A History of the

University of Kentucky College of Agriculture

Research and Education Center

Princeton, Kentucky 1925-2000

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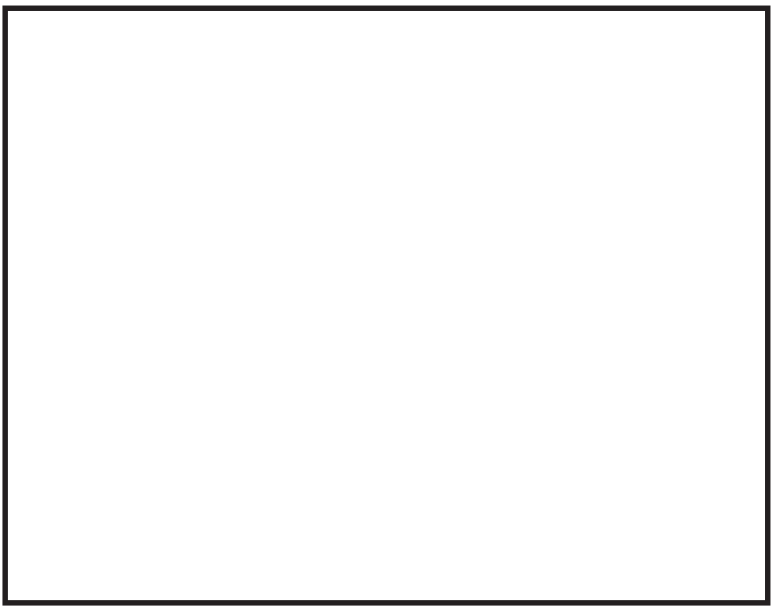

"West Kentucky is progressive and it will attain great heights with this new station here. [This] farm has in it the soul of these people."

DEAN THOMAS POE COOPER,
speaking at the 1925 dedication of the
West Kentucky Sub-experiment Station

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A NOTE ABOUT PRINCETON

As a land-grant institution the University of Kentucky College of Agriculture conducts research and education throughout the Commonwealth. The Kentucky Agricultural Experiment Station, the research arm of the College, maintains permanent facilities at several locations outside of Lexington. The largest such facility is located at Princeton. “Princeton,” as it is usually referred to, was originally titled the West Kentucky Sub-experiment Station, a branch of the Experiment Station. After the new building was constructed in the ‘80s, the term “Center” began to replace the Substation designation. “Princeton” is now known as the University of Kentucky Research and Education Center at Princeton.

PREFACE

This history of the Research and Education Center at Princeton is a modest attempt to describe the many achievements and accomplishments of the faculty and staff who, during the last three quarters of a century, have worked diligently and productively to improve agriculture in western Kentucky. In their efforts to bring science to bear on the problems confronting agriculture in that part of the state, they have made profound impacts that go well beyond the standard assessments of success in agriculture, such as bushels per acre or pounds of animal flesh produced per unit, and well beyond the geography of western Kentucky. Their work has improved the lives of western Kentuckians and Kentuckians generally. And some of the findings from research have helped revolutionize agriculture around the world.

Throughout its 75-year history, work at the station has been guided by the needs of farmers. At its inception, farming was undergoing a radical change, shifting from a labor-intensive system to one that relied heavily on capital and technology. Perhaps that shift, emerging in the 1920s, spurred the leaders of western Kentucky to push for the establishment of the station. And throughout the rest of the century, technology developed and tested at agricultural experiment stations such as Princeton has made U.S. agriculture the most productive in the world. During the past 25 years, agriculture has been undergoing another shift, this time from a system relying almost exclusively on physical technology – embodied in machines, new cultivars, and new inputs – to a system that incorporates social technology, including marketing skills, electronic accounting, and decision-making in a global economy. Already, the station has been a leader in that area as well, helping farmers market their crops strategically, understand capital applications to agriculture, and stay on top of the myriad other issues confronting modern agriculture.

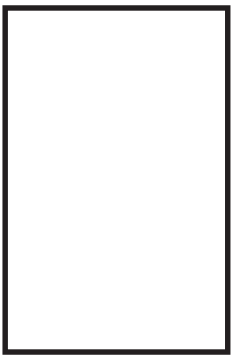
Readers who want to delve more fully into the research conducted at the station during the last 75 years may want to review Kentucky Agricultural Experiment Station Annual Reports from 1926 to the present (a complete set is available in the William T. Young Library on the UK campus). Those who are interested in putting the station within the larger context of the University of Kentucky College of Agriculture and its work may consult *The College of Agriculture of the University of Kentucky: Early and Middle Years, 1865 - 1951* by Dr. J. Allan Smith. And those who want a first-hand glimpse into the future of agriculture may want to schedule a tour of the facilities in Princeton.

Can a concept that appeared to be cutting-edge in 1925 maintain the vigor to tackle issues that will surely confront Kentucky agriculture in the 21st century? Absolutely. The faculty and staff of the station, whose expertise and enthusiasm are unmatched, will continue to find answers to emerging agricultural issues.

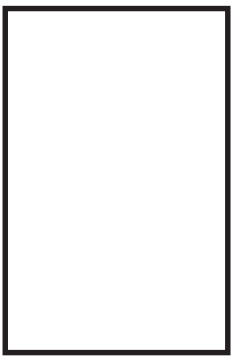
Randy Weckman
Associate Professor, Agricultural Communications

Lexington, June 2000

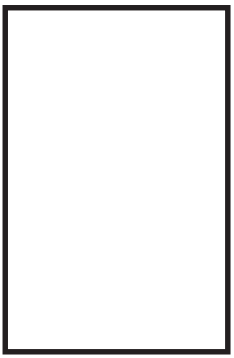
DEANS OF THE UNIVERSITY OF KENTUCKY COLLEGE OF AGRICULTURE 1925-2000



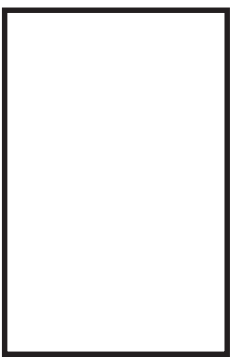
Thomas Poe Cooper



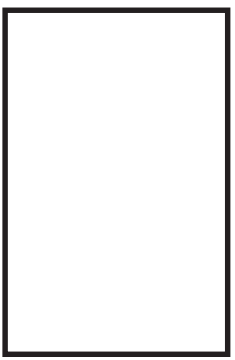
Frank J. Welch



William A, Seay



Charles E. Barnhart



C. Oran Little

HISTORY

The Beginnings

The beginnings of what today is known as the University of Kentucky Research and Education Center at Princeton may have been triggered by an event in eastern Kentucky. Timber baron E.O. Robinson established a trust fund to be used toward restoring the forests that his company had clear cut from 1908 until about 1922. Robinson of Fort Thomas and F.W. Mobray of Cincinnati had logged much of the virgin forests around the tiny town of Quicksand. In 1922, Robinson offered a 15,000-acre tract of clear-cut mountain land to the dean of the University of Kentucky College of Agriculture, T.P. Cooper, who agreed to establish an agricultural experiment station at Quicksand in exchange for the title to the property.

Following Robinson's lead and recognizing the importance of the scientific approach to agriculture, at least two western Kentucky groups set on a course to establish an agricultural research station to serve the farm people of the area. In 1922, the Paducah Board of Trade, at the urging of its secretary Con W. Craig, met with Dean Cooper to discuss an agricultural experiment substation in western Kentucky. Cooper said that he would be interested in establishing such a station to serve the farming industry west of a line from Owensboro to Guthrie. A tract of land of between 400 and 500 acres, he said, would be needed to establish a substation in western Kentucky. The Mayfield Chamber of Commerce began promoting Graves County as the ideal site for such a facility.

At about the same time, Extension agent H.D. Triplett of Caldwell County pointed out in a letter to Cooper that Princeton was nearly in the center of the imaginary line between the eastern boundaries, as defined by Cooper, and the western edge of the state. He also noted that Caldwell County had a mixture of the two predominant soil types in the area: limestone and sandstone. Cooper replied to Triplett, "It will be largely a question of some county giving the necessary land and a soil type of sufficient predominance for us to accept it. When the time comes, if Caldwell County has any propositions to offer, we shall be very glad to look into it."

The race between Mayfield and Princeton was on. In January 1924, business interests in Mayfield obtained options on several tracts of land near Mayfield as possible sites for a substation. Senator Ben F. Davis, representing Graves and Fulton Counties, introduced a bill in the Kentucky senate to provide $20,000 annually to fund a substation to be named the Mayfield Agricultural Experiment Station. He asked that Dean Cooper send him a note agreeing to the Mayfield offer contingent on the bill being passed. Cooper accepted, but the Mayfield Agricultural Experiment Station bill was never brought to a vote. Instead, Representative T.H. King of Caldwell County introduced House Bill 277 on January 29 of that year that would establish a substation at Princeton. As a result of King's aggressive promotion of the Princeton site, the Princeton bill was reported out of committee quickly, was voted on on St. Patrick's Day, and

delivered to Governor W.J. Fields for his signature on March 20. King would wait until the governor signed the bill before returning to Caldwell County.

The King bill, now enacted into law, provided for an annual appropriation of $20,000 for the maintenance and operation of a substation at Princeton, on 400 acres of land to be provided by the citizens of Caldwell County. A local committee had examined and selected four tracts totalling 400 acres. Fund raising to buy the land, which had begun in 1923, went into high gear and was organized through the efforts of school superintendent H.W. Nichols.

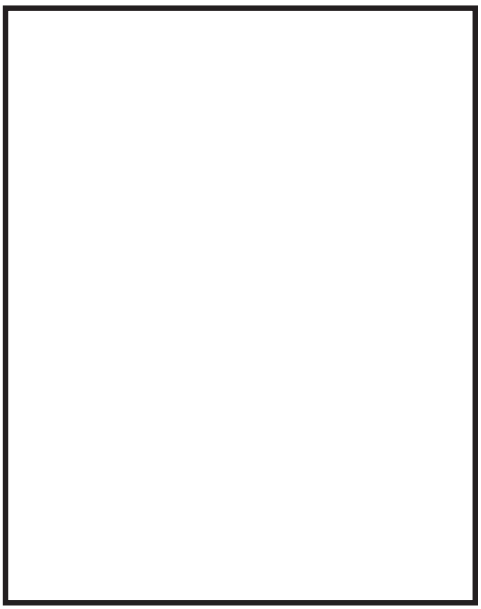
Miles Ladd, now 89, recalls a fund-raising rally he attended when he was 12 years old as a festive affair, with a great number of people attending the free barbecue. He rode to the event – now the present site of the station – in the back of a farm wagon with his class mates at Battle Creek school. A newspaper article from the time suggested a very close and vital link between the fund-raising committee and the 28 rural schools of Caldwell County. A resolution published as part of the article begins, "We, the representative farmers of Caldwell County, in session with the teachers of the rural school district hereby resolve: That we pledge our support to the movement to establish an Experiment Farm in Caldwell County near Princeton." Each school was given a quota to raise toward this effort.

