

A BRIEF HISTORY: THE DAIRY SCIENCE DEPARTMENT

An act of the state legislature in 1904, appropriating \$5000 for the establishment of a dairy herd, dairy barn and creamery, made it possible to initiate programs in dairy science at Louisiana State University. A more intensive phase of dairy experimental work started in 1908 with research on the value of blackstrap molasses in feeding calves, the use of root crops as feed for producing cows and cold process cotton seed as a dairy feed. In 1920 the dairy and creamery were organized into a separate section of the Animal Industry Department and in 1921 Professor Staples was made head of the Dairy Department. In 1929 the Dairy Research Department was established as a unit of the Louisiana Agricultural experiment Station. The experiment station was responsible for research in dairying while the Dairy Department was responsible for teaching and operation of the dairy farm and creamery.

The Departments of Dairying and of Dairy Research were combined in 1948, and Dr. J. B. Frye, Jr. was employed as the head of the new Dairy Science Department. Dr. Frye served as department head from 1948 until 1984 and it was during his administration that the department became known. Other original departmental faculty included Drs. L. L. Rusoff, Cecil Branton, A. J. Gelpi, and T. E. Patrick. The Dairy Science Department has a long history of service to the dairy industry and hosted the 1981 Annual Meetings of the American Dairy Science Association which marked the 75 year anniversary of ADSA.

The Dairy Science Department at LSU has had a strong undergraduate program. The Dairy Science Club and dairy science students have been very active in the Student Affiliate Division of both the Southern and National ADSA. These students have held many offices and have been recognized for their achievements in the Student Affiliate Division.

The Dairy Science Department remained as an independent department with programs in dairy production and dairy foods technology until it was merged into the Department of Animal Sciences on July 1, 2006.



1915 Dairy Meeting - City Park Dairy Farm



Early dairy farm.



Early research investigating climatic effects on dairy cattle.



Current dairy research farm, RHA 23,500.

LIVESTOCK DEVELOPMENT: LOUISIANA ANIMAL BREEDERS COOP.

The livestock development program was started in 1946 when the legislature made funds available for the improvement of livestock through a program of artificial reproduction. With the establishment of the Dairy Improvement Center in 1947, work was begun in bull management and various aspects of semen processing. Louisiana Animal Breeders Cooperative, currently know as Genex, was organized in July 1947 with the primary purpose of improving livestock through the use of artificial insemination. A cooperative relationship of over 55 years between the Dairy Science Department and Genex has provided livestock producers with current research information and access to bulls proven to be of high genetic superiority for transmitting desirable traits related to milk or meat production. While changes in technologies, services and affiliation have occurred, these have all been beneficial in meeting the genetic needs of the members and customers that the Department and Cooperative serve. Although dairy bulls are no longer housed in Baton Rouge, custom collection of semen from beef breeds has become a major program to assure continued availability of top quality genetics for livestock producers. In the future we will see cryopreservation of semen expanded to horses, fish, and other species. All of which will continue to advance the agricultural and related industries of Louisiana and the region.



Bull (Red Sindhi) used in earlier cross breeding research at LSU. (Left to right) Dr. J.B. Frye, Jr., Baton Rouge Mayor-President Woody Dumas and LSU Vice Chancellor Dr. J. Norman Efferson. (Dr. Efferson later became first chancellor of LSU Agricultural Center).

DAIRY HERD IMPROVEMENT ASSOCIATION:

Louisiana has maintained a central laboratory for testing Dairy Herd Improvement herds since the mid-1960's. The DHIA lab has been located in the Department of Dairy Science, Louisiana State University since 1966. Prior to this, individual DHIA field supervisors ran Babcock tests on individual cow milk samples on the farm.

The first photometric milk testing equipment, a Milk-O-Tester Mark 2, was added to the lab in 1968 to automatically run butterfat. In the mid-1970's Louisiana DHIA purchased a Foss 180 automated machine to begin testing for somatic cell counts. In 1975, a Milk-O-Scan 300 was added to test for protein in addition to butterfat.

In 1981, the Louisiana DHIA lab and central office moved from the Dairy Science Building on the LSU campus to newly designed and built facilities in the T.E. Patrick Dairy Improvement Center also located on the LSU campus.

