K-State Research and Extension

An Informal Report to the Kansas Legislature

KNOWLEDGE for LIFE

January 2003

Kansas State University Agricultural Experiment Station
and Cooperative Extension Service

Director's Introduction

This report is representative of the many ways that the Kansas State University Agricultural Experiment Station and Cooperation Extension Service (K-State Research and Extension) affects the lives of Kansans.

It shows that we are continuing to fulfill our mandate to provide scientific and educational information that helps to solve problems and improve the lives of people of all ages.

Because of a shortfall in state funding, we are dealing with a $5 million cutback that is being met in various ways, including closing positions, not filling positions, changing programs, and seeking early retirements. We also will be reducing the number of full-service area extension offices from five to four.

These challenges and subsequent changes will affect the way in which our public mission is being met, but we will not change our commitment to maintain excellent generation and dissemination of research and development for the citizens of Kansas.

We are nearing the end of our current five-year plan and are about to begin the planning procedures for 2004-2008. Our guiding principle is summarized by our motto: "Knowledge for Life."

Our core programs remain strong. Despite the setbacks, we will strive to meet the expectations of Kansans.

We appreciate the support of state, county, and federal governments and cooperating individuals, businesses, and community leaders. Together, we can boost Kansas and make the present and the future better.

Sincerely,

Marc A. Johnson
Dean and Director

Contents

Four Core Mission Themes

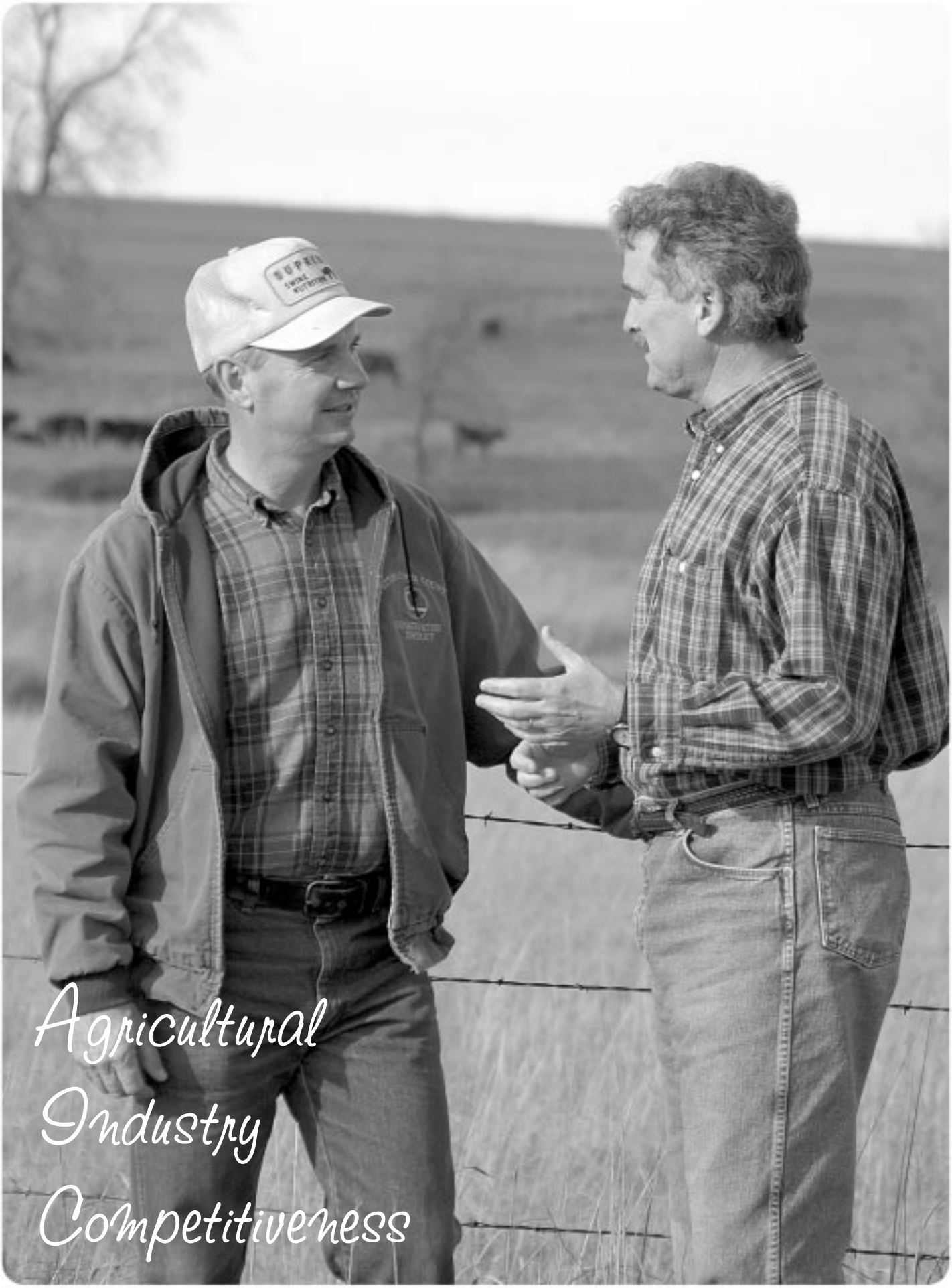
As part of its Five-Year Work Plan (1999-2003), K-State Research and Extension developed Four Core Mission Themes. Those Four Core Mission Themes are

Agricultural Industry Competitiveness

Natural Resources and Environmental Management

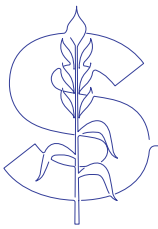
Food, Nutrition, Health, and Safety

Youth, Family, and Community Development



Agricultural Industry Competitiveness

Agricultural Industry Competitiveness



In this area, K-State Research and Extension is working to develop better cropping systems; develop more efficient and profitable livestock production systems while protecting the environment; enhance the value of Kansas agricultural goods; develop agricultural risk-management strategies; and develop agricultural technologies and information systems.

EXTRA VALUE MEANS EXTRA INCOME

Advances in food processing and marketing come from adding value to existing commodities and products. Research is necessary to determine which value-added products or processes are economically possible in Kansas, and educational programs are essential to teach Kansans how to take advantage of value-added opportunities.

K-State Research and Extension has been working on many value-added projects for the benefit of the state and its citizens. In the area of wheat, for example, value-added projects have included pasta production from wheat; starch and gluten from wheat; uses of wheat in shellfish diets; nonfood and nonfeed uses of wheat; new food productions from wheat; utilizing wheat milling by-products; and use of wheat for oriental noodles.