Triplett, in a letter to Cooper about his work during 1924, noted that, "The year 1924 has gone down in the history of Caldwell County, as an epochal one in the history of its institutions. The establishment of the Sub-Experiment Station has made it memorable."

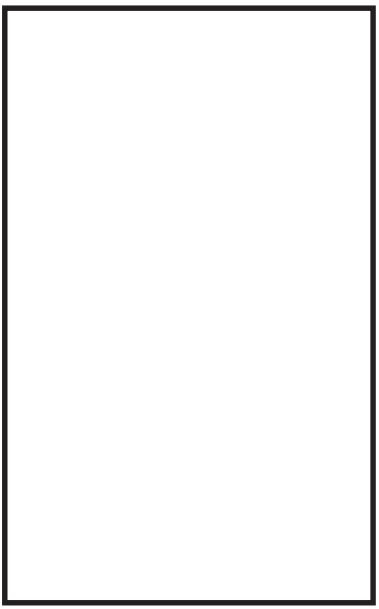
Further, in the review of his activities during the year, Triplett noted that all members of the Caldwell County Extension Organization, chaired by J.D. Wallace, had been active in raising the $26,000 to buy the land for the substation. "Through H.W. Nichols, the Extension Committee was temporarily built up to more than one hundred and fifty people. This was a necessity for the people had to be told of the emergency and all of these committeemen worked diligently, with but few exceptions." In another note to Dean Cooper, Triplett said that to bring the campaign to a close, a Labor Day barbecue and picnic on the farm was held with attendance estimated at between 5,000 and 10,000. At the event, a call for more support was made and $4,000 was pledged. "The campaign was brought to a close and we gave the title to the state of Kentucky."

With the title to 400 acres secured, Dean Cooper moved rapidly. By September 23 of that year, he asked the University of Kentucky Board of Trustees to approve the establishment of the Western Kentucky "Sub-experiment Station" at Princeton and approve the appointment of S.J. Lowry, the assistant state leader of county agents, as superintendent and to pay him a salary of $3,000 per year. In addition, Lowry was to be furnished with a house, garden, and supplies from the farm and dairy for the use of the family, as well as to be compensated for moving his household from Lexington to Princeton. They approved his request and the Experiment Substation at Princeton became part of the University of Kentucky.

The 400 acres for the farm, purchased from T.W. Luttrell, L.E. O'Hara and Harold Jacob, was now a research substation and, as promised earlier by Mr. King,



S.J. Lowry and family, circa 1925.



S.J. Lowry, Superintendent, 1925-1963.

the land consisted of the two predominant soil types: limestone and sandstone, a fact that would drive much of the first decade of research at the farm. With quick dispatch, Lowry began his duties as superintendent. By February of 1925, the O'Hara house, which came with the purchase, was being repaired and remodeled for occupancy as a residence and office for the superintendent. Construction of a poultry house, mule barn and dairy barn was underway. In addition, Lowry undertook a clean-up of the property, including grubbing out sawbriars and persimmons, filling in gullies, and establishing fences. Lowry remained as superintendent until his retirement in 1963.

Even though the farm was not yet dedicated, Lowry called for an "Informal Visitors' Day" for August 21, 1925, about two weeks prior to the scheduled official dedication. In what apparently was a press release, he noted that the official dedication would be past the time of harvest. In his release, he said, "No formal presentations will be made for the visitors on the 21st, for they will doubtless prefer strolling over the property and noting the changes made and general plans for the permanent institution which they have helped establish in their community and county."

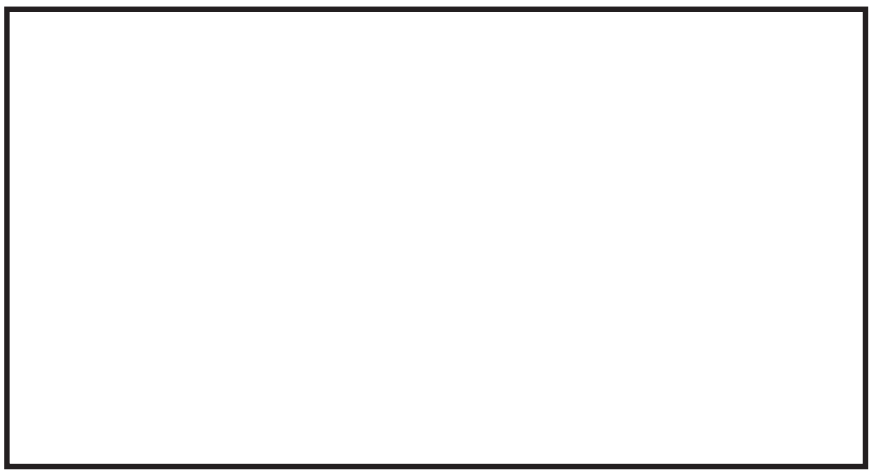
At summer's end in 1925, the farm was beginning to take shape, under the careful and conservative Superintendent Lowry. An event that would rival, if not eclipse, the 1924 Labor Day barbecue and fund-raising effort was planned for Labor Day 1925. With no small amount of community esteem and pride and amid great ballyhoo, the dedication of a research farm in the small western Kentucky town took on the trappings of a major social and political event.

What an event that dedication was! Hundreds of schoolchildren and townspeople paraded down Main Street, out Hopkinsville Road to the farm. Political speeches, a free barbecue, and a raffle of a team of mules marked that celebration, attended by an estimated 8,000 to 12,000 people. To the cheering crowd, Governor Fields praised the virtues of scientific agriculture and the people of Princeton for their wisdom and diligence in procuring an experiment station for western Kentucky. School Superintendent H.W. Nichols introduced the dean of the College of Agriculture, T.P. Cooper, as a "real" farmer.

As Cooper ascended to the speaker's platform, the crowd cheered. In his speech, Cooper said, "West Kentucky is progressive and it will attain great heights with this new station here. [This] farm has in it the soul of these people."

The Real Work Begins

Even though the Labor Day 1925 dedication was an auspicious beginning to be sure, considerable work needed to be done on the farm. When it was purchased, even the better parts of the farm had been heavily cropped and were in a state of low fertility. Thus during the first three years of operation, much of the work on the farm was devoted to reclamation of the land and construction of the buildings and fences. Lowry reported to Dean Cooper that in 1925 alone, he had supervised the construction of a poultry house, mule barn with attached machine shed and



A dairy barn was one of the 1925 improvements to the farm.

shop, dairy barn, garage, and storage building, as well as remodeled the O'Hara residence. Lowry and his farm crew that year also grew 65 acres of corn (yields were about 30 bushels per acre), 30 acres of cowpeas, 10 acres of soybeans for hay, 45 acres of rye, and 3.5 acres of dark tobacco in variety and fertility tests. In addition, they grew 2.5 acres of cotton and an acre of tomatoes.

During those early years, Lowry and his assistant Lowry Caldwell, who was hired in 1928, carried out fledgling research projects directed by scientists at the

The O'Hara residence served as the superintendent's home as well as office headquarters for the Station in 1925.

campus in Lexington. In a report filed with the Louisville *Courier Journal* in 1926, ambitious plans for demonstration research were outlined.

The report, "Extensive Work Planned at New Experiment Station; Farm Near Princeton Is Ready for Demonstration Farming," included details of the research program that was to continue well into the 1940s. The report said that the research, planned by Professors George Roberts, A.J. Olney, P.E. Karraker and J. B. Kelley of the Lexington campus, would include extensive tests and demonstration work on pastures, soil improvement, and tobacco. It also noted that a new dairy barn had been constructed and that the herd would be "increased to fifteen cows in milk."

Nine head of Jerseys were received from the Agricultural Experiment Station Farm in Lexington in November 1925 to begin the building of a dairy herd. The Jerseys were led from the train depot to the farm. Dairy research ended at the Princeton station in October of 1966, when this herd of Jersey cows was transferred to the University's Coldstream Farm. Nonetheless, the herd's 40-year presence at the farm spurred interest in dairying throughout western Kentucky, leading to the initiation of a great many dairy operations in the area.

Professor J. J. Hooper, head of the dairy division at Lexington's campus, said the program of research in dairying would concentrate on improving feed production capacities for dairy operations. He noted, "We hope to show what can be done for the land by growing legumes for dairy cow feed and by returning the manure to the land." Also noted in the long story was the fact that horticulture research, particularly in strawberries, peaches, and apples, would begin soon at the station. Poultry research also would be conducted at the station, with 90 Plymouth Rock hens and 500 each of White Plymouth Rocks and White Leghorns received in 1925. Poultry research would primarily involve diet and egg production. Poultry research continued for 40 years until the flock was dispersed in 1965.

From its inception, research at the farm served two fundamental purposes: to discover better methods of farming in western Kentucky and to demonstrate those

A chicken house built in 1925.

methods to farmers throughout the region. The public's support for the work at the substation is evidenced by the annual field days held in 1927 and 1928. The first annual field day (soils and crops) was held in August 1927 with an attendance of 800 persons, according to Lowry's reports to the dean; the field day the next year attracted 1,200 persons, representing 23 western Kentucky counties and seven other states.

In a report summarizing research at the station from 1927 to 1949, it appears that soil fertility was among the important research topics. An early experiment replicated for 21 years compared yields of corn, wheat, and hay on research plots that had been treated with varying amounts of soil amendments, including manure, limestone, and phosphate. Throughout the project, the researchers varied time, rates, and sources of soil additives to determine their effects on crops grown on both limestone and sandstone soil.

Starting in about 1931, the researchers began investigating the use of nitrogen fertilizers on corn and wheat, using about 16 pounds of actual nitrogen per acre. The research, which was widely viewed by farmers at field days for two decades, encouraged farmers to adopt fertilizers in the production of corn, wheat, and to some extent hay in western Kentucky.

Researchers also investigated crop rotation on yields. Starting in 1927, they compared the effects of growing timothy and different legumes in a rotation with corn and wheat. This research continued through 1955. Also begun in 1927 was research on various fertilizer treatments on yield and quality of dark tobacco. Beginning in 1926, scientists conducted yearly assessments of the relative merits of several best known varieties of dark tobacco, which was pioneering research because little research had been undertaken on tobacco until then, even though tobacco was Kentucky's leading cash crop.

Also, in 1926, crop variety tests were started for corn (for both ensilage and grain), soybeans (for hay), and winter wheat. Soil erosion experiments also began on the Jacob tract and continued for 16 years. An extensive tile drainage experiment also was begun in 1927.

Starting in the late 1920s, the researchers compared three 10-acre fields, similar in productivity and located on thin sandstone land, after they had prepared the fields for pasture using scientific methods. Beginning in 1929, average yearly gains of steers grazing the pasture were recorded. This stream of research lasted through at least 1948 and provided a strong impetus for soil fertility management of western Kentucky pastures according to soil type. Their research showed that average daily gains could be improved by three and a half times on improved pastures compared with unimproved pastures. As a result of this demonstration alone, hundreds of thousands of acres of poor pastureland were improved, which in turn led to a thriving livestock industry in western Kentucky.