In 1979, the Louisiana DHIA lab became one of the first milk testing labs in the country to electronically transmit all their lab data to a central data processing center, the Dairy Records Processing Center in Raleigh, North Carolina. In the late 1980's, Louisiana DHIA became one of the first DHIA programs to electronically transmit other herd testing data to DRPC in Raleigh directly from the farm on test day. These two changes reduced turnaround times for dairy farmers getting test day records from 12 days to less than 3 days.

Louisiana DHIA purchased a new Bentley Combi lab machine in 1994 which runs both component analysis and somatic cell counts. The new equipment also doubled the effective speed at which samples could be analyzed. In 2004 Louisiana DHIA also became a certified meter center to calibrate all DHIA testing meters in the state.

Louisiana DHIA currently serves all the DHIA testing needs of dairy farmers throughout the state of Louisiana. Louisiana DHIA also serves as the central milk testing lab for DHIA programs in Mississippi and Alabama and has run samples for research projects from research units in Louisiana, Mississippi, Alabama, Arkansas and Tennessee.

DAIRY FOODS RESEARCH: PAST AND PRESENT

Drs. Rusoff and Gelpi in 1952 had a US patent and in 1954 had an Argentine and Venezuelan patents on using antibiotics as a surface treatment on cheese to prevent surface spoilage microorganisms from growing. Some of the other earlier work in dairy foods in the department included working with antibiotics in the control of oxidized flavors (1950's), factors influencing hydrolytic rancidity and acid degree values (1960's) removal of chlorinated hydrocarbons from milk, milk sample conditions on fat tests conducted with milko-tester, factors influencing cottage cheese shelf life (1970's) studies on lactose and whey, fluid milk shelf life, effect of sweeteners on volatile compounds in yogurts (1980's), dairy food (Cheddar cheese) quality, fluid dairy products as ingredients in retail coffee house beverages, Coffee Flavor Systems (1990's). Dr. Ronald Gough has been with LSU Dairy Science for 31+ years and has been instrumental in working with the Louisiana Dairy Food Industry. Current research on dairy foods in the department includes effect of various health beneficial components such as vitamins, minerals, omega 3 fatty acids, plant stanol ester, prebiotics, probiotics in various amounts and various combinations on physicochemical, microbiological and sensory characteristics of dairy foods (2000's). Research has also commenced in the department on use of pulsed electric field in dairy food processing.



Dr. Rusoff (left) and Alice Gelpi demonstrate results of work with antibiotics in cheese manufacture



Dr. L.L. Rusoff, Borden Award recipient 1965.



Earlier butter manufacture



Earlier glass bottling of milk



Current dairy processing facility



Dairier store in operation



LSU Dairy Improvement Center



Dr. J.B. Frye, Jr. Head, 1948-1984



Barbecue 1922. First Meeting. Earlier site of the milking parlor and barns which currently houses the poultry science building



Early faculty and staff (back row left to right) Dr. James Johnston, Dr. Cecil Branton, Creamery Superintendent Richard Graham, A. J. Gelpi, Jr. and Dr. T.E. Patrick; (Front row left to right) Dairy Farm Manager Ernest Morgan, Dr. L.L. Rusoff, Dr. J. B. Frye, Jr., and Professor Edward Stone.



Current Dairy Science Faculty: (Top row left to right) Dr. Bruce Jenny, Dr. Charlie Hutchison. Bottom row left to right (Dr. Gary Hay, Dr. Cathy Williams, Dr. Antonio Achaoso (retired), Dr. John Chandler, Dr. Kayanush Aryana, Dr. Charles Boeneke.

DAIRY PRODUCTION RESEARCH

Low milk production and malnutrition in certain areas of Louisiana (early 1940's) was shown to be related to low levels of calcium and phosphorus along with low protein and energy intake. Pioneering research by Dr. L. L. Rusoff (1950's & 60's) was conducted to determine effects of low levels of antibiotics on performance of calves and mature cows. Completion of a climatic chamber and barn (1950) allowed for the expansion of general physiology research. Zone cooling, air conditioning and shades were studied to determine effects on milk production and composition and reproductive response of dairy cows and heifers. Early dairy breeding research explored methods of improving response to climatic stress in dairy cattle. Research with Zebu-European crossbreed (late 1940's) was part of a regional research effort know collectively as the Southern Regional Dairy Cattle Breeding Project (S-49). Recent research in nutrition has focused on protein and energy metabolism in transition dairy cows and dairy calves and heifers. Current research in reproductive physiology involves calf crop sex ratio and sperm mitochondrial function to improve artificial insemination fertility.