

# A Sampling of the History of the Dixon Springs Agricultural Center

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## DSAC History

“[t]he Illinois Agricultural Experiment Station ... is part of a nationwide system created after the U.S. Congress passed the Hatch Act on March 2, 1887, ... at land-grant universities to conduct research beneficial to agriculture and the general public. [It] has coordinated statewide research programs of the University of Illinois College of Agriculture at the Urbana- Champaign campus and at research sites throughout the state. ... The Station generates practical information that farmers use to manage profitable, resource-conserving and environmentally-safe farming systems. The end result for all consumers is higher-quality, lower-cost food and fiber and other agricultural products. Station research is not limited to production agriculture, however. Projects in the areas of human resources and family studies are among the nation's most innovative. The broad scope of agricultural research conducted through the Station keeps Illinois agriculture profitable and improves the quality of life for all citizens. The Station counts among its ‘clients’ consumers, farmers, commodity groups, agricultural organizations, environmentalists, conservationists, government agencies, industries, businesses, foundations and many others.”<sup>1</sup>

“But Southern Illinois had not benefited from the research at Urbana as had the rest of the state. By the early 1930s the agricultural and forest land of the area was depleted, productivity was low, and the economic condition of the people was poor. ... A number of staff members of University of Illinois came to the conclusion that an experiment station located on the poorly managed soils would help restore productivity and prosperity to that part of the state and also to large portions of neighboring states.”<sup>2</sup>

Agricultural experiment stations were established to improve agricultural production, economic development and quality of life in rural America through the development of state specific agricultural and rural development knowledge. The Dixon Springs Experiment Station officially opened in 1938 as a field station of the Illinois Agricultural Experiment Station in Urbana, IL. The University cited two justifications for Dixon Springs’ opening. First, the conditions in Southern Illinois were sufficiently different than

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<sup>1</sup> Illinois Agricultural Experiment Station. n.d. About the Illinois Agricultural Experiment Station. Retrieved from <http://www.ag.uiuc.edu/iaes.html> on Oct. 10, 2007.

<sup>2</sup> Salisbury, G.W. 1976. “Forward.” in Kammlade, W.G., P.W. Rexroat, and H.A. Cate (eds.) *Redeeming a Lost Heritage: Development of the Dixon Springs Agricultural Center*. Urbana: The Board of Trustees of the University of Illinois.

East-Central Illinois to warrant a station that could carry out site specific research and outreach. Second, poverty and natural resources degradation in the area necessitated a investment.<sup>3</sup>

### **The Establishment of the Station and Growth**

In 1933, five goals were set for the experiment station in Southern Illinois:

1. To develop profitable methods for producing livestock on sub-marginal land;
2. To determine the best combinations of grasses for cattle and sheep pasture on various soil types...and ...effective methods of establishing and maintaining...pastures;
3. To reduce soil erosion and conserve ... fertility;
4. To effect flood control through reduced runoff;
5. To take out of cultivation lands which are not adapted for such purposes.<sup>4</sup>

The dedication and opening of Dixon Springs Agricultural Experiment Station occurred in 1938 between the towns of Robbs and Simpson. Five-hundred-eighty acres of the land was procured outright for the University of Illinois Experiment Station. An additional “4,929 acres was secured within the Shawnee National Forest under a special use permit from the USDA Forest Service.”<sup>13, 5</sup>

The Experiment station grew quickly. Already at the time of dedication researchers were engaged in studies on the use of trench silos to utilize grain damaged in flooding to finish livestock. Experiments started immediately in livestock management, including beef cattle, sheep, and turkey. From the beginning, researchers worked on the development of pastures and grasslands and soil conservation. The focus on livestock and pasture was in part out of necessity, as soils on the land set aside for the station were so severely degraded as to mitigate against successful planting.<sup>13</sup> A weather station was started at the station in the early 1940s.

Through the 1940s, the Experiment station continued to grow. The number of academic staff grew from “one in 1940 to eight by 1950.”<sup>13, p. 246</sup> The USDA Agricultural Research Service Soil Conservation Service (SCS) placed scientists at the station as well as faculty from University of Illinois Urbana-Champaign. This continued until 1949, when the SCS discontinued research at the experiment station. Through 1955, the L.E. Gard worked under funding from the ARS Soil and Water Conservation Research Branch tracking weather and crop conditions and conducting experiments on soil and water loss, crop

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<sup>3</sup> Kammlade, W.G., P.W. in Rexroat, and H.A. Cate (eds.) 1976. *Redeeming a Lost Heritage: Development of the Dixon Springs Agricultural Center*. Urbana: The Board of Trustees of the University of Illinois.