The Difficult Years of the 1930s

The 400-acre farm had grown to 517 acres with the purchase of 60 additional acres in late 1925 and another 57 acres in 1928. In 1930, the legislature appropriated $10,000 for the construction of buildings on the farm, including a building that would have office space, a laboratory, a cold storage facility, and meeting room that could seat 400 on folding chairs. That building was completed in April 1931 and stood as the icon of the substation until 1980, when a new 35,000-square-foot research and education center was dedicated.

Built in 1931, this brick building was the Station headquarters for half a century.

As the economic depression that started in late 1929 continued seemingly without end, Lowry's reports to Dean Cooper increasingly referred to tight budgets that precluded improvements in the farm; but he did report each year that research projects in progress had been continued. In 1932, the Kentucky legislature cut the budget for the substation by $5,000.

Lowry's meticulous reports to Dean Cooper throughout the 1930s document the effects of the drought and depression on the farm. In December of 1930, Lowry wrote

The Jersey dairy herd at Princeton spurred interest in dairying throughout western Kentucky.

to Cooper, "The 1930 drought situation is so well known by everybody in Kentucky that no lengthy comments need herein be recorded." By late July of that year, Lowry reports, two silos were filled in order to salvage corn, none of which had formed ears because of the intense heat and drought. He also noted that because the pastures were dry enough to burn off, they had fed the dairy herd silage that had been ensiled in 1925. Lowry also noted that "alfalfa saved the day." A field day planned for August was cancelled due to the fire hazard presented by the drought.

Throughout the mid-1930s, Lowry's reports to Cooper continued to describe the difficulties of maintaining the farm when budgets were so limited. After being cancelled again in 1931 due to construction of a blacktop highway from the city limits of Princeton to the substation farm, the yearly field day returned as an event at the station in 1932. The first short course was held over two days in February of that year and became an annual event until 1942, with attendance averaging from 200 to 300 persons. A 4-H Club Leaders Conference for western Kentucky counties, a three-day event, was initiated in 1932 and was also held yearly until 1942.

With the formation of the Tennessee Valley Authority in 1933 came an agreement to develop cooperative programs with the land-grant universities in the seven-state valley region. In Kentucky, seven counties were involved in the TVA programs. Dean Cooper was elected to represent the states and to chair a committee to plan the cooperative program to effect TVA goals through a venture between TVA and the land-grant universities. A TVA project was started at the substation in 1934 and the cooperative program was enhanced in 1935 with the hiring of Charles Wyatt as an area agronomy specialist headquartered in Mayfield. Wyatt's work involved demonstrations on farms and at the substation in Princeton. This was one of the first

attempts to use whole-farm demonstrations as educational tools. With Wyatt's retirement in 1978, the position was moved to the Research Center at Princeton, with Monroe Rasnake serving as Extension agronomy specialist.

In 1935, the station was designated as a temporary 4-H Club camp site, with two temporary buildings erected. Some 125 to 140 young people from the Pennyrile area attended camp that year. Camping was discontinued at the station in 1941.

Even though the depression precluded anything but maintenance type work on the farm itself, new research initiatives were developed during the decade that demonstrated not only the increasing sophistication of the research but also a wide array of research topics. Disease control research on dark tobacco, notably resistance to mosaic virus and black root rot, began early in the decade. A dark tobacco variety resistant to black root rot had been developed and was being tested by 1936. Research on the merits of different curing methods begun in 1936 involved comparing a new "soft curing" (low temperature, high humidity) vs. modified old method (high temperatures, low humidity).

The corn variety trials conducted each year since the substation's inception added hybrid varieties to the trials during the decade, with a notation by Lowry in 1936 that several of the corn hybrids developed by the Experiment Station were yielding 20 percent more than conventional, open pollinated varieties.

The First Scientist Stationed at Princeton

After a decade in which the researchers on the University of Kentucky campus would journey from Lexington to Princeton (a 12-hour train trip each way), the first research scientist to be headquartered at Princeton was hired. W.D. "Army" Armstrong, appointed as a horticulture instructor on the Lexington campus in 1931,

W.D. "Army" Armstrong, shown here in mid career, was the first scientist headquartered at the Station.

became the first scientist at the station in 1938. His assignment at the farm was to conduct research and to work with horticultural enterprises in the area. Armstrong's research interests during his long career were wide ranging, from orchard management, to variety tests, to development of cultivars from native plants.

From the start of the farm in 1925, research was conducted on a variety of horticultural crops, including peaches, apples, strawberries, raspberries, blackberries, and tomatoes. Armstrong would continue and expand that research throughout his career, which culminated in his retirement in 1974.

Armstrong, well-liked and respected by west Kentuckians, is remembered for his forays into the native stands of walnut and pecan in search of naturally-occurring "hybrids" for using in commercial plantings. This activity led to the development of a pecan variety, "Bank," based on a native pecan growing at a bank in Princeton. Armstrong also coordinated the orchard spray service program. Armstrong remained the sole scientist at the Princeton farm until 1951, at which time two additional scientist positions were established.

By 1939, the annual field day attracted 2,000 people and the February two-day short course was attended by more than 500 farmers, attesting to farmers' and their families' high regard for the substation, achieved in its 14 years of existence.

The War Years

The decade of the 1940s opened without much relief for the severely depressed economy. However, America's entrance into the war in December 1941 would set the tone for research directly throughout the early part of the decade and indirectly throughout the second half.

Lowry's comments in late 1942 included concerns about the war decimating the farm crew, and he wrote in 1943 that half of his workers had volunteered or were drafted into the war effort and that few workers were available for hiring to fill the vacancies. Local teenagers were hired to fill in during the busy summer months. The annual field day, begun in the 1920s, was cancelled in 1943, 1944, and 1945 due to the war. A one-day meeting, called "War Food Conference," replaced the annual two-day short course in 1944 and emphasized greater food production and food preservation during wartime.

Increased food production continued to be reflected in U.S. agricultural policy well after the war as U.S. farmers were encouraged to increase production to help replenish European food stocks that had been depleted during the war.

By 1943, the acute labor shortage meant that only necessary maintenance projects at the farm were completed, and then only if the materials could be procured, which sometimes was problematic due to the diversion of building materials, such as paint, for use in the war.

Upon the request of the government, the researchers embarked on an extensive and detailed experiment with castor beans in 1943. Although variety tests for castor beans had been conducted since 1939, these "firehouse" experiments involved fertilizer tests, planting rate test and a date-of-planting test as well as a variety test.

(Castor beans could be pressed for their oil – castor oil – which was used as an aviation lubricant. It was feared that importations of castor beans might be cut off due to the war.) Some tobacco research that year was suspended due to the preoccupation of food production for the war effort as well as the shortage of labor.

With the end of the war in 1945, the annual field day again was held beginning in 1946, with 1,600 attending. The two-day short course, which also was cancelled in 1945, was restored in 1946 with 500 persons attending each day, well over-taxing the seating capacity of the pavilion. The next year, 1947, the two-day short course had an overflow attendance of 800-1,000 persons each day. Because the pavilion could seat only about 400 – and cozily at that – the same program was held for the overflow crowd at the Caldwell County Courthouse each day. By 1948, the annual two-day short course was discontinued because attendance had outgrown the facilities. The short course was reestablished as a one-day event in 1956 and then converted to a two-day West Kentucky Farm and Home program from 1957 to 1960.

The overflow crowd (a large percentage of whom were from veteran ag classes) at the annual February two-day short course in 1947 prompted the scheduling of the annual field day for that summer as a two-day event in order to facilitate the handling of an anticipated large attendance. That two-day event boasted a record attendance of 4,000 persons. The field day continued as a two-day event with large crowds over 2,500 persons from 1948 to 1950. As attendance decreased in the early 1950s, the field day again reverted to a one-day event beginning in 1953. Beginning in 1956, the annual field day was replaced by several smaller commodity field days that were held throughout the year. In 1980, an all commodities field day was reestablished at Princeton as a bi-annual event and has continued to the present.

By the close of the decade, the dairy operation began experimenting with artificial insemination to improve the quality of replacement calves produced. The dairy, which heretofore had produced Grade C milk (for butter, cheese, and dry milk) started producing Grade A milk with the renovation of the milking facilities. Agronomists were investigating the effects of minor elements on tobacco as well as conducting research programs that had been initiated previously, including the effects of various rates of nitrogen, phosphorus, and potassium. Construction projects in 1948 included a machine shed, shop, and storage building.

The 1950s

Dean Cooper, who had shepherded the West Kentucky Sub-experiment Station since its inception, retired in 1951, at age 70. Frank Welch, dean of agriculture at Mississippi State College, took over as dean of the UK College of Agriculture and director of the Kentucky Agricultural Experiment Station. During the same year, two new positions were added to the west Kentucky substation: an agronomist and an animal scientist.

With the arrival of the two new scientists, Leo Link (agronomist) and Ralph Overfield (animal scientist), new research programs developed quickly. In 1951, swine and sheep research programs were established. (All sheep research would

be transferred to the Lexington campus in 1963 to make room for more beef research at Princeton.)

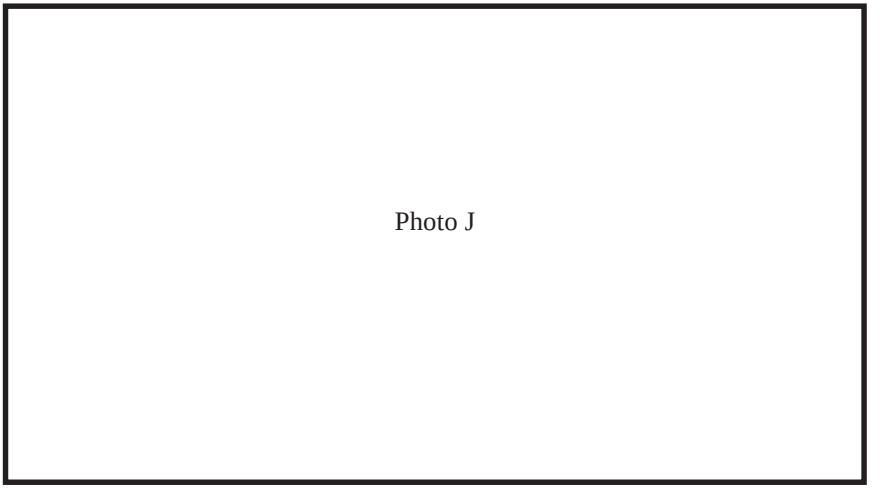
A U.S. Department of Agriculture plant pathologist, Jerry Scoog, was headquartered at the Princeton facility to develop a dark tobacco variety with resistance to tobacco mosaic virus. A greenhouse, largely funded by the USDA, was built in 1954 to aid in the dark tobacco and burley tobacco breeding project. Scoog transferred from Princeton to the USDA's Beltsville, Maryland laboratory. Chris

Tobacco research at Princeton led to the development of a great number of cultivars.

Litton replaced Scoog in 1955 and remained in Princeton until the position was moved to the USDA laboratory in Lexington. In 1951, a cooperative project with the USDA in the production of hemp was started; the project lasted four years.