One of the projects to add value to soybeans involved developing industrial adhesives and resins from that commodity.

A number of projects also have focused on improving quality and marketability of agricultural products, including improving the grain marketing system, expanding export markets, evaluating food marketing, and processing sorghum for improved marketability.

K-State Research and Extension also responds to immediate problems that happen in agriculture and to families and communities.

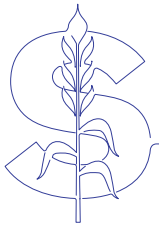
What follows are examples of work at K-State:

Ways K-State Research and Extension Helped with the Drought

For more than 100 years, K-State has provided knowledge that helps solve or alleviate problems. For example, here are six ways that K-State responded to the drought of 2002:

1. Presented weekly and biweekly crop and forage teleconferences among agents and specialists who discussed current drought conditions and issues. As a result, information was gathered and developed that was used in radio broadcasts, newsletters, and resource materials that farmers could use. In midsummer, a teleconference on specific decisions for livestock producers resulted in a series of in-depth radio programs and news articles aimed at those producers. Also, a series of meetings in Kansas counties initiated by K-State brought livestock producers together to discuss and share planning and decisions.

2 Identified the need for pasture and hay exchange among ranchers; cooperatively set up a Web site on the Kansas Farm Bureau server that brought together those who had pasture or hay with those who needed either one.
3. Provided current and historical weather data from the Weather Data Library of K-State Research and Extension to state and federal agencies needing that kind of information.
4. Developed a drought Web site with information on current drought situations, decisions, and planning for crops and livestock.
5. Held numerous conferences, workshops, tours, and field days around the state on the extremely dry conditions and options and consequences of farm-level decisions. Also planned a series of winter meetings focusing on spring planting decisions.
6. Agents and specialists consulted one-on-one with producers on the impact of the drought on farming operations. They also provided drought-related information to their local areas through newspaper columns, radio programs, and K-State Research and Extension publications.



Investigating New Ways to Add Value to Soybeans

K-State Research and Extension scientists are studying ways to create industrial adhesives and resins from the soybean. This research initiative could result in nearly quadrupling Kansas soybean production while also creating higher demand and increased commodity prices. Another impact of this research could be to reduce the 20 billion pounds of petroleum-based adhesives used annually. The soy protein adhesives used in particle board and plywood could potentially cut the current use of formaldehyde-based adhesives in half. The project includes research on the structure of adhesives based on soy protein and gene mapping of soy protein and oil. It also will identify better soybean varieties for soy protein and oil-based adhesive applications.

Contact: Susan Sun, Grain Science and Industry, Telephone: 785-532-4077, FAX: 785-532-7010, E-mail: xss@ksu.edu

Utilizing Wheat Protein in Coffee Creamers

Food scientists with K-State Research and Extension have found that wheat proteins can be used as an ingredient in coffee creamers. The wheat-based creamers remained stable without feathering (similar to curdling) and had a pleasant taste. Compared to the dairy and soy-based products currently on the market, wheat protein could be used at a much lower cost and would bring added value to the wheat industry. The research could open opportunities to study and utilize other wheat-based liquid products.

Contact: Karen Schmidt, Animal Sciences and Industry, Telephone: 785-532-5654, FAX: 785-532-2461, E-mail: kschmidt@oznet.ksu.edu

Whole-Wheat Products Found to Fight Cancer

K-State Research and Extension scientists are investigating a component in wheat bran that can kill cancer cells. A chemical component found in wheat bran—called an orthophenol—acts as an antioxidant to kill cancer cells. The component is most common in whole-wheat products and less so in highly processed wheat products such as white bread. The researchers have found that mice fed whole-wheat diets were able to reduce tumor size and number of tumors by about 60 percent. The researchers also are studying the health benefits of this for diabetics.

Contact: Dolores Takemoto, Biochemistry, Telephone: 785 532-7009, FAX: 785-532-3796, E-mail: dtak@ksu.edu

Developing a Better Case-Ready Meat Product

A study at K-State may soon change the way case-ready meats are packaged and shipped to retail stores. K-State meat scientists have developed a process that packages case-ready meats in an environment that contains no oxygen, low levels of carbon monoxide, and levels of carbon dioxide and nitrogen similar to current systems in use. Case-ready meats now are packaged in a high-oxygen environment that can cause off-odors and flavors. Additional advantages of the K-State process are that it is safe and retailers can store meat two to three times longer. Grocery stores are increasing their orders of case-ready meats. Fewer than 10 percent of retail meat packages were case-ready meats just over a year ago, but that number has tripled and is expected to increase even more.

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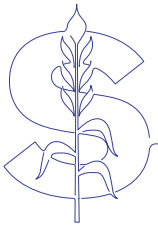

Reducing Phosphorus and Nitrogen in the Diets of Swine

Phosphorus and nitrogen are the major nutrients of concern for swine farms. K-State swine nutritionists continue to test and implement technology to reduce phosphorus and nitrogen excretion. K-State researchers conducted a series of experiments to reduce phosphorus levels in swine diets. The focus of those experiments was to determine the optimal phosphorus level for finishing pigs and the optimal level of phytase (an enzyme that reduces phosphorus excretion) to add to swine diets. As a result of the experiments, it is estimated that phosphorus excretion in swine will decrease by 30 percent as Kansas pork producers utilize these new swine diet formulations. In the area of nitrogen excretion, K-State swine researchers continue to test the use of higher levels of free amino acids to lower the crude protein and total nitrogen level in the diet. As a result, nitrogen excretion can be lowered by 25 percent to 40 percent depending on the phase of production. Initial results of the series of research trials hold great promise, though fine-tuning of the process is needed before full implementation on Kansas swine farms.

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Multiple Benefits Derive from Feeding Flaxseed to Cattle

Current studies show that adding flaxseed to cattle diets dramatically improves carcass value, strengthens the natural immunities of calves, and may enhance the fatty acid profile of beef. Flaxseed can be added to cattle diets either ground or as a processed oil. In addition to finding that flaxseed strengthens the immune systems of calves, which may require fewer antibiotics, the scientists found that it also improves marbling in beef products and increases carcass value, which is likely to mean more money for the cattle producer. In another study, when flaxseed was fed to finishing cattle, it increased omega-3 fats in their muscle tissues. Omega-3 fats are "the good fats"—they've been found to lower the risk of cardiovascular disease and stroke in humans.