<sup>4</sup> Cate, H. A. 1976. “The Heritage Redeemed” pp. 142-269 in Kammlade, W.G., P.W.

<sup>5</sup> UIUC Animal Sciences. 2007. Dixon Springs Agricultural Center. Retrieved from <http://www.ansci.uiuc.edu/aboutus/facilities/dsac/> on October 10, 2007.

rotation and soil conditions, terracing, mulch farming, the impacts of soil additives, and grass and legume mixes on pastures and meadows.<sup>13,6</sup>

The growth accelerated through the 1950s, 1960s, and 1970s. The Experiment Station was reformulated into the Dixon Springs Agricultural Center in 1973. By 1976 there were 10 tenure track faculty at the center, working with eight people in professional positions. There were an additional 26 field workers, five administrative workers, and five mechanics (Department of Agronomy 1976).

The areas of research had also expanded to include agricultural engineering, agricultural entomology, agronomy, animal science, forestry, plant pathology, horticulture, veterinary research, and “miscellaneous” (which included biostimulants for grain production, wildlife habitat, outreach, and weather research). Much of the research focused on soil and water conservation and no-till farming, but also included introduction and management of legumes and perennials. Within animal science, significant effort was made in the area of lamb production as well as cattle. Dixon Springs was known at the time as a national leader in sheep production. In all, there were 85 research reports included in the 1976 report.<sup>7</sup>

By 1983, DSAC had dropped to three full-time faculty, eleven professional staff, while maintaining 33 administrative and farm field workers and support staff. There were five faculty appointment vacancies at that time. Still, the experiment station produced 63 separate research experiment reports in the areas including Agricultural Entomology, Agronomy Crops and Forages, Animal Science in Beef. Table 1 demonstrates the size and scope of the research center from 1973-1983, when DSAC was at its staffing peak.

Table 1: Number of Staff and Areas of Focus

<i>Year</i>	<i>Academic Staff</i>	<i>Professional Staff</i>	<i>Admin/Field Staff</i>	<i>Areas of Research</i>	<i>Number of Reports</i>
1976	8	7	39	10	85
1977	8	7	39	10	90
1978	8	7	39	10	84
1979	7	10	35	11	75
1980	7	10	38	12	61
1981	7	11	38	12	62
1982	3	11	38	12	60
1983	3	11	33	10	63

Source: Dixon Springs Agricultural Center *Update 73-83: A Research Report of the Dixon Springs Agricultural Center*. Urbana: College of ACES, University of Illinois

<sup>6</sup> U.S. Department of Agriculture (USDA) Bureau of Plant Industry Soil Management Research and the Illinois Agricultural Experiment Station. 1952-1956. Annual Progress Report: Urbana, Joliet, Dixon Springs. Urbana, IL: University of Illinois.

<sup>7</sup> UIUC Agricultural Experiment Station. 1976. Update 76: A Research Report of the Dixon Springs Agricultural Center. Urbana, IL: College of Agriculture.

Not just the amount, but the scope of Dixon Springs' research was impressive through the 1980s. Using 1980 as an example, Table 2 demonstrates the scope of research undertaken through the Center. DSAC engaged not only in important agronomic, livestock, and horticulture research, such as the development of no-till corn, but also in wildlife management, forestry research, and engineering with applications to farm households, such as "Recirculating Sand Filters for On-site Waste Treatment in Areas with Soils Unsuitable for Seepage Fields" (Vanderholm, et al. 1980). It is also notable that the Pope County Extension division was housed at DSAC, meaning there was a potential synergy between researchers and extension educators.

Much of the research at this time was important to not only the southern Illinois region but to the nation. William McKibben's work on no-till farming practices is one famous example. Another example is William Courter's work through the mid-1980s in the area of horticulture, which redefined marketing options for fruit farmers. An example of that work is his report, "Estimating Trade Areas for U-pick Operations" (1979).

Tracking the activities of DSAC later than the mid-1980s is difficult because individual academic departments began managing the Center at that time. Research reports were often submitted as part of the reporting of separate administrative units.

According to the UIUC Department of Animal Sciences web page, "Four departments from the University of Illinois conduct research and educational programs at Dixon Springs.

