Dr. Herring, Drs. Jeff Carter and Gary Hansen were housed in Marianna from 2004 to 2007. Dr. Carter focused cow/calf management, whereas Dr. Hansen was responsible for continuing the development of the Feed Efficiency Facility and focusing on the genetics for feed efficiency.

The Feed Efficiency Facility was erected in 2006 and completed in 2007. The current capacity of the facility is 480 head or 20 head per pen for the 24 pens. Individual feed intake is assessed using the Growsafe feed intake system. Since 2008 the facility has remained full except during periods when maintenance of the pens or intake system were required. In 2014, the Growsafe system underwent an upgrade to enhance the calibration of the feed bunks.

Dr. Cliff Lamb arrived in January 2008 to oversee the continued development of the Beef Unit. His primary area of research has been in the area of reproductive management of beef cattle, but also has an interest in the relationship between reproduction and nutrition. Through his leadership the Beef Unit has expanded with additional pastures and fencing. Currently the Beef Unit contains 44 miles of high tensile, electric fence. A highlight of some of the work completed at the NFREC Beef Unit is the development and application of a fixed-time AI protocol that is used nationally and internationally as the primary method for synchronization for artificial insemination of beef cattle.

The arrival of Dr. Nicolas DiLorenzo in 2011 allowed for enhanced research in cow/calf nutrition. Therefore, the focus of research and outputs based on nutrition experiments has been increased significantly with data published on the incorporation of by-product feeds, and grazing management. In addition, the NFREC has now become a key internationally recognized entity in the area of methane production as a result of Dr. DiLorenzo’s work in this area.

Research at the Beef Unit is highly collaborative with current ongoing collaborations within the Animal Science discipline, such as genetics, nutrition, pathogens, immunology, and reproduction. In addition, interdisciplinary collaborations are a hallmark of the current research focus. Faculty in Agronomy (Drs. Ann Blount, Jose Dubeux, Joao Vendramini, David Wright), Soil Science (Dr. Cheryl Mackwiak), plant pathology (Dr. Jim Marois) and others are all involved in this work.

**For more information on the current NFREC facilities and research conducted, please visit <http://nfrec.ifas.ufl.edu>.**

[1] Miles R. Womack – Gadsden

[2] <http://www.epodunk.com>

[3] <http://home.earthlink.net/~dhsankofa/gadsconn.html> {Entire paragraph, except where noted by other footnote}

[4] History of Gadsden County, J. Randall Stanley. 1948.

[5] History of Gadsden County, J. Randall Stanley. 1948.

[6] History of Gadsden County, J. Randall Stanley. 1948.

[7] History of Gadsden County, J. Randall Stanley. 1948.

[8] History of Gadsden County, J. Randall Stanley. 1948.

[9] 1923 Florida Experiment Station annual report

[10] History of Gadsden County, J. Randall Stanley. 1948.

[11] History of Gadsden County, J. Randall Stanley. 1948.

[12] 1933 annual report

[13] History of Gadsden County, J. Randall Stanley. 1948.

[14] Ronald Barnett oral history recount

[15] St. Petersburg Times 1.11.88 “City of Coke, smoke”

[16] <http://floridaseed.net/fcrops/forage.htm>

[17] Location of Agricultural Production in Florida – R.E.L. Greene, G.N. Rose and D.L. Brooke - Nov 1969.

[18] Location of Agricultural Production in Florida – R.E.L. Greene, G.N. Rose and D.L. Brooke - Nov 1969.

[19] 4.3.79 article in Tallahassee Democrat – referenced from Main Library

[20] Oral history provided by Dr. Barnett

- [21] “Soil Survey of Suwannee County, FL” – 1961 – T.C. Mathews and G.A. Brown of the University of Florida Agricultural Experiment Stations
- [22] Suwannee County Centennial – Sept. 28 – Oct. 4, 1958
- [23] Flue-cured tobacco in florida – Department of Agriculture – Fred Clark and S.L. Brothers Dec. 1960
- [24] Stanley, J. Randall. History of Jackson County – Jackson County Historical Society
- [25] Stanley, J. Randall. History of Jackson County – Jackson County Historical Society
- [26] Jackson County, Florida – A history, Shofner, Jerrell. 1985.
- [27] Jackson County, Florida – A history, Shofner, Jerrell. 1985.
- [28] Sunshine State Agricultural Research Report for March 1974.
- [29] Location of Agricultural Production in Florida – R.E.L. Greene, G.N. Rose and D.L. Brooke - Nov 1969.
- [30] Location of Agricultural Production in Florida – R.E.L. Greene, G.N. Rose and D.L. Brooke - Nov 1969.
- [31] Newspaper article from 1981 “Peanut growers say farm bill will put the crunch on profits.” Susan DeFord/Tallahassee Democrat?
- [32] “Once again the Big Bend finds itself in high cotton” Democrat – 8.2.81
- [33] Jackson County Florida – A History 1985, Shofner, Jerrell H.
- [34] The Tampa Tribune-Times . “Deep Roots.” 10.04.92
- [35] Tallahassee Magazine. May-June (no date)