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Beef Genetic Evaluation

The Kansas Bull Test program provides an avenue for bull producers to evaluate their cattle's genetics and to provide customers an opportunity to acquire those genetics. The role of K-State in the Kansas Bull Test has evolved for more than 30 years, and K-State continues to provide unbiased genetic and performance information to cattle producers and buyers. The Kansas Bull Test board of directors is made up of representatives from several Kansas beef breed organizations and past KBT customers. K-State Research and Extension personnel assist the board to carry out the rules and regulations of the test as well as collect and disseminate all information concerning the bulls. Bull calves are developed following Beef Improvement Federation guidelines at a commercial feeding facility near Tipton, Kan. Once the 112-day testing period is completed, bulls are ranked on growth potential to qualify for the annual spring sale. Only the top 70 percent of the bulls can qualify to make the sale, and they must pass a complete Breeding Soundness Examination before entering the sale ring at the annual bull sale held the first Wednesday of April at the Mitchell County Fairgrounds, Beloit. Normally, the bull sale will gross about $250,000 and send bulls to herds in Kansas and surrounding states. The Kansas Bull Test provides an opportunity for bull producers to evaluate and sell their bull-produced genetics regardless of the size of their ranch or facilities.

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Responding Rapidly to Diagnose Plant Problems

K-State is one of the first universities in the nation to offer Rapid Response Centers for plant, insect, and food problems. Specialists are available 40 hours a week to give rapid responses to county extension agents who receive questions on home and industry horticulture, food preparation, and food safety. A distance diagnostics system is in place for county agents to send digital pictures of a plant or insect by Internet to a specialist on campus to get a quick diagnosis of the problem and a recommended remedy. K-State is one of the first universities in the nation to offer such a service. The diagnostic labs on the K-State campus in entomology, horticulture, plant pathology, and the herbarium are providing the expertise for the program. They also are linked with experts across the nation and globe for their opinions on problems particularly puzzling. Distance diagnosis won't replace what K-State Research and Extension has been doing for years. Agents and other faculty continue to scout problems in fields and landscapes and talk to Kansans personally. When a quick response is needed, the distance diagnosis system can provide it quickly, which can often mean the difference between saving a plant or a crop or losing it.

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Homeland Security Grant of $900,000 Aids K-State Rapid Response Centers

K-State received $900,000 as part of the federal government's program to improve surveillance, early detection, and rapid response for plant pests and diseases. K-State already established Rapid Response Centers for quick diagnoses of potential problems in farm crops and horticultural plants. Kansas Livestock Commissioner George Teagarden said, "It's good for Kansas. It gives us some opportunties to do a number of things that we'd like to do to be better prepared." The money will be used to purchase equipment, hire personnel, and support research, including developing molecular techniques and cutting-edge diagnostic tools for use across laboratories. In addition to enhancing K-State's rapid diagnosis capabilities, K-State Research and Extension will be able to develop broader spectrum and more durable resistance in farm crops. Even if there are no terrorist attacks, these new capabilities will benefit society by helping to develop broader spectrum and more durable resistance in farm and horticultural crops.

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Mutant Rice Project May Help World Food Supply

Working with the International Rice Research Institute in the Philippines, K-State Research and Extension has helped develop 30,000 different mutant forms of rice in the last five years. The goal is to develop 40,000 mutants. Scientists from The Ohio State University, University of California-Davis, and Iowa State University also are part of the mutant gene project that received funding from a $500,000 National Science Foundation grant. Different genes serve different purposes, but scientists don't know what each gene does. When a gene is eliminated, the rice mutates. Scientists can then see what that gene used to do for the plant. The "deletion collection" will be a tool to allow researchers to find genes they want to work with, especially those that help plants fight off disease. Researchers hope the project will lead to better methods of turning on those genes earlier, or making them more efficient. If some genes don't help battle disease, researchers may find it helpful to turn them off. Scientists constantly need to engineer new plants that resist insects and disease. Each time a new pathogen-resistant gene is utilized, the pathogen eventually overcomes it, so a new one is needed. At stake is the world's food supply. Rice is the staple food for two-thirds of the world's population. Rice also is a good model for learning about other cereal grains, like wheat, maize and barley. Rice has a smaller genome compared to those other plants, which makes it easier to figure out the order of genes in the rice genome.

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Collaboration: Scientists at The Ohio State University, University of California-Davis, Iowa State University, and the Philippines.

K-State Wheat Varieties Preferred by Kansas Wheat Farmers

Wheat varieties developed by K-State Research and Extension totaled more than 80 percent of the planted acres in Kansas. For the 2002 crop, Jagger was the leading variety of wheat seeded in Kansas, accounting for 42.8 percent of the state's wheat acreage. The KSU variety 2137 ranked second. Karl improved to third. Wheat research is partially supported by funding from Kansas wheat producers through the Kansas Wheat Commission and certified seed producers through the Kansas Crop Improvement Association.

Contact: Allan Fritz, Agronomy, Telephone: 785-532-7245, FAX: 785-532-6094, E-mail: akf@ksu.edu or Joe Martin, KSU Agricultural Research Center–Hays, Telephone: 785-625-3425 (ext. 213), FAX: 785-623-4369, E-mail: jmartin@oznet.ksu.edu

How One Farm Couple Learned to Manage Risk Better

When Kent and Rebecca Ott wanted to learn about how to manage price risk and to effectively use markets in their farming operation, they turned to the Sedgwick County Research and Extension agents. The Otts took advantage of classes offered by agents to learn all they could about how markets work. They own a diversified grain production operation, including corn, grain sorghum, soybeans, and wheat. What they learned has enabled them to weather a long stretch of low commodity prices and keep their operation profitable. They found options and futures contracts could be very scary. Their conclusion: They found expert advice in that area to be very helpful. Others in the Wichita area who have a business problem can learn more about help available from the K-State Research and Extension Office's Web site at www.oznet.ksu.edu/sedgwick.

Contact: Steven Westfahl, Sedgwick County Research and Extension Office, Telephone: 316-722-7721, FAX: 316-722-7727, E-mail: swestfah@oznet.ksu.edu

Still Important—Research and Extension Field Days

It has been a tradition for K-State Research and Extension to hold field days across the state where anyone interested can learn about the latest advances in agriculture. For example, the 2002 Agronomy Farm Field Day in Manhattan (now called an Expo) provided demonstrations and talks on such topics as precision agriculture, soil profiles, wheat breeding, corn/grain sorghum comparison, soil compaction, and manure management. In addition to the Manhattan location, seven other experiment fields and two satellite locations are spread around the state. Crop variety and herbicide performance tests are conducted at all of those places. The fields also are important sites for nurseries to support plant-breeding programs in sorghum, wheat, alfalfa, soybeans, and canola. At most locations, studies are done on long-term cropping systems and the effects of crop rotation, tillage, fertilizations, and other management practices. Irrigation management and water-use efficiency work is conducted at three of the locations. The fields also play a key role in technology transfer.