- Animal Scientists conduct beef cattle research focusing on grazing management, nutrition, genetics, reproduction, and pest management.
- Agronomists study precision agriculture, crops and soil management, soil fertility, crop production, and pest management. A major emphasis is on no-till and reduced tillage systems.
- Department of Natural Resources and Environmental Sciences staff conduct research and extension programs in horticultural crop production and system-based land stewardship. The Forest Resource Center offers information and educational programs for land owners, natural resource professionals, teachers, students, and the general public
- Research veterinarians investigate diseases of cattle and hogs.”<sup>8</sup>

Clearly, the scope of work and the number of employees at DSAC has fallen over the last six decades. The number of professional staff fell from 62 in 1973 to the current level of six professional staff and roughly 20 support staff. Online research reports indicate the staff currently produces an impressive amount of applied research on key issues. For instance, a listing on the UIUC Department of Crop Sciences web site lists 13 research

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<sup>8</sup> UIUC Animal Sciences. 2007. Dixon Springs Agricultural Center. Retrieved from <http://www.ansci.uiuc.edu/aboutus/facilities/dsac/> on October 10, 2007.

reports since 2005 in the area of corn and soybean management and fertility alone. Clearly, however, diminished staff has impacted the scope of those activities.

Table 2: Types of Activities at DSAC (DSAC 1980)

<i>Research Category</i>	<i>Titles of Reports</i>
Agricultural Engineering	Recirculating Sand Filters for On-Site Sewage Treatment Solar Drying of Large Round Bales
Agricultural Entomology	Fly Control on Pastured Cattle Developmental Rate of the Walnut Caterpillar Response of Walnut Caterpillar Larvae to Scattering Evaluation of Three Insecticides for Control of Adult Grasshoppers Alfalfa Weevil Control with Three Rates of Furadan Insect and Weed Control in No-Till Alfalfa Establishment
Agronomy Crops	Current Soil Tests DSAC Commercial Corn and Soybean Performance Trials 3 Year Comparison of 0-Till, Conventional and Plough-Plant Corn and Soybeans Herbicides for 0-Till Corn in Sod 0-Till Soybeans Corn Herbicides for Conventional Seed-beds Herbicides for 0-till Corn in Soybean Stubble Control of Volunteer Corn Sorghum, Wheat Variety Tests
Agronomy Forages	Warm Season Grass Quality Under Ammonia Alfalfa Variety Trials; Evaluation of Pesticides for Alfalfa Establishment Establishment of Warm Season Perennial Grasses Asiatic Bluestems and an Eastern Gamagrass in Southern Illinois Bermudagrass for Southern Illinois Pastures and Rye-Ryegrass, Rape, Turnips and Tall Fescue for Lambs Steer Performance on Forage Rye Pearl Millet as a Pasture Alternative to Fescue
Animal Science Beef	Molasses-Mineral Blocks with Rumensin for Steers on Tall Fescue Summer Pasture Ovulation Response in Beef Cows Following Short-term Removal of Suckling Calves and Steroid Pretreatment Synchronization of Estrus in Beef Cows with Lutalyse Soybean Meal or a Liquid Protein Supplement for Wintering Buffers in High Grain Rations for Finishing Steers Egyptian Livestock Association Beef Expo, 1978-79 Egyptian Livestock Association Feeder Calf Sale

Table 2a: Types of Activities at DSAC

<i>Research Category</i>	<i>Titles of Reports</i>
Animal Science Sheep	Sheep Management Systems Comb.—6” Sheep Breed Development Influence of Group Number on Lamb Performance Floor Space Requirement for Lambs Coyote Predation in Sheep at DSAC Dixon Springs Wool Pool
Forestry	Stand Establishment and Maintenance of Woody Biomass Species White Pine for Southern Illinois White Pine Spacing Study Chemical Changes in Atmospheric Deposition Soil Moisture Weir Calibration
Horticulture	Vegetable Cultivar Trials
Natural History Survey	Disease Status of White-Tailed Deer in Pope County
Veterinary Medicine Beef	Viral Serologic Test Results on Beef Expo 78 Feeder Calves Test for Environmental Transmission of IBR, PI-3 and BVD Viruses in a Beef Feedlot Study of Feeder Calves from and Auction Selling only Calves Certified for Health and Management Use of a New Temperature-Sensitive Mutant Vaccine for IBR-PI-3 Viruses in Feeder Calves on Arrival at a Feedlot
Veterinary Medicine Sheep	Nematode Populations and Host Response in Barbados Blackbelly Cross Sheep Anthelmintic Efficacy of Avermectin and Dihydroavermectin B1 Against Ovine Gastrointestinal Nematodes
Veterinary Medicine Swine	Health Evaluations of Illinois Feeder Pigs Purchased at Auction Efficacy of the Antibiotic CP-39164 Against Coccidiosis in Swine Helminth Transmission to Swine in Anaerobically Digested Sludge Attempted Transmission of Sarcocystis Species from Raccoons and Opossums to Swine Dixon Springs Agriculture Center Weather