With the transfer of Litton to Lexington, the Princeton station again became largely a testing station with most of the tobacco breeding work done in Lexington under the direction of breeders, including Litton, G.W. Stokes, G.B. Collins, and Paul D. Legg. The research at Princeton and in Lexington resulted in the release of Ky 160, a type 35 one-sucker cultivar with resistance to tobacco mosaic virus. Ky 160 remains the standard of quality for dark air-cured tobacco. (Other varieties were released over the years, including: Ky 165, the first one-sucker cultivar with black root rot resistance, released in 1965; and Ky 170, a fire-cured variety with resistance to tobacco mosaic virus, released in 1970. Ky 171, a variety with resistance to tobacco mosaic virus, wildfire and black root rot, was released the following year. Mosaic Resistant Little Crittenden, Mosaic Resistant Madole, Mosaic Resistant Little Wood, and Mosaic Resistant Black Mammoth were all released in 1972 to provide growers with tobacco mosaic resistance in standard, old-time fire-cured varieties. Ky 180 was released in 1988 to provide resistance to debneyi in a type 35 one-sucker cultivar. Ky 190 also was released that year to provide resistance to black shank.)

Variety testing, which had been part of the work at the station since its inception, expanded to include testing of winter barley and winter oats in 1954; and soybean (grain) variety testing began in 1958. (Early work at the station had



A field day, circa 1950.

evaluated soybeans as a hay crop.) An additional 16 acres were purchased, bringing the total acreage of the farm to 533 acres in 1956.

As an example of the research during the 1950s, three types of cows were compared in an experiment proving "the need for an adequate and persistent supply of milk for the production of milk-fat calves by the Kentucky Cow and Calf Plan," an initiative begun during the war to improve the quality of Kentucky's calves for slaughter. Essentially, the plan called for crossbreeding dairy stock with an improved beef bull to produce a heavy, milk-fed calf that would grade Choice at slaughter. The plan was widely adopted throughout western Kentucky.

Overfield's research in those years also involved evaluation of crossbreeding programs in sheep, winter pasturing swine on rye and fescue, and the use of antibiotic supplements for growing-fattening pigs grazing alfalfa pastures.

Swine research was instituted at Princeton in 1951.

In agronomic research at the west Kentucky substation, Link's research involved top-dressing trace elements on alfalfa yields, studying the effect of nitrogen placement on corn and wheat, variety testing for burley and dark tobacco, wheat, oat, barley, corn, grain sorghum, alfalfa, smooth bromegrass, tall fescue, annual lespedeza, orchardgrass, sudangrass, and red and white clover, among others. Armstrong's research during the mid-1950s involved variety trials for strawberries, grapes, peaches, apples, and sweet potatoes, as well as research on strawberry rot, using fungicides.

In September 1956, George Everette, an agronomist, was added to the faculty as an Extension tobacco specialist, working with dark tobacco producers in the area. While most of his work involved providing farmers with Extension educational programs, he also worked on variety trials and demonstration plots on the farm. Everette remained at the station through the next 30 years, working tirelessly not only as a tobacco specialist but also as an advocate for the University and the station. He was instrumental in coordinating efforts to seek funding and support for the Research and Education Center Building. The conference facilities in the building are named in Everette's honor.

An agronomic study about corn hybrids, planting dates and planting rates started in 1957 and continued through 1961. This study provided corn producers with more precise knowledge on production practices to increase yields.

Dean Frank Welch took several leaves of absence in the 1950s. As a result, H.B. Price, chair of the agricultural economics department, and William Seay, also an agricultural economist, served as acting dean and director for various times during the late 1950s and early 1960s. Seay would succeed Welch as dean and director in 1962.

As the 1950s closed, the research conducted at Princeton was becoming increasingly sophisticated. Beef research investigated the effects of diethylstibestrol implants on growth rates; swine research investigated feeding protein supplements to growing and finishing pigs raised in confinement;

Horticulture variety trials in the 1950s included strawberries, grapes, peaches, apples, and sweet potatoes.

horticulture research investigated the use of various pesticides on fruit production and quality; and tobacco research began to investigate the use of maleic hydrazide at topping to control sucker growth.

An Era Passes: Lowry Retires

S.J. Lowry, superintendent of the farm since 1925, retired in 1963. A portrait of Lowry hangs in the Research and Education Center's lobby, a tribute to his long and productive career. His successor, Paul Appel, served as superintendent for 10

Lowry Caldwell, assistant superintendent (left), and Paul Appel, superintendent following the retirement of S.J. Lowry.

years. As agricultural research progressed in both breadth and depth, it became evident that more land was necessary. In 1963, another 83 acres of land were purchased to bring the farm's total acreage to 616 acres. Another 399 acres were added in 1964 to bring the total farm to 1,015 acres.

The first performance-tested bull sale for beef breeds ever held in Kentucky occurred at the station in 1962. From that point through the early 1980s, the station hosted the "Princeton Bull Sale." Each annual sale was a special day, since breeders, potential bull buyers, and decision makers in agriculture chose this event as a gathering point. Capacity crowds often filled the sales pavilion that the farm crew became proficient at erecting once a year.

The sale tradition started in 1962 when bulls offered for sale had been fed as a group from the various consigners and tested for their abilities to gain weight. The Princeton Bull Sale was important because it connected breeders (those that tested were mostly from east of Princeton) with the commercial cattle producers located mostly in Western Kentucky. While a few outstanding sires went to seedstock breeders, most—and often the highest-selling—bulls went to commercial herds.

In 1962, a specific pathogen free (SPF) herd of Yorkshire hogs was established at the farm to replace the herd that was infected with atrophic rhinitis and viral pig pneumonia, two incurable respiratory diseases of swine. Forty-one pigs were brought from an SPF laboratory to reestablish the herd. The herd developed from the SPF hogs continues in the new century, still being maintained as a closed herd with new genetics being added only by artificial insemination. Research conducted with this herd has been both prolific and remarkable.

With the advent of integrated broiler production and large-scale egg production, meaning fewer farm family flocks of chickens, poultry research at the farm ceased in 1964. (Research in poultry production continued at the Lexington campus.) Dudley Arnett, Extension beef specialist, joined the faculty in 1964.

Charles Tutt, an agronomist, was added to the staff in 1965 to work with grain crop trials and variety development. Variety trials, most of which had commenced in the 1920s, continued as new varieties of grain crops with resistance to various diseases were introduced.

It was also in 1965 that the first research on minimum tillage for corn production was conducted at the station. This research demonstrated the feasibility of using an herbicide to control sod and then planting corn into the dead sod. Minimum tillage and no-tillage, developed largely by scientists at the University of Kentucky in Lexington, notably Shirley Phillips, and through research conducted at the substation in Princeton, have made arguably the largest impact on world agriculture in the 20th century. Subsequent research conducted by University of Kentucky scientists, as well as by scientists throughout the world, has demonstrated not only its feasibility but also its advantages in yields and protection of soil and water resources.

No-till research continued at the station in the decades of the '70s, '80s, and '90s on corn, soybeans, and eventually wheat to provide recommendations on the best production and management practices. This research included nitrogen management, fertility management (lime, phosphorus, and potassium), nitrogen inhibitors, starter fertilizers, legume cover crops, row cleaners, crop

Research at Princeton helped establish the University of Kentucky College of Agriculture as the world's authority on no-till research.

rotations, weed management, double-cropping, and management practices for moderate- to poorly-drained soils.

Dean William J. Seay died in February 1969 when an airplane he was piloting crashed into a mountain in West Virginia. Charles E. Barnhart, associate dean for the Agricultural Experiment Station, assumed the post of dean of the College of Agriculture and director of the Agricultural Experiment Station in July 1969, a position he held until his retirement.

The Substation Grows

The late 1960s evidenced a tremendous growth in the farm in Princeton. Although another 77 acres were purchased in 1967, and an additional 108 acres in 1971, to bring the size of the farm up to nearly 1,100 acres, it was the addition of a large number of faculty and staff positions that was remarkable. Under the administration of Dean Barnhart, the number of faculty and staff positions at Princeton increased to 25 during the late 1960s and 1970s, almost exclusively in the Extension area. This action symbolized the importance of west Kentucky agriculture to the state.

The fresh talent hired to augment the existing faculty and staff brought with it a number of new research efforts as well as an expanded outreach program with many new Extension specialist positions. This critical mass of new scientists also resulted in the initiation of a tremendous amount of collaborative effort across academic disciplines.

Curtis Absher and Doug Wood were among the first wave of new talent brought to the substation in 1969, as Extension animal scientists. Lloyd Murdock, Extension soils specialist, soon followed as did Jim Herbek, Extension grain crops specialist, and forage specialist Jim Kaiser. (Kaiser left in 1972 and was replaced by Garry Lacefield in 1974.) Several other faculty members were added in the early 1970s, including those filling positions in agricultural engineering, agronomy, animal sciences, entomology, forestry, horticulture, plant pathology, and veterinary sciences.

Those hired during the 1970s include (by department): Agricultural Engineering – Doug Overhults, Sam McNeill; Agronomy – Jim Kaiser, Jim Herbek, John James, Bill Witt, Garry Lacefield, Monroe Rasnake, Bob Miller, Jim Martin; Animal Sciences – Ronnie Edwards, Gary Parker, Ron Parker; Community Resource Development – Frank Zerfoss, Tom Price, Ed Jones, Glenn Kreag; Entomology – Harley Raney, David Foster; Forestry – Ralph Lewis, Don VanOrmer; Horticulture – Dudley Martin; Ron Walser, Jerry Brown, Ruth Averitt; Winston Dunwell; Veterinary Sciences – Duane Miksch.

Although the new Extension faculty focused primarily on educational programs for the western part of the state, their training and orientation developed through working with the farmers led them to begin conducting applied research at the farm. In addition, many farmers worked with the scientists to set out research plots on their farms that were used for data as well as demonstration sites for Extension programs.

Fresh talent, hired by Dean Barnhart in the late 1960s and early 1970s, led to new research efforts and Extension programs.

Extensive research and educational programs initiated in 1971 and continuing to this day established the University of Kentucky as a leader in double-cropped soybean technology in the South. Research conducted at the station by several scientists, principally James Herbek and Charles Tutt, showed that timely planting is important for high yields in double-cropping, with the studies showing a yield loss of 1½ percent per day for plantings after mid-June. The studies also helped the scientists establish management strategies by which farmers could plant soybeans earlier through the use of no-tillage, early maturing small grain varieties, and earlier small grain harvest (high moisture, swathing, and stripper header combines).

Other research in double-crop technology investigated cropping systems, tillage systems, variety comparisons, plant populations, fertility needs, and row spacing. As a result of the findings of this research and educational programs, some 90 percent of the small grain grown in Kentucky today is followed by soybeans. Of this, more than 90 percent is planted using no-tillage technology developed by University of Kentucky scientists. Their research showed a two to four bushel per acre advantage over conventional tillage. The row spacing research demonstrated that rows of 20 inches or less showed a yield advantage of some 15 to 20 percent, compared with 30-inch rows, for double-cropped soybeans. As a result, 90 to 95 percent of double-cropped soybeans are now grown in narrow rows. Largely through the research and Extension efforts, double-cropping has become commonplace in western Kentucky. Annually, about one-third of Kentucky's total soybean acreage is double-cropped.