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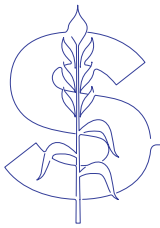


Plums Found to Kill Pathogens in Meat

K-State researchers have found that raw meats mixed with as little as three percent of plum extract are over 90 percent effective in suppressing the growth of such major food-borne pathogens as *E. coli O157:H7*, *salmonella*, *listeria*, *and staphylococcus*. In addition to suppressing pathogens, plum extract also can enhance the moistness of meat and increase its volume. Adding a plum mixture would be most useful where meat products are prepared at central locations and rewarmed at satellite kitchens. Future research will focus on determining if plum extracts can extend the shelf life of meats.

Contact: Daniel Fung, Animal Sciences and Industry, Telephone: 785-532-1208, FAX: 785-532-2461, E-mail: dfung@oznet.ksu.edu

Soybean-Sorghum Rotation Boosts Sorghum Yields

Two studies by K-State have documented specific yield benefits gained by planting soybeans as part of a sorghum-soybean rotation rather than keeping a field in continuous sorghum. A five-year study in northeast Kansas found a 17-bushel advantage per acre for sorghum after soybeans compared to continuous sorghum. An 18-year study in north central Kansas found a 23-bushel per acre advantage for sorghum in the soybean-sorghum rotation.

Contact: Mark Claassen, Agronomy–Harvey County Experiment Field, Telephone: 620-327-2547, E-mail: mclaasse@oznet.ksu.edu

Risk Management Workshops on Prices and Yields

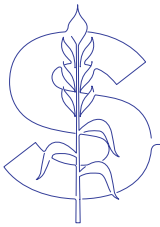
Growers identify prices and yields as major risks in their operations. K-State Research and Extension ag economists have been presenting workshops around the state designed to help growers price a crop before harvest using forward contracts, futures, options, and other pricing tools. Utilizing such information and combining it with crop insurance can reduce financial risks. Information on risk management also is available on a Web site, the KSU Risk Management Home Page at *www.agecon.ksu.edu/risk/*. This site receives more than 2,600 visitors each month. Also, Successful Farming's Web site is posting information from the KSU Web page, giving that information even wider exposure.

Contact: Art Barnaby, Agricultural Economics, Telephone: 785-532-1515, FAX: 785-532-6925, E-mail: abarnaby@agecon.ksu.edu

The Horticultural Food Crop Production Project

This project involves a number of horticultural investigations at the K-State Research and Extension centers in Olathe and Wichita. One example of the work involves developing a system of growing tomatoes that produces high yields of good quality tomatoes. Another example focuses on assessing the adaptation of different medicinal plants. The project recommends superior varieties or practices for commercial horticultural food crop producers or homeowners.

Contact: Edward (Ted) Carey, Horticulture–Olathe, Telephone: 785-532-6170, FAX: 785-532-6949, E-mail: tcarey@oznet.ksu.edu



Historical Research Publications Available on CD

Sixty years of research from the Kansas Agricultural Experiment Station—from 1888 to 1945—is available now on a set of four compact discs. The Harvest of Knowledge CD-ROM library contains the full text and illustrations of nearly all of the publications published by the Kansas Agricultural Experiment Station from pioneer days through the Depression and two world wars. It includes more than 24,000 pages of publications on crops, pasture, gardening, foods, weeds, insects, diseases, livestock, machinery, buildings, soils, natural resources, farm economics, and farm life.

The CD set costs $36.50 and can be ordered by e-mail at orderpub@lists.oznet.ksu.edu or from Kansas State University, Production Services, 24 Umberger Hall, Manhattan, KS 66506-3402.

Delivering High-Level Farm Management Information to Those Who Need It

Few producers can take several months, much less several years, to head to a university town and take classes amid planting and harvesting and everything in between. A new K-State program makes it easier for producers to learn new ways of managing their businesses—mostly in the comfort of their own homes and on their own schedules. The Management, Analysis, and Strategic Thinking (MAST) Program combines face-to-face workshops with state-of-the-art distance education techniques to deliver high-level farm management information to farmers and ranchers. After a two-day orientation session on the K-State campus, participants then learn through distance education methods from their personal computers at home, which is accomplished through learning modules that focus on farm management tools and their applications. Producers can work on lessons when time is available. Time also is built into the process for students to have online discussions with other participants and the instructors. After the modules are completed, MAST participants return to the K-State campus for a final program that emphasizes applying what they learned to their own operations. More information is available on the Web at *www.agecon.ksu.edu/mast/*

Contact: Clay Simons, Agricultural Economics, Telephone: 785-532-2743, FAX: 785-532-6925, E-mail: csimons@agecon.ksu.edu

Gene Research Leads to Greenbug Resistant Wheat

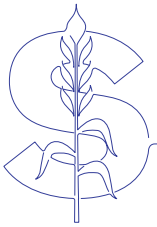
KSU scientists have located and characterized a gene from bread wheat that expresses resistance to greenbug. Wheat genotypes containing the gene were linked to molecular markers on the short arm of wheat chromosomes 7D and 7A. These results can increase wheat-breeding efficiency by approximately 30 percent by allowing the use of molecular markers to track greenbug resistance genes in wheat-breeding populations.

Contact: C. Michael Smith, Entomology, Telephone: 785-532-4700, FAX: 785-532-6232, E-mail: msmith@oznet.ksu.edu

Whole Farm Planning

K-State Research and Extension is reaching out to Kansas farmers by providing information on Whole Farm Planning, a process that takes into consideration the economic, social, and environmental factors involved in farming. According to some estimates, only about 30 percent of farmers have a clear idea of their break-even costs for their major market commodities and only five percent have done a recent calculation. Short-term profits will increase as farmers utilize Whole Farm Planning to determine how to decrease input expenses and increase returns through alternative and value-added marketing options. Long-term financial benefits will accrue to farmers who utilize the knowledge and techniques available to preserve water quality and improve soil quality. Social benefits can be realized by those who engage in Whole Farm Planning. Spouses begin to communicate about farm goals, life goals, and other shared values. Children and parents also are brought into the planning process. As Whole Farm Planning reaches more people, it can create awareness that the land is more than just an investment to hedge against inflation but also a living resource needed to sustain the future productivity of the heartland.