Another early initiative of the "new talent" involved research and Extension efforts concerning grass tetany in cattle. Grass tetany is a troublesome disease,

generally occurring in animals grazing lush, fast-growing pastures in the spring. It usually leads to a quick and dramatic death of the affected animal. Research conducted identified the underlying problem as being a magnesium deficiency in the blood stream caused by low levels of magnesium and high levels of potassium in fast-growing pastures. This research led to the widespread use of magnesium supplementation to prevent the occurrence of grass tetany. As a result of this research and Extension work (conducted collaboratively by James Boling, Curtis Absher, Lloyd Murdock, and Garry Lacefield), this disorder has been reduced from being a major problem for Kentucky cattle producers; in fact, producers have found that the once devastating disease can be essentially eliminated if they follow the recommendations from the research.

With the rapid expansion of grain growing in western Kentucky, many farmers became interested in marketing their grain through livestock, and the livestock industry also flourished in the 1970s. The swine industry began to adopt confinement production systems. Agricultural engineer Doug Overhults, working with animal scientists at the station, developed educational programs to teach farmers how modern livestock facilities could be built efficiently and operated effectively. Engineers also provided extensive educational programs to show how grain could be stored on the farm while safeguarding its quality for both feed and commercial sale uses.

Using the SPF swine herd, scientists have a better understanding of microbial resistance to antibiotics.

Another remarkable study at the substation begun in the early 1970s involved the swine herd that had been closed to outside contamination since it had been reestablished in 1962 using SPF stock. Starting in 1972 and until this day, that swine herd has not been given antibiotics of any kind as part of a long-term study

of microbial resistance to antibiotics. (Prior to that subtherapeutic doses had been used routinely.) During the first several years following antibiotic withdrawal, tetracycline resistance in fecal coliform bacteria decreased from 90 percent initially to about 50 percent. Since that time, 30 to 50 percent of fecal coliforms continue to be resistant to tetracycline, a major finding with applications to both animal agriculture and human medicine.

Other nutritional studies with the herd helped establish phosphorus requirements of barrows, boars and gilts, lysine requirements of barrows and gilts that led to split sex feeding, the use of on-farm roasted soybeans for swine, and the first study in the world to evaluate low phytic acid corn as a means of reducing phosphorus excretion by pigs. This latter study has far-reaching implications for water quality and animal agriculture as well as plant breeding.

In another research initiative started in the 1970s, animal scientists documented the costs associated with untreated pinkeye in calves. By documenting the economic losses due to this bacterial disease, calf producers began treating pinkeye, rather than just assuming it was only a nuisance without economic consequences.

With the addition of Garry Lacefield as forage specialist in 1974, research and Extension activities to provide recommendations on improving pastures became a major emphasis at Princeton. A pasture renovator, having been recently developed by agronomists and agricultural engineers in Lexington, was demonstrated throughout the region. To increase farmer interest in pasture renovation, more than 300 acres of demonstration pastures were renovated each year throughout western Kentucky. The research and education provided by this project stimulated attention to pasture conditions for grazing livestock and have improved livestock production in west Kentucky immeasurably.

Also helping improve livestock production throughout Kentucky were research and education concerning fescue toxicosis. Tall fescue, a grass that is the predominant species on 5.5 million acres of pasture land in Kentucky, had been known for some time to be associated with poor animal performance, particularly in the summer months. After researchers identified a fungus that lives inside the grass as the cause of poor animal performance, a two-pronged research and Extension program was undertaken in the late 1970s to identify the level of endophyte infection of various varieties of tall fescue and ways to manage pastures to reduce the effects of the endophyte.

A collaborative effort between agronomists and animal scientists (Garry Lacefield, Monroe Rasnake, and Roy Burris) yielded effective strategies for cattle producers to manage their endophyte-infected pastures. Renovation of pastures, coupled with managing the breeding season of animals, helped immensely. The introduction of endophyte-free fescue varieties and low-endophyte fescue varieties also helped producers avoid profit losses associated with the pest.

By the late 1970s, soil compaction, resulting from the use of modern – but heavy – equipment in fields and pastures, was increasingly recognized as being responsible for poor plant performance. Even though scientists suspected the

increased use of heavy equipment was causing problems in the underlying soil layers, determining the exact location and extent was difficult because practical, reliable equipment to measure soil compaction had not been developed. In cooperation with a Russellville, Kentucky, agribusiness concern, an affordable soil penetrometer that could pinpoint soil compaction problems was developed. Agronomist Lloyd Murdock at the Princeton station embarked on a thorough evaluation of the low-cost tool. As a result of his research, the penetrometer was proved to be a reliable indicator of soil compaction. Today, thousands throughout the U.S. use the soil penetrometer developed and tested in cooperation with the scientists at the substation in Princeton.

When Bill Witt, an Extension weed control specialist, joined the faculty at Princeton in 1974, Johnsongrass, a grass that had become a vexing weed throughout the region, was a major limitation to no-tillage crop production. Witt undertook extensive research and educational efforts on managing the pest. The field adjacent to the original office building was dedicated solely to research concerning Johnsongrass control. Research ranged from recirculating sprayers and rope wick applicators to selective post-emergence herbicides.

Witt transferred to the Lexington campus and Jim Martin took over the research and Extension efforts concerning Johnsongrass control in 1979. Findings from this research, coupled with aggressive educational efforts, contributed to

Integrated Pest Management research and Extension activities led to more precise use of pesticides.

reducing the threat posed by Johnsongrass. This in turn led to a doubling of the percentage of no-tillage acreage in corn and soybeans during the last 25 years.

An Extension entomologist was hired at the station in the 1970s. Within a few years of Harley Raney's arrival, an Integrated Pest Management program was

instituted to help farmers better manage pests in their crops during the growing season. The IPM program proved popular with farmers who needed the expertise of trained technicians to monitor their crops for signs of pests and to have recommendations to control the pests in the most economical fashion possible. With Raney's departure to the Lexington campus late in 1979, Doug Johnson became the Extension entomologist at the station in March 1980. Under his direction, the IPM program increasingly moved toward teaching farmers, particularly those in horticultural crops, to use IPM techniques to improve pest control using economics as the driving force. The impact of the IPM program has been two-fold. First, the use of hazardous pesticides has been reduced; second, the cost associated with pest control has been significantly reduced.

By 1973, Paul Appel, who had taken over the superintendent's position in 1963, transferred to Lexington as assistant to the Dean of Agriculture Charles E. Barnhart. Harvey Mitchell became the station's third superintendent, a position he held for just short of two years. Mitchell left to accept a private farm management position with a family-farm enterprise in Central Kentucky.

Donnie Davis accepted the position of station superintendent in 1975, after having served with the Kentucky Department of Agriculture for a few years. Davis remains in the post he's held for a quarter of a century. In his tenure, Davis has seen an additional 78 acres of land purchased and a long-term lease obtained for an additional 60 acres, bringing the total of the farm to about 1,360 acres. He's also witnessed increased research capacity at the station as a result of new faculty and staff members, the building of the current research and education center facility, and many improvements to the farm facilities and land.

Davis has been instrumental in procuring critical equipment and supplies for the station. Faculty members at Princeton give credit to the efforts of these station superintendents as well as to the farm crew and station support staff for the help and cooperation that made and continues to make their research and educational accomplishments possible.

In 1978, the United States Tobacco Company entered into a cooperative agreement with the University of Kentucky to fund a faculty position on dark tobacco genetics and breeding at Princeton. The position was originally filled by Robert Miller, who remained in the position until 1982. Agronomist Paul D. Legg was employed in late 1982 to fill the position.

It became clear in the 1970s that the old office and meeting facility built in 1931 was inadequate for the expanded number of faculty and staff associated with the substation. In addition, the expansion of Extension programs associated with the new Extension faculty positions created needs for meeting spaces and for service laboratories, including soils and plant laboratories. With support of the farm leadership in western Kentucky, plans were made to build a 35,000-square-foot research and education center to replace the old facility. The building was completed and dedicated in 1980. In 1989, the building was renamed as the Rottgering-Kuegel Building, honoring Howard Rottgering and Bill Kuegel, west Kentucky farm leaders who were instrumental in securing funding for the facility.

The Research and Education Center, dedicated in 1980, features landscaping used as a botanical garden and nursery crop development center.

The landscaping around the new building was developed by Win Dunwell (hired as Extension horticulturist in 1979), who envisioned it as more than just landscaping. Conforming with the general purpose of the station, Dunwell developed the landscaping as a botanical garden and nursery crop development center. The collection of plants surrounding the building allows researchers, nursery crop growers, landscape contractors and maintenance operators, garden center operators, and consumers to see how various plants perform under western Kentucky conditions.

Soybean row spacing research was intensified at the station starting in 1977 and continued until the early 1990s. The results of this research conducted by James Herbek, Charles Tutt, and others have had a decided impact on how soybean producers grow their crop. The conventional row spacing was 30 inches between rows and research up until that time had not found any advantage to planting the crop in narrower rows, except in late planted, double-crop systems. However, the Princeton research that incorporated new technologies for planting full season soybeans in narrow rows, using newer herbicides and improved varieties, showed that rows of 20 inches or less resulted in yield improvements of 12 to 15 percent, compared with 30-inch rows. As a direct result of the research into row spacing and yields at the station in Princeton, 80 percent of soybeans are now grown with narrow spacing, with an increase in production of more than 5 million bushels per year.

High energy prices in the 1970s, and threats of fuel shortages in the 1970s and early 1980s, prompted agricultural engineer Sam McNeill at the station to pursue research into developing a biomass burner as a heat source for on-farm grain drying. A prototype burner that used corn cobs and wood chips was successfully tested and demonstrated on a full-scale farm grain system. However, declining fuel prices reduced interest in alternate energy sources, and the manufacturer

ceased production of the biomass burner. Nonetheless, knowledge gained from this study helped farmers learn to use conventional fuel more efficiently, thereby reducing their drying costs in future years.

The 1980s – Difficult Years for Farmers

Strong commodity prices and substantial demand on the international market for U.S. farm products boosted farm land prices in the 1970s and spurred farmers to seek ways to improve yields. Rising farm income, coupled with high inflation rates – at times in the double digits – made farmland an attractive, but speculative, investment. Higher interest rates in the early part of the 1980s and a softening of export demand led to cash flow problems for many farmers during the mid-part of the decade. On average, farm land prices dropped a third between 1980 and 1985. Farmers looked to agricultural scientists to help them improve on-farm efficiency to help them keep their operations out of bankruptcy.

During the decade, scientists at the station in Princeton answered their calls in a variety of ways. Research into improved on-farm efficiency (among which was a corn and soybean input management study) was undertaken and Extension programs to help financially strapped farmers keep their sanity, if not their operations, were initiated.

New scientists joining the Princeton faculty during the decade included Don Shurley, Dick Trimble, agricultural economics; Paul Legg, Bill Maksymowicz, and David Ditsch, agronomy; Roy Burris, Jim Randolph, animal sciences; Doug Johnson, entomology; Kent Mullinex, Mark Hurley, and Dwight Wolfe, horticulture; Wayne Wilcox, Paul Bachi, and Don Hershman, plant pathology, and Dan Kirkland, regulatory services.

Although research at the station in the 1920s and 1930s had established the benefits of long-term crop rotation for grain crops planted following grass and legumes, the practice had waned during the 1950s, 1960s, 1970s, and 1980s throughout much of the state as grain cropping intensified. Yield benefits of crop rotations were often overlooked as fertilizers and pesticides were used as a substitute for crop rotation.

Agronomists James Herbek and Lloyd Murdock began an evaluation of crop rotation involving corn and soybeans using modern technologies of production in 1981; the research continued through 1987. The results of the research were startling. The studies showed an average crop rotation yield advantage of 10 bushels of corn per acre if corn were grown alternately with soybeans and a five bushel per acre increase for soybeans, grown alternately with corn. As a result of this research, crop rotation is again considered an important part of cropping systems in major grain producing areas.

Agronomist Lloyd Murdock began research in 1980 to improve the use of urea nitrogen for fertilizing cropland. Although urea was a less expensive nitrogen source, farmers often found that it volatilized to the air soon after application. A urease inhibitor was known to have the potential to minimize

Wheat and soybean double-cropping in a rotation with corn made it possible for farmers to grow three crops in two years.

volatilization of urea. Some of the earliest field work to evaluate urease inhibitors was conducted at the station. In part as a result of this research, urease inhibitors are used extensively in the U.S. to prevent nitrogen losses when urea fertilizers are used.

Also started in 1980 was research into the economic feasibility of using irrigation for corn and soybeans. Even though Kentucky's annual rainfall is sufficient to grow a great crop, it is common to have long periods of droughty

A decade-long study found that irrigation improved yields by an average of 48 bushels per acre for corn and 16 bushels per acre for soybeans

weather during the growing season. Research conducted by James Herbek, Lloyd Murdock, and Monroe Rasnake investigated the yield benefits that could be expected from long-term irrigation for both corn and soybeans. The decade-long study found that the yield benefits from irrigation for corn averaged 48 bushels per acre and for soybeans, 16 bushels per acre. Results of the study spurred increased production of both corn and soybeans under irrigation substantially.

In 1981, a research program on intensive wheat production was initiated by Lloyd Murdock and James Herbek to improve wheat yields. New varieties of soft red winter wheat were being introduced and these varieties had higher yield potentials than older varieties. In the late 1980s, other scientists from several disciplines joined the research effort. The areas studied included varietal differences, seeding accuracy, row spacing, nitrogen timing and rates, use of fungicides, input management, and growth regulators.

During the previous decade, wheat yields averaged 35 bushels per acre in Kentucky. Research about measuring the need for nitrogen in growing wheat crops conducted at the station in the late 1980s also helped boost wheat production throughout the region. Chlorophyll meters, which had been used in Japan to assess the need for nitrogen fertilizers in rice, could also measure the amount of chlorophyll in growing wheat; but it was up to scientists at the station, notably Lloyd Murdock, to match meter readings with the precise needs for nitrogen in the growing wheat crop. As a result of these efforts, these meters are commonly used and readings interpreted to assess nitrogen fertilizer needs in wheat.

A wheat science group, made up of scientists from several disciplines, was initiated in 1997 to develop and conduct wheat research and educational programs. By the end of the 1990s, average wheat yields had increased to 50 bushels per acre, with some wheat yielding more than 110 bushels per acre under ideal conditions.

And also during the 1980s with the development of suitable no-till drills, agronomic research into the feasibility of cropping wheat using no-till techniques found that adjustments in management practices were necessary. The research conducted by James Herbek and Lloyd Murdock found that yields of no-till wheat could be comparable to yields of tilled wheat. As a result, no-till wheat acreage increased from five percent in 1983 to more than 25 percent in 1999.

In 1982, a plant pathology position was established at the research station and Wayne Wilcox was hired as Extension plant pathologist. A diagnostic laboratory was set up and a plant pathology research specialist (Paul Bachi) was hired in 1983. By 1984, Wilcox had accepted a job at another university and a new faculty member, Don Hershman, replaced him. Soon after Hershman's arrival, the soybean cyst nematode laboratory was moved to Princeton from Lexington. Hershman initiated a soybean cyst nematode program to help farmers in the area identify and control the pest. Through an aggressive research and Extension program, farmers used the recommendations of the research to improve yields in infected fields by some 10 percent. The effort to control the pest continues to this day through research, education, and diagnostic services.

A plant disease diagnostic laboratory was established at Princeton when the new center was built.

The diagnostic laboratory provides patrons with rapid and accurate plant disease diagnostic and management information. This information has been used by both commercial producers and homeowners to plan for and implement effective, economical, and environmentally sensitive disease management programs.

In the fall of 1982, interest in and increased demand for soil testing led to the establishment of a soil testing laboratory at Princeton. The laboratory quickly became popular and currently processes about 15,000 soil samples each year.

With sagging commodity prices, farm land prices plummeted in the mid-1980s. That, coupled with higher interest rates, put many farmers in a cash flow squeeze. Don Shurley, who had joined the Princeton faculty in 1980 and then moved to the Lexington campus in 1983, along with Dick Trimble, who joined the Princeton force in 1985, developed a toll-free "hotline" to help farmers under the stress of impending foreclosures. Trimble also established an educational program to teach farmers how to keep tabs on their various enterprises and to make wiser decisions based on accurate record keeping. Trimble augmented his recordkeeping work throughout the 1990s by teaching farmers about borrowing, through an Extension- and Farm Services Administration-sponsored program for borrowers.

By the end of the decade, Charles Barnhart, who served as dean of the College of Agriculture, director of the Kentucky Agricultural Experiment Station, and Director of the Kentucky Cooperative Extension Service, and whose efforts had greatly expanded the scope and sophistication of activities at the station as well as the number of faculty members headquartered at Princeton, retired. C. Oran Little, who had served as associate director of the Kentucky Agricultural Experiment Station from the mid-1960s through the mid-1980s, returned to Kentucky in 1988 from Louisiana State University, where he had served as vice chancellor of research and director of the

Louisiana Agricultural Experiment Station, to become the dean and director. Little had been instrumental in procuring funding for the Research and Education Center during the Barnhart administration. Little continues to serve as dean and director, but has announced plans to retire September 30, 2000. He, like his predecessors, will leave a strong and well-functioning station in Princeton.

The 1990s

By the 65th year of the establishment of the station in Princeton, no-tillage agriculture, in large measure developed by researchers at the University of Kentucky during the previous two decades, had become a dominant form of growing crops, not just in Kentucky, but throughout the world. And while no-tillage agriculture certainly had advantages over conventional tillage, some nettlesome problems developed, especially with weeds. Jim Martin, who joined the faculty in 1980 to continue Bill Witt's research and Extension work on Johnsongrass control, turned his attention to other problem weeds in no-till systems, primarily annual ryegrass. His research tested various herbicides for its control and his Extension efforts shared those findings with farmers.

During the 1990s, no-till wheat research was intensified to define management practices that are important in making no-till wheat profitable. This research included nitrogen management, weed control, fungicide use, and corn residue management for

Field days have been popular at the Station since its inception.

wheat stand establishment. In 1992, a long-term study was initiated by James Herbek and Lloyd Murdock to compare no-till wheat and tilled wheat in a cropping system rotation of corn, wheat, and double-cropped soybeans to determine if differences occurred among the two wheat tillage systems on soil components and yields of the other rotational crops. The results found that a no-till cropping system that included

no-till wheat as compared with tilled wheat improved soil quality, resulting in higher yields for the corn and soybeans in the no-tillage system.

Increased soybean production led to serious soil erosion. Crop rotation and minimum tillage research helped farmers reduce this problem.

The rapid expansion of the broiler industry into Kentucky created a number of research needs. Agricultural engineers Sam McNeill and Doug Overhults embarked on an aggressive research program into temperature, humidity, and

Research conducted in the 1990s provided recommendations on using animal manures as crop nutrient sources while protecting water quality.

energy uses in poultry facilities, to aid in the design of cost-efficient housing for broilers. In addition, agronomists Monroe Rasnake and Lloyd Murdock began research into the feasibility of using the litter from poultry houses on crops as a source of plant nutrients. The research not only studied the nutrient content available from poultry litter, but also the means by which it could be applied to cropland without environmental hazard. As a result of both areas of research, new poultry housing is more energy efficient than before and farmers are using poultry litter in place of expensive fertilizers for their crops.

Research at the station concerning the potential that Canola, an oilseed crop that is a high quality edible type of rapeseed, could be a profitable alternative crop was conducted for 11 years beginning in 1987 by James Herbek and Lloyd Murdock. The extensive research and education programs at the station established the University of Kentucky as the initial leader in Canola technology and information in the South. Because of interest in the crop during the late 1980s, Kentucky's Canola acreage increased from less than 1,000 acres in 1986 to more than 20,000 acres in 1989. While the research showed that under the right management regimen Canola could rival wheat in profitability, the lack of development of adapted varieties as well as a scarcity of local markets, processing facilities, labeled pesticides, and a standard market grading system limited Canola production and acreage gradually declined. Currently, very few acres of Canola are grown in Kentucky.

New personnel joining the station in the 1990s included: Paula Howe and John Potts, agronomy; Kevin Laurent and Richard Coffey, animal sciences; Bill Wurts, aquaculture-KSU; Patty Lucas, IPM; Karen Hicks, 4-H; and Nancy Jones, EFNEP. Extension area program directors for the Purchase (Ralph Prince), Pennyrile (Jeanne Davis), and Green River (Karen Ramage) areas were headquartered at the station starting in 1992.

With the headquartering of a Kentucky State University aquaculture specialist at Princeton in 1989, area farmers interested in small-scale fish production were able to access expertise. Bill Wurts began working with many farmers who had ½- to 3-acre farm ponds. By working with him, they were able to improve their harvest of channel catfish substantially. Other farmers worked with Wurts in establishing commercial fishing lakes. Recently, several of the small-scale catfish farmers have joined forces to establish a cooperative processing plant in the western part of the state. The group has plans to establish a fingerling production facility.

Animal sciences research at the station in the late 1990s began to investigate the use of non-traditional feeds such as soyhulls and corn gluten for high-forage diets for beef cattle.

Technological changes in tobacco production in the late 1980s and throughout the 1990s, particularly in the production of transplants, necessitated a great deal of research and education. Research on float systems of transplant production refined techniques to assure the production of quality, disease-free transplants. In addition, research and education about improving the market preparation of dark tobacco continues to be a major program area for the scientists at the station, as does the evaluation of new pesticide products developed by the agricultural chemical industry.

Epilogue

As the Sub-experiment station, now called the Research and Education Center, in Princeton celebrates 75 years of distinction in scientific achievement and also enters the 21st century, we are reminded of Dean T.P. Cooper's prophecy and wisdom in his dedication speech in 1925 when he said, "West Kentucky is progressive and will attain great heights with this new station here. [This] farm has in it the soul of these people." To be sure, Cooper was right. West Kentucky agriculture has attained great heights due to the presence of the station. He also was right when he referred to the soul of the people being part and parcel of the farm. It has been the soul of the people of Kentucky throughout the years, as well as the soul of the many scientists who've toiled here, that has afforded the great advances made during the past three generations – progress that was unthinkable even to those great individuals who envisioned the station and who with their enthusiasm and perseverance made it a reality.