Contact: Rhonda Janke, Horticulture, Forestry, and Recreation Resources, Phone: 785-532-0409, FAX: 785-532-6949, E-mail: rjanke@oznet.ksu.edu



Finding a Natural Alternative to Pesticides in Stored Grain

K-State researchers are teaming with Dow Agro Sciences and the USDA Grain Marketing and Production Research Center to test the efficacy of Spinosad as a stored-grain protectant. Spinosad is a reduced-risk commercial pesticide that is naturally derived. Safer and effective alternatives to pesticides are needed because of insecticide resistance in stored-grain insects and because the 1996 Food Quality Protection Act has placed existing organophosphate grain protectants at risk of being eliminated. Three Kansas wheat producers are helping the researchers by providing farm bins for field efficacy trails. The ongoing research at K-State and the Grain Marketing Center is producing positive results for the control and management of stored-wheat insects by Spinosad.

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Collaboration: Kansas Wheat Commission, Dow AgroSciences, and Kansas farmers. For photos of the Spinosad experiments you can visit www.oznet.ksu.edu/grsc_subi under the "What's new" link.

The Kansas Locally Raised Food Directory

A new directory from the Kansas Center for Sustainable Agriculture and Alternative Crops will help farmers advertise their products to consumers. The online Kansas Locally Raised Foods Directory lists information about Kansas food producers and their products. Participants can register at no charge, and the directory is not limited to fruits and vegetables but also includes meat, poultry, dairy, grains, and baked products.

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The Benefits of Rangeland Management Research

Kansas produces about 1.5 million cows and heifers annually, with nearly one-tenth, or 150,000, of those breeding animals in the nine-county area surrounding the Agricultural Research Center—Hays. The economic impact of implementing complementary forage and forage grazing systems could save producers in that area from $3.5 million to $4 million annually on stored feed. Statewide, it could mean a $37 million savings in one month. K-State researchers are focusing on utilizing perennial cool-season grasses or winter small-grain cereals that provide fast, abundant vegetative growth for grazing purposes from September through April when native warm-season forages are dormant.

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New Product Developed at K-State Could Help Spur Demand for Lamb

Scientists with K-State Research and Extension have developed a precooked lamb product in curry sauce that can be stored in the refrigerator for up to 150 days and can be cooked in seven minutes in a microwave oven. Lamb is not popular with consumers, but this product could change that. A taste panel trial showed that the taste was "just fine." Few in the panel could tell the difference between lamb and beef they were served. The product is cut from the lamb shoulder, which is a part of the carcass that has been hard to market in the past. By using that cut, producers will get more money for lamb meat. Also, the lamb shoulder may be less expensive for consumers in addition to being tender, flavorful, and juicy.

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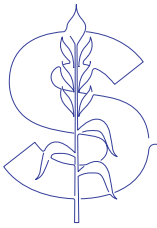

Experimenting with Plants in Outer Space

K-State researchers received a $600,000 grant from the National Aeronautics and Space Administration to study growing plants in space. The K-Staters are one of five research teams in the nation studying the potential to grow plants in environments without gravity. The work at K-State focuses on the behavior of water and air in soil under zero gravity or microgravity. The ultimate goal is to develop enough knowledge to do plant testing under a variety of conditions.

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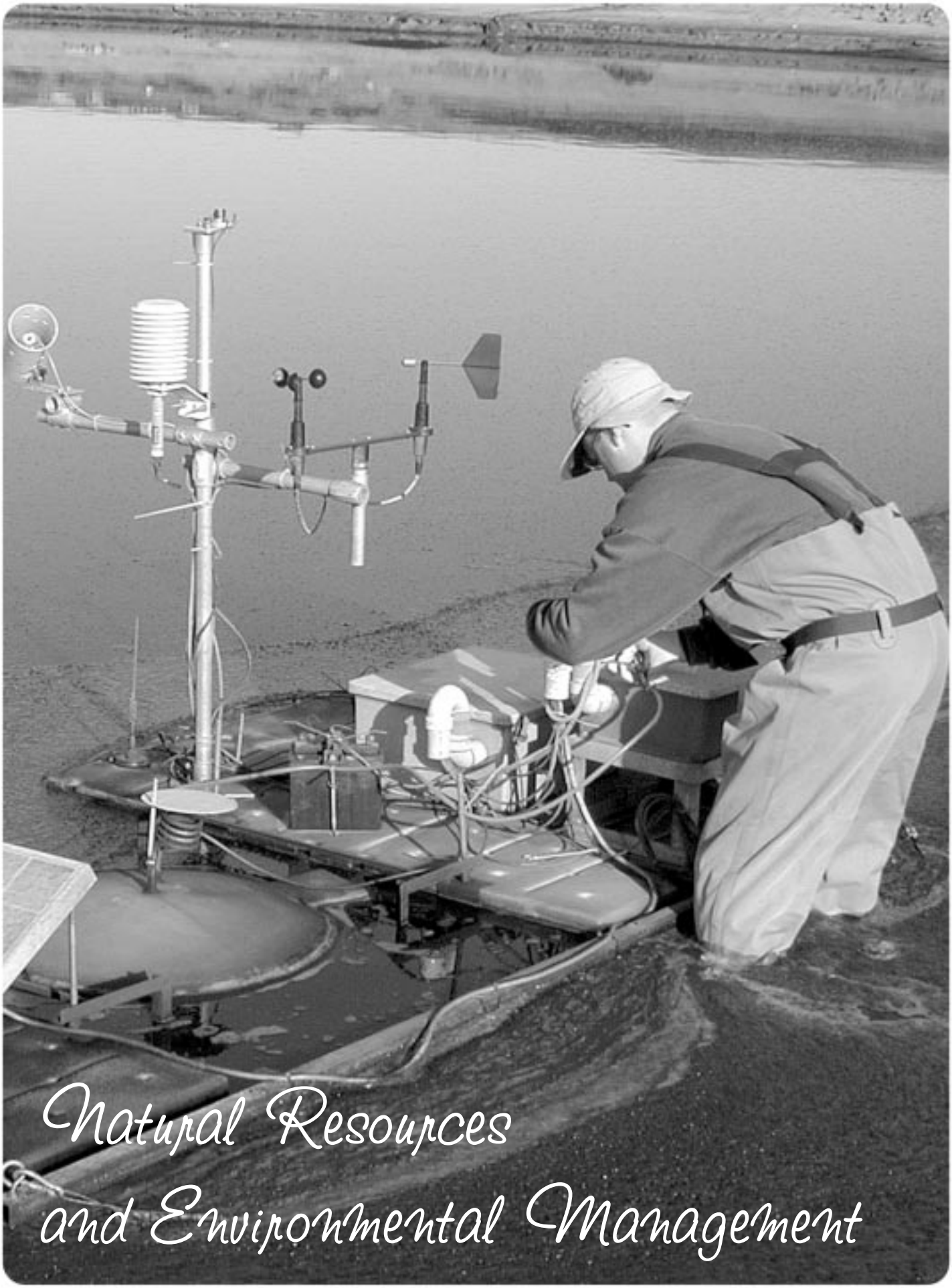
Kansas Crop Variety Testing