The future? If past is prologue then Kentuckians will enjoy the benefits of another 75 years of discovery from scientists at the Princeton station. While it might be as difficult to anticipate the exact direction that progress in the next 75 years of the station will take as it was in 1925, it could be speculated that research and educational programs will advance in some areas already under investigation. Those areas include: precision agriculture, biotechnology, new crops, environmental management of farming enterprises, and alternative feedstuffs for livestock.

RESEARCH AND EDUCATION CENTER PERSONNEL 1924 - 2000

FARM SUPERINTENDENTS		
S.J. Lowry	9-23-24	10-01-63
Paul Appel	11-01-63	5-10-73
Harvey Mitchell	6-01-73	2-01-75
Donnie Davis	2-01-75	
ASSISTANT FARM SUPERINTENDENT		
Lowry Caldwell	7-01-28	6-30-74
STAFF SUPPORT ASSOCIATES		
Leslie Barber Lamb	7-01-43	5-31-50
Mary Josephine Griffin	7-01-50	3-31-95
Barbara Lowery	1955	1956
Bettie Sue Wallace	9-17-56	6-30-65
Brenda Board	6-01-65	5-04-70
Brenda Sanders	5-12-70	4-30-73
Connie Traylor	1-01-70	5-16-74
Marilyn Hooks	7-30-73	
Christi Forsythe	7-06-74	
Mary Ann Kelley	4-02-79	
Kay Cotton	12-08-80	
Covetta Ramey	1-28-91	
Elizabeth Kizzee	5-26-92	
Barbara Meyer	1-17-95	
Sandie Waddell	12-11-95	
FARM MANAGERS		
Ellis Jones	1928	1947
William Jones	1928	1936
Boone Piercy	1951	1957
James Wilson	7-01-52	01-03-87
ASSISTANT FARM MANAGER		
Royce Burchett	04/09/88	
MANAGEMENT & OPERATIONS		
John Kohlmeyer, Operations Superintendent	8-01-80	1-04-85
Mike Heath, Operations Superintendent	3-01-85	
Clyde East, Custodian	6-09-84	9-20-86
Lynn Poindexter, Custodian	11-29-86	
Chris Holeman, General Maintenance	2-23-98	

AGRICULTURAL COMMUNICATIONS SERVICES

Freddie Higgins, Computer	4-01-85	
Rich Phelps, Computer-Regional Ext. Tech. Contact	4-20-98	
Laura Skillman, Extension Associate	9-01-00	

AGRICULTURAL ECONOMICS

Don Shurley - Extension	8-14-80	5-1-83
Dick Trimble - Extension	1-14-85	

AGRICULTURAL ENGINEERING

Howard Read - Extension	8-01-69	3-13-72
Doug Overhults - Extension	1-01-73	
Sam McNeill - Extension	1-14-79	

Technicians

Mike Heath	3-07-83	2-28-85
Leo Cummins	9-01-85	6-29-90
John Earnest	1-21-91	

AGRONOMY

Leo Link, Tobacco & Crops - Research	2-13-51	7-7-67
Randolph Richards, Grain Crops - Research	8-1-55	9-63
George Everette, Tobacco - Extension	10-22-56	3-27-86
Charles Tutt, Grain Crops - Research	9-01-65	
John Masterson, Tobacco - Research	7-01-68	12-31-72
Lloyd Murdock, Soils - Extension	12-8-69	
Jim Kaiser, Forages - Extension	7-01-70	12-31-72
Jim Herbek, Grain Crops - Extension	9-01-70	
John James, Tobacco - Research	3-12-73	6-30-80
Bill Witt, Weeds - Extension	6-01-74	1-31-79
Garry Lacefield, Forages - Extension	6-10-74	
Monroe Rasnake, Soils - Extension	7-20-78	
Bob Miller, Tobacco - Research	7-01-79	3-12-82
Jim Martin, Weeds - Extension	12-1-79	
Paul Legg, Tobacco - Research	11-01-82	
David Ditsch, Soils - Extension	7-15-84	7-29-88
Bill Maksymowicz, Tobacco - Extension	5-16-88	
Paula Howe, Soil Testing - Extension	8-01-95	
Bobby Hill, Tobacco - Research	3-17-00	

Water Quality

John Potts - Extension	7-95	1997

Wheat Science Coordinator

Dottie Call	7-97	

Technicians

Mike Bullock, Weeds	4-04-81	2-01-85
Tim Gray, Tobacco	5-21-81	6-85
Shauna Mullinex, Crops	6-12-81	6-23-82
Bill Talley, Crops	6-26-82	6-7-85
Tim Gray, Crops 6-85	7-1-95	
Tony Ellis, Tobacco	8-19-85	4-05-89
David Magness, Tobacco	8-05-85	6-05-87
Tim Kennady, Crops & Soils	3-11-85	8-23-85
Larry Oldham, Crops & Soils	3-31-86	1-5-90
Lee Crawford, Tobacco	10-05-87	8-26-88
Billy Fields, Tobacco	5-01-89	7-21-89
Bobby Jewell, Tobacco	5-15-89	8-10-90
Rhea Hopper, Tobacco	10-23-89	6-14-99
David Watson, Crops & Soils	1-29-90	11-25-94
Dottie Call, Tobacco	5-15-94	12-16-94
John James, Crops	8-21-95	
Traci Watkins, Tobacco	2-02-98	7-10-99

AGRONOMY/PLANT PATHOLOGY (USDA)

Jerry Skoog, Tobacco - Research	1953	1955
Chris Litton, Tobacco - Research	1955	1960
Carl Feaster, Tobacco - Research	1960	?

ANIMAL SCIENCES

Ralph Overfield, Swine & Beef - Research	12-1-51	11-30-82
Dudley Arnett, Beef - Extension	7-01-64	9-20-67
Curtis Absher, Beef - Extension	2-24-69	7-1-76
Doug Wood, Swine - Extension	10-15-69	8-18-71
Ronnie Edwards, Swine - Extension	6-1-72	11-30-74
Gary Parker, Swine - Extension	9-17-75	
Ron Parker, Beef - Extension	3-15-76	8-29-80
Roy Burris, Beef - Extension	3-01-81	
Jim Randolph, Swine & Beef - Research	2-01-83	
Kevin Laurent, Swine & Beef - Ext	6-01-92	
Richard Coffey, Swine - Ext	8-04-97	

AQUACULTURE (KY STATE UNIVERSITY)

Bill Wurts - Extension	4-01-89	

COMMUNITY RESOURCE DEVELOPMENT

Aubrey Warren	9-1-54	5-1-58
Ed Netherland	7-01-62	1-05-73
Alan Worms	1-07-66	6-30-69
Gilbert Sears	9-01-68	7-01-72

Frank Zerfoss	11-01-70	11-30-74
Tom Price	1-15-72	7-24-73
Ed Jones	11-25-74	4-07-78
Glenn Kreag	11-17-75	6-13-86
ENTOMOLOGY		
Harley Raney - Extension	8-01-70	8-17-79
David Foster - Extension	6-01-78	8-17-79
Doug Johnson - Extension	3-24-80	
Integrated Pest Management (IPM)		
Patty Lucas - Extension	6-11-90	
FAMILY AND CONSUMER SCIENCES		
Nancy Jones, Foods & Nutrition/EFNEP - Extension	2-03-92	
FORESTRY		
Ralph Lewis - Extension	3-01-73	11-30-75
Don VanOrmer - Extension	12-01-76	8-23-79
4-H PROGRAMS		
Karen Hicks - Extension	8-01-90	9-13-91
HORTICULTURE		
W.D. Armstrong - Research/Extension	7-01-38	6-30-74
Paul Thornton	2-17-50	10-19-50
Dudley Martin - Research	10-01-70	3-01-79
Ron Walser - Extension	3-15-76	2-28-78
Jerry Brown - Extension	6-15-78	3-31-00
Ruth Averitt - Research	8-20-79	2-20-81
Winston Dunwell - Extension	11-01-79	
Kent Mullinex - Research	4-14-81	6-18-82
Mark Hurley - Research	1-01-83	3-01-85
Dwight Wolfe - Research	4-22-85	
Technician		
June Johnston	10-21-91	
PLANT PATHOLOGY		
Don Poole - Extension	1969	1970
Wayne Wilcox - Extension	8-01-82	3-30-84
Paul Bachi - Research	2-01-83	
Don Hershman - Extension	5-01-84	
Technicians		
Debbie Morgan	12-04-87	10-8-99
Diane Perkins	8-15-89	8-31-94

REGULATORY SERVICES

Dan Kirkland, Soil Testing Lab Supervisor	7-01-82	

Technicians

Ed Hill	8-02-82	
Lee Cameron	8-09-82	5-28-99
Debbie Morgan	10-11-99	

VETERINARY SCIENCE

Duane Miksch - Extension	10-01-74	1-03-95

EXTENSION AREA PROGRAM DIRECTORS

Jeanne Davis	3-01-92
Ralph Prince	3-01-92
Karen Ramage	11-01-94

TIME LINE FOR WEST KENTUCKY SUB-EXPERIMENT STATION AT PRINCETON (1924 - 2000)

1923

Extension Committee, in cooperation with rural school districts, began fund raising to purchase land for experiment station.

1924

Substation established by Act of the Kentucky Legislature (March 20, 1924); annual appropriation of $20,000 for its operation.

Citizens of Caldwell County raised money and purchased 400 acres of land (O'Hara, Luttrell, and Jacob tracts).

S.J. Lowry hired as first farm superintendent. Salary of $3,000.00 per year with a house, garden, and supplies from the farm and dairy.

1925

Dedication of the substation (September 7, 1925).

Farm acres total = 460 with an additional 60 acres purchased (Jacob tract).

Poultry house, mule barn, and dairy barn built.

Complete repair and remodeling of large residence on O'Hara tract for farm superintendent to live and office provided therein.

Land reclamation projects in preparation for experimental work.

65 acres of corn grown with a yield of ~ 30 bu/acre.

Electric line extended (~ 1 1/4 miles) from Princeton to supply electricity.

Poultry flocks established to be used for poultry research.

Received nine head of dairy stock from Lexington to be used in building dairy herd and research.

3 ½ acres of dark tobacco grown for variety, fertility and disease tests.

2 ½ acres of cotton grown for variety and fertilizer tests.

Tests on tomatoes (fertilizer) and potatoes (variety).

Raspberry experiments started.

1926

Horticultural research started. Initial planting of 320 peach trees and 120 apple trees.

Long-term corn experiments started to study lime and fertilizer requirements of the soils in the area and rotations with legumes.

Tobacco tests included fertilizer, legume rotations, dark tobacco varieties and hybrid comparisons, and disease control.

Corn variety tests for grain yield were started (16 varieties).

Corn silage tests were conducted (10 varieties).

Winter wheat variety tests were started (13 varieties).

Soybean variety tests (for hay yields) were started. Discontinued after 1936.

Spring oats variety tests were conducted.

Soil erosion experiments were started. Project terminated in 1942.

Dark tobacco barn was built.

Strawberry experiments (fertility) were started.

1927

Lime and fertilizer experiments begun on limestone soil in a three-year rotation of corn, wheat, and clover hay. Experiment revised in 1945 and 1949.

Crop rotation experiments with corn, wheat, and various legumes and timothy begun with limestone and superphosphate treatments. Completed in 1955 (29 years).

Extensive pasture experiments (forage species/soil treatments/animal carrying capacity) were started on the Jacob tract. Project was terminated at end of 1948.

Threshing machine bought.

Two poultry brooder houses built.

Five wells drilled in 1925-26 did not supply adequate water. A 3-inch water main line was installed from the City of Princeton to the Substation to supply water.

First Field Day (Crops and Soils) was held on August 25 (800 people attended).

Poultry Field Day.

New horticultural projects included strawberries (fertility and crop rotation) and variety and cultural tests with raspberries, blackberries, and dewberries.

Fertilizer experiments with dark tobacco started. Experiment revised in 1945 and 1955. Completed in 1958.

Crop rotation experiments with dark tobacco started. Discontinued in 1945.

1928

Farm acres total = 517 with an additional 57 acres purchased (O'Hara and Luttrell tracts).

Second Annual Field Day on August 23 (1,200 people attended, from 23 western Kentucky counties and 7 states).

Construction of stock barn.

Tile drainage experiment started.

Beef cattle grazing test on pasture started.

Fertility experiments with finely ground limestone and acid phosphate were started.

660 peach trees planted for horticulture projects.

1929

Turkey raising experiment started.

Started experiment on lime and fertilizer requirements and methods of fertilizer application on sandstone soils for corn, wheat, and hay in rotation. Experiment revised in 1949.

Test conducted on broadcast versus hill applications of fertilizer on corn.

1930

Severe drought: "Alfalfa Saved the Day."

First use of nitrogen fertilizer.

Beef cattle barn and silo built (Jacob tract).

Studies on the comparison of superphosphate, finely ground rock phosphate, and low phosphorus basic slag were started. Experiment revised in 1949.

Corn hybrids included first time in corn variety tests.

1931

Completion of original "service building" with office space, a small laboratory, cold storage facilities, and an assembly room (pavilion) with seating capacity of 400 on folding chairs.

Construction of a black-top highway from the city limits of Princeton to the substation farm caused the field day to be canceled..

First car load of peaches ever shipped from Princeton was shipped to the Lexington market.

Alfalfa top-dressing tests started.

1932

Paper mulch used on peaches.

First Annual Short Course held (2-day event in February).

4-H Club Leaders Conference conducted (3-day event in June) for Western Kentucky counties. This was an annual event for 10 years (1941).

Farm Bureau Roundup in August (attendance of 500).

Steer feeding test begun.

1933

First mention of tractor on farm.

Eradication of contagious abortion from dairy herd.

1934

TVA project started at substation.

1935

First mention of "Crabgrass."

Tobacco barn and two brooder houses built.

Establishment of temporary 4-H Club camp site. Construction of two temporary camp buildings.

Pennyroyal District 4-H Club camp (July 22-26; 125-140 attended).

1936

Dark fired tobacco curing methods experiment started.

Tobacco mosaic virus resistance tests started.

Experiment on relative yields of grasses grown in Western Kentucky started. Dairy barn burned and rebuilt.

Two 4-H Club camps held (July 27-August 8). Camps were discontinued after 1941.

1937

Steer feeding experiment started comparing protein sources in the ration.

1938

Twenty-two experimental projects were being conducted.

Construction of a barn for dairy stock.

Construction of new toilets and bath houses for use of 4-H Club camps.

Majority of entries in corn variety test are now hybrids except for one or two open-pollinated varieties.

1939

Castor bean variety tests begun. Conducted for five years.

1940

Tobacco disease study started of soil fertility relation to “blackfire.”

Study on comparison of superphosphate and raw rock phosphate on limestone rock in a three-year rotation of corn, wheat and clover/grass started.

Oat variety test conducted to determine winter-hardiness.

1943

Experiment started of topdressing ammonium nitrate on wheat.

Farm woodlot demonstration started.

Sheep Shearing School conducted. Continued for 3-4 years.

Extensive castor bean studies conducted in cooperation with USDA.

1944

Golden Delicious trees planted on several different Malling, semi-dwarfing rootstocks.

War Food Conference held in place of annual short course (March 2).

1946

Annual field day resumed (1600 people attended) after lapse of three years (1943-45) during the war.

Two-day short course resumed (500 people attended) after lapse of one year (1945) during the war.

1947

Fertility tests (N, P, K) on burley tobacco started. Completed in 1955.

Black walnut variety test started.

Attendance at general public meetings was unusually high. War veteran agricultural classes made up a large percentage of the attendance.

The two-day short course (Feb. 26-27) had 1,800 people attending (1,000 and 800 each day). The pavilion at the Substation Service Building was too small to accommodate and an over-flow meeting was held at the Caldwell County Court House each day.

Annual field day was offered on two days (July 24-25) to facilitate handling of an expected large crowd. Total attendance of 4,000 (1,500 and 2,500 each of the days). The field day continued to be a two-day event through 1952.

1948

Construction of a machine shed, shop, and storage building.

Annual two-day short course offered each February since 1932 was discontinued because attendance had grown in recent years to the extent that the large crowds could not be accommodated in the pavilion. Short course was discontinued through 1955.

Experiment on minor elements for burley tobacco begun.

1949

Artificial insemination of part of dairy herd begun.

All entries in corn variety tests are hybrids.

1950

Burley tobacco variety tests begun.

1951

Cooperative project with USDA in production of hemp started. Conducted for four years.

Sheep research started.

Swine research started.

Burley tobacco barn constructed.

1952

Farrowing houses constructed for swine.

1953

Kentucky Cow and Calf Plan Project started. Completed in 1956.

Field day reverted to a one-day event. Continued through 1955.

Research started on chemical control of tobacco suckers.

A joint tobacco program between the Kentucky Agricultural Experiment Station and the USDA was initiated to improve dark and burley tobacco through agronomic investigations.

1954

Three office rooms added to Office and Service Building. Two resident houses constructed.

Construction of greenhouse, including office and laboratory.

Nitrogen rate test in a two-year rotation of corn and wheat started. Completed in 1960.

Potash research started with alfalfa.

Winter barley variety tests started.

Winter oats variety tests started.

1955

Three poultry houses constructed. Replaced older houses and facilities.

Dairy building improved.

Swine feeding paddock completed.

Metal feed storage and processing building constructed.

Experiment started on potash and tobacco stalks for burley tobacco grown in four-year rotations on Limestone and Sandstone soils.

Grain sorghum variety tests started (seven varieties). Discontinued after 1967.

Grain sorghum row spacing tests started. Continued for three years.

Last general annual field day held until 1980. Replaced by several commodity field days each year (which had also been held in previous years).

1956

Farm acres total = 533 with an additional 16 acres purchased.

Swine litter testing facility constructed.

Six commodity field days held (dairy, livestock, sheep, agronomy and horticulture, poultry and beef cattle).

Agriculture short course resumed (March 9). Continued as “West Kentucky Farm and Home Program” (2-day event) until 1960.

1957

Concrete block equipment shed constructed.

Corn experiment on hybrid, planting date, and planting rate begun. Continued for four years.

1958

Soybean variety tests (for seed/grain yields) were started (10 varieties).

1960

Duroc swine herd replaced by Yorkshires.

Research started on antibiotics for growing-finishing pigs.

1961

A metal cattle barn and pens added.

Regional experiment on rates of limestone for corn and alfalfa started.

Purebred breeding herd of Herefords started.

Research on use of LP gas in curing dark fired tobacco started.

1962

Specific-pathogen-free program was started in the Yorkshire swine herd.

First performance tested bull sale ever held in Kentucky (April 14).

1963

Herbicide research conducted on dark tobacco.

Herbicide research conducted on weed control in corn.

Sheep research discontinued. All sheep sold or transferred to Lexington.

Farm acres total = 616 with an additional 83 acres purchased.

1964

Farm acres total = 1015 with an additional 399 acres purchased.

Second swine feeding paddock added.

Poultry research ceased.

1965

First experiment with minimum tillage for corn production conducted; UK on its way to becoming a world leader in No-Tillage technology.

1966

Dairy research discontinued. Dairy herd was moved to Lexington.

Initial soybean row spacing research conducted. Continued for three years.

“Kentucky Bumper” peach thinning device developed and tested.

1967

Farm acres total = 1092 with an additional 77 acres purchased.

1969

Beginning in 1969 and continuing through the early 1980s, approximately 25 new faculty and staff positions were added at the station. This decision made by Dean Barnhart at the urging of farmers in western Kentucky was one of the most significant concerning the station. It had a large impact on agriculture in western Kentucky.

1971

Farm acres total = 1200 with an additional 108 acres purchased.

Soybean double-cropping research and educational program begins. UK becomes a leader in double-cropping technology in the Southeast. Numerous research studies conducted (cropping systems, tillage, varieties, fertility, row spacing, swathing and other timely management practices). Majority of research conducted 1971-1991, but still ongoing.

1975

Soybean double-cropped variety tests started.

1977

Soybean row spacing research on narrow rows intensified and continued until the early 1990s.

1979

Grass tetany research with beef cattle begins.
Integrated Pest Management (IPM) program coordination begins.

1980

Research into herbicide use for early-season Johnsongrass control in soybeans begins.

Farm acres total = 1278 with an additional 78 acres purchased.

Corn and soybean irrigation studies started. Continued for 10 years (1989).

College of Agriculture all commodity field day resumed. Continues as a biennial event.

Dedication of 35,000 square foot Research and Education Center building (October 20). Renamed in 1989, The Rottgering-Kuegel Research and Extension Building. In 1987, the conference facilities were named in honor of George Everette, long-time extension tobacco specialist.

1981

Intensive wheat management studies started. Research still ongoing.

Crop rotation experiment with corn and soybeans begun. Continued for seven years (1987).

1982
Soil testing laboratory established.

1983
Plant disease diagnostic laboratory established.

Initial no-till wheat studies started. Continued until 1987.

1985
Soybean cyst nematode (SCN) laboratory established.

1986
Canola research and educational program begins. UK becomes initial leader in Canola technology and information in the Southeast. Research ceased in 1997.

1989
Cooperation with Kentucky State University in providing an office and staff assistance for an aquaculture specialist.

1992
Area Extension directors for Purchase and Pennyrile areas located at UKREC.

Long-term no-till wheat experiment started. Experiment still ongoing.

1994
Area Extension Director for Green River Area located at UKREC.

1997
Internet access available, computer networking with main campus, and digital phone system installed.

1999
An agreement reached to lease 60 acres of adjacent land for crop research for 6 years.

2000
75th Anniversary of Substation.

Near Future
Construction of a Swine Research & Demonstration facility (with a $1,000,000 matching dollar grant from USDA).

Increased research into precision agriculture techniques.

New Crop Opportunities Center research increased.

Printed on recycled paper using soybean oil-based ink.

5M—6-2000