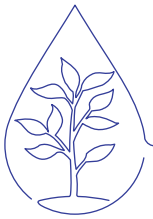
K-State Research and Extension conducts performance testing on such important Kansas crops as wheat, sorghum, corn, soybeans, alfalfa, and sunflowers. Testing is done around the state at K-State fields and centers and on farms of growers. The performance figures are summarized and published each year in reports of progress and electronically on the Web: *www.ksu.edu/kscpt/*. Farmers utilize the information because it can add value to their enterprises. For example, if wheat tests in western Kansas show a 202 kilogram per hectare advantage for a top-yielding hard white wheat compared to hard red varieties, then shifting only 5 percent of those acres to that variety would produce an additional $1.8 million in gross farm income for western Kansas.

Contact: Kraig Roozeboom, Agronomy, Telephone: 785-532-7251, FAX: 785-532-6094, E-mail: kroozebo@oznet.ksu.edu



Natural Resources and Environmental Management

Natural Resources and Environmental Management



Concern about the quality of the environment continues to guide K-State Research and Extension in developing programs that ensure quality and conservation of surface water and groundwater; promote community residential environmental management; generate systems for improved soil and air quality; and maintain plant diversity.

Water Quality Initiative Continues to Make Progress

In the mid-1990s, Kansas Gov. Bill Graves enlisted the help of K-State Research and Extension and groups from agriculture, industry, city governments, federal and state agencies, and the private sector to help improve the water in the state. The initiative united efforts of the private sector, agriculture, industry, state, and federal and local governments to protect and improve water quality. These groups worked together to fund research and implement activities, educate their constituencies through workshops and other efforts, and support effective change for water-quality improvements. Accomplishments have included:

Technical and financial assistance—Property owners received technical and financial assistance to address various environmental management practices. Local-level, incentive-based efforts, delivered through USDA-NRCS and the State Conservation Commission and local conservation districts, helped residents implement such water-quality protection practices as conservation tillage, nutrient management, pest management, terraces, and grade-stabilization structures. The Buffer Initiative offered an incentive to landowners to plant trees and restore riparian areas. Livestock waste management systems were improved in several locations, and practices were promoted to reduce cropland nonpoint source pollution.

Monitoring—K-State Research and Extension sampled water quality at specific locations in targeted watersheds during runoff events. This sampling provided a baseline for measuring improvement.

Research—K-State scientists focused on optimizing Best Management Practices to protect water quality through cropping practices and livestock waste management. Research directed at urban water quality included information on predicting water quality changes as development occurs and methods to reduce the impact.

Education and Information—K-State Research and Extension watershed specialists visited one-on-one with farmers about Best Management Practices.

Contact: William Hargrove, Kansas Center for Agricultural Resources and the Environment,
Telephone: 785-532-7103, FAX: 785-532-6563, E-mail: bhargrov@oznet.ksu.edu

An Example of How K-State Stays on Top of Current Issues

Shortly after the Kansas and Missouri rivers were designated as two of the four most endangered rivers in the nation because of pollution, K-State Research and Extension held a meeting for the news media to provide information on water quality and other conservation projects and issues at the university. The meeting coincided with Earth Day 2002. Topics ranged from Management Practices to Protect Water Quality to Livestock Waste Management and from Fecal Bacteria Contamination in Streams to Assisting Local Governments in Protecting Drinking Water. The news media toured K-State's Waste Management Center to learn how rural and urban areas can benefit from new university research, including composting for communities.

Contact: Pat Melgares, Communications, Telephone: 785-532-1160, FAX: 785-532-6458,
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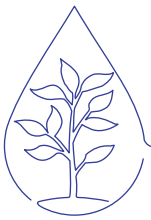

Investigating the Environmental Benefits of Carbon Sequestration

A $15 million federal grant—the largest in K-State history—has been received by K-State Research and Extension to study carbon sequestration, a process that could reduce global warming while also reducing soil erosion and water runoff. Carbon sequestration increases soil organic matter and reduces carbon dioxide in the air. It is good for the environment and good for crop production. K-State is leading the Consortium for Agricultural Soils Mitigation of Greenhouse Gases, an organization that is working to provide the tools and information needed to successfully implement soil carbon sequestration programs. K-State has been one of the nation's leaders in research on controlling soil carbon sequestration and greenhouse gas emission. It has been estimated that 20 percent or more of targeted emission reductions could be met by agricultural soil carbon sequestration. Other benefits of this technology are increased soil fertility, reductions in erosion, and increases in soil quality.

Contact: Charles Rice, Agronomy, Telephone: 785-532-7217, FAX: 785-532-6094,
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Immobilizing Soil Contaminants with Horseradish

A research project at K-State is focusing on using horseradish to clean up petroleum-based contaminants in soil. An enzyme from horseradish has been discovered that attacks phenols—acidic compounds found in pesticides, petroleum, and plastics. Adding the enzyme to soil speeds up the natural process of turning animal and plant residue into organic matter by causing toxic chemicals to bind to the soil and preventing them from seeping into groundwater.

Contact: Alok Bhandari, Civil Engineering, Telephone: 785-532-1578, FAX: 785-532-7717,
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Walking the Talk on Waste Management

For years, K-State Research and Extension extolled the virtues of recycling, composting, waste management, and Best Management Practices. To demonstrate these techniques, a Waste Management Learning Center was started north of campus. Livestock waste compost has advantages over other compost materials because it has a lower water content and is more stable, and its nutrients are released slowly. It's also environmentally friendly. The demonstration site is two miles north of the K-State campus with access to dairy, swine, and beef manure by-products. Citizens can visit the Center and see the application of the different methods and weigh the costs and benefits of each. Farmers can build a similar operation with existing equipment and without spending a lot of money. The site uses manure from the KSU dairy unit mixed with liquid from the swine unit. It is applied on university gardens and also offered to the public.

Contact: Pat Murphy, Biological and Agricultural Engineering,
Telephone: 785-532-2929,
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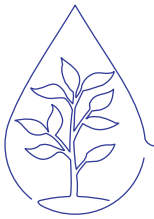
pmurphy@bae.ksu.edu

Wetlands Offer Wastewater Cleanup Alternative

Engineers with K-State Research and Extension are testing the suitability of wastewater treatment wetlands in Kansas, a technology already used extensively in states with warmer climates such as Tennessee, Kentucky, and Arkansas. The wetlands are fairly low-cost to build and maintain, and they can be retrofitted to such existing treatment systems as small wastewater municipal plants, rural residential septic systems, industrial wastewater systems, and small dairy or livestock operations. Eight experimental wetlands are being tested in east and southeast Kansas, four at residential sites and four at small dairies. The process involves sending water from a septic tank or anaerobic lagoon into treatment wetlands designed so that the water moves slowly through the system, giving plants time to process organic matter and nutrients and filter the water. The water plants detain any pathogenic microorganisms that then either die, are eaten by other organisms, or are irradiated by ultraviolet rays near the water surface. Any metals adhere to particles in the water and settle out.

Contact: Kyle Mankin, Biological and Agricultural Engineering, Telephone: 785-532-2911, FAX: 785-532-5825, E-mail: kmankin@ksu.edu



A Way to Use Less Water on Crops in Western Kansas

Because the Ogallala Aquifer is diminishing— it's the main source of water for irrigated crops in western Kansas—K-State scientists are looking at ways to decrease water use in that region. One study has focused on growing a crop with irrigation then following it with a dryland crop. Researchers alternated irrigation and dryland practices on the same acreage, and the average yield improvement in the alternating system has been about 10 percent compared to the overall average for continuous irrigated and dryland crops. The irrigation phase provided more residue to the soil, which aided in water storage and protected the soil from wind erosion. The conclusion: Producers and the environment would benefit by alternating irrigated and dryland crops to avoid the fallow sequence. That will give the most efficient use of limited irrigation water and limited precipitation.

Contact: Loyd Stone, Agronomy, Telephone: 785-532-5732, FAX: 785-532-6094, E-mail: lrstone@ksu.edu

Watershed Specialists Provide Local Assistance

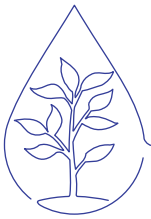
Since November 2000, K-State Research and Extension watershed specialists provided watershed management expertise and developed watershed educational programs throughout Kansas. The specialists are assigned to six watersheds: Upper Blue, Lower Arkansas, Lower Kansas, Upper Delaware, Upper Arkansas, and Marais des Cygnes. The watershed specialists work with landowners and farmers within the watersheds to develop action plans based on the concerns within the watersheds. The specialists strive to improve water quality through educational programs, including on-farm demonstrations, workshops, seminars, and other teaching methods.

Contact: William Hargrove, Kansas Center for Agricultural Resources and the Environment, Telephone: 785-532-7103, FAX: 785-532-6563, E-mail: bhargrov@oznet.ksu.edu

The Blue River Compact

The Kansas-Nebraska partnership, of which K-State Research and Extension is a part, effectively monitors water quality and promotes practices to prevent runoff of pesticides into the Big Blue River. The work is being conducted under the auspices of the two states' Big Blue River Compact. Water samples regularly are collected at 22 locations through the basin and analyzed for pesticide, nutrient, and bacterial levels. New sites are being added in Nebraska and Kansas in the upper tributaries (Upper Horseshoe Creek, Lower Horseshoe Creek, Big Indian Creek, and Turkey Creek). The monitoring will help narrow the search for the highest levels of loading. Numerous Best Management Practices are being put into place by both row crop and livestock producers, including many streamside vegetative buffers planted by landowners in both Nebraska and Kansas. Kansas and Nebraska Corn Growers and Grain Sorghum Producers associations and the Kansas and Nebraska Farm Bureau organizations have been active partners in the planning, development and implementation of this effort.

Contact: Daniel Devlin, Agronomy, Telephone: 785-532-5776, FAX: 785-532-6094, E-mail: ddevlin@oznet.ksu.edu



K-State Study Allays Fears About Leaking Lagoons

When a debate arose in south central Kansas in the late 1990s involving lagoons in the Equus Beds groundwater basin, county commissioners decided they needed more facts before making far-reaching decisions. They turned to K-State Research and Extension.

"I am 100 percent for water protection," said Gene Wendling, a livestock producer and Harvey County Commissioner. "When the issue arose, we wanted to have the argument fueled by facts, not emotion. That's when K-State got involved."

K-State scientists completed a four-year study in 2001 that provided information on the environmental impact of earthen waste lagoons that are commonly used to collect livestock or municipal waste. The study found that seepage rates were much lower than the previous state standard of one-fourth inch per day.

"The results of the study helped to educate people that lagoons were not leaking as much as originally thought," said Carolyn McGinn, Sedgwick County commissioner. "Some people without all of the information thought the pollutants leaked straight to the groundwater when that is not the case at all."

Kenny Meier, Harvey County commissioner, said he agreed with the results of the study. "The bottom line of the research helped to base regulations to a site-specific process rather than blanketing the entire state with the same qualifications," he noted.

Contact: Jay Ham, Agronomy, Telephone: 785-532-6119, FAX: 785-532-6094, E-mail: snafu@ksu.edu

Saving Precious Water—and Money—Is Goal of Mobile Irrigation Lab

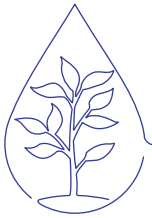
It's important for producers to make sure their irrigation systems are performing as intended, providing uniform moisture to the areas they are supposed to. To ensure that irrigation systems are working properly and to develop an educational program about effective irrigation and cropping systems in general, K-State Research and Extension faculty developed the Mobile Irrigation Lab. The Mobile Irrigation Lab team includes specialists with expertise in irrigation system design and management, crop water management, agronomic cropping systems, and computer programming and software development. The project coordinator stated: "To our knowledge there are no other educational programs like this." The lab cannot evaluate all irrigation systems in Kansas, so the goal is to develop and field test the technology to make it possible for private companies, consultants, cooperatives, and individuals to do this kind of testing. Information on the Mobile Irrigation Lab is available on the Web at *www.oznet.ksu.edu/mil*.

Contact: Gary Clark, Biological and Agricultural Engineering, Telephone: 785-532-2909, FAX: 785-532-5825, E-mail: gclark@bae.ksu.edu

Sustainable Ag Center Helps Farmers and Is Good for the Environment

The Kansas Center for Sustainable Agriculture and Alternative Crops assists farmers—especially those with small operations— to identify and develop markets for products by collecting and analyzing basic information on the Kansas food system and by providing opportunities for production and direct marketing. The K-State Research and Extension project also provides farmers with new research and information on organic products; energy-saving technology; investments that are less capital-intensive; and agricultural practices that reduce soil erosion and restore soil health. Alternative crops that represent new marketing opportunities for Kansas farmers include canola, safflower, dry beans, and cotton.

Contact: Jana Beckman, Kansas Center for Sustainable Agriculture and Alternative Crops, Telephone: 785-532-1440, FAX: 785-532-5780, E-mail: beckman@oznet.ksu.edu



Dairy Ecological Pollution Control Demonstrations

This project involves gathering on-site information on the nutrient removal rates of an ecological system in several dairy operations in Kansas. The project utilizes wetland cells and vegetative filters. The nutrients removed by the plants are harvested as forages for feed. The goal of the study is to provide understanding of developing livestock pollution control practices with controlled release rates, which will help producers to install control practices that do not require investments in irrigation equipment for periodic pumping of lagoons.

Contact: Joseph Harner, Biological and Agricultural Engineering, Telephone: 785-532-2930, FAX: 785-532-5825, E-mail: jharner@bae.ksu.edu

Collaboration: Kansas Department of Health and Environment, Kansas State Conservation Commission, USDA, Natural Resource and Conservation Service, Kansas Forest Service, Kansas Department of Agriculture, Kansas Department of Wildlife and Parks, and U.S. Fish and Game.

The Importance of Subsurface Drip Irrigation

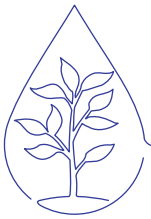
K-State has been a pioneer in the use of Subsurface Drip Irrigation (SDI), which is a method of delivering water to crop roots at small emission points from a series of plastic lines spaced between crop rows. It allows producers to use wastewater in their irrigation systems without the odor or risk of human contact or drift because it is applied under the soil. The value of annual water savings associated with widespread adoption of SDI on irrigated areas in western Kansas has been estimated to range between $175 million to $350 million. The SDI Web site *www.oznet.ksu.edu/sdi* has had more than 13,000 page views by more than 4,000 visitors from 44 different countries.

Contact: Freddie Lamm, KSU Northwest Research-Extension Center, Telephone: 785-462-6281 (Ext. 208), FAX: 785-462-2315, E-mail: flamm@oznet.ksu.edu

Management of Konza Prairie Biological Station

Research at the Konza Prairie, the premier site for prairie research in North America, continues to provide a strong base of scientific information to guide regional range management and agricultural and land-use decisions that enhance the conservation, productivity, and sustainability of rangeland ecosystems. For example, survey and satellite mapping were completed and field experiments were conducted to assess effects of grassland management practices and control methods on the population dynamics of exotic plant species. Another project involved conducting on-site K-12 education and teacher training programs in grassland ecology, management, and conservation. Nearly 3,800 persons participated. This community education project enhances science education in Kansas schools and public understanding and appreciation of agricultural and natural resources.

Contact: David Hartnett, Biology, Telephone: 785-532-5925, FAX: 785-532-6653,
E-mail: dchart@ksu.edu



The National Atmosphere Deposition Program

This program entails weekly collection and chemical analyses of wet deposition at the Konza Prairie and more than 200 other sites nationwide as part of the National Trends Network. Atmospheric inputs of nutrients can negatively impact productivity and structure of grassland ecosystems. Monitoring these inputs is critical for the management of grassland ecosystems because they provide a strong economic base in the livestock industry in Kansas. A long-term record of rainfall and its effect is valuable in identifying changes in nutrient inputs. This program has been in place on the Konza Prairie for 18 years.

Contact: Mary Knapp, Communications, Telephone: 785-532-7019, FAX: 785-532-6487,
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Using Different Tillage Practices to Reduce Herbicide Runoff Losses

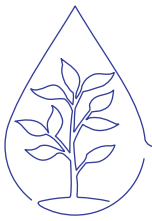
Several studies have shown that when recommended levels of herbicides are applied up to 5 percent of the amount applied may be lost. Soil surface condition may be controlled using different tillage practices to reduce runoff losses. K-State has been a national leader in conservation tillage, which leaves some or all of the residue from the previous year's crop on the soil surface. It effectively protects soil against erosion and is one recommendation being made to decrease runoff losses of herbicide. Another recommendation to reduce herbicide runoff is herbicide management.

Contact: Daniel Devlin, Agronomy,
Telephone: 785-532-5776,
FAX: 785-532-6094,
E-mail:
ddevlin@oznet.ksu.edu

Reducing Water and Pesticide Use in Turfgrass

This research involves evaluating methods of converting the cool-season turfgrass perennial rye to seeded zoysia at golf courses and to reduce fungicide use on creeping bent grass putting greens. Warm-season grasses such as zoysia require up to 40 percent less water and less than one-half the pesticide inputs compared to cool-season grasses. The effectiveness of several methods is being tested to convert cool-season turf to seeded zoysia. One effective method involved glyphosate application. It eliminated rye grass and provided over 75 percent zoysia coverage by the end of the first year and complete coverage by the end of June of the second year. In a separate test, dollar spot disease in creeping bent grass golf greens was reduced by 40 percent using a nonfungicidal plant defense activator.

Contact: Jack Fry, Horticulture, Forestry and Recreation Resources,
Telephone: 785-532-1430, FAX: 785-532-6949, E-mail: jfry@oznet.ksu.edu



Monitoring Surface Water to Understand Contamination in a River Basin

To better understand sources and levels of contamination of surface water in the Kansas Lower Republication River Basin, a surface water-monitoring program has been conducted. Water samples are collected from the point of entry of surface water at the Nebraska border to the point of exit at the Missouri border. Local, state, and federal agencies have been very interested in this project. The results will show 1. Which watersheds contribute heavier contaminate loads to surface water; 2. Seasonal patterns of contaminate loss; and 3. How serious the water problems are in surface water. The results of this project will show agencies, private groups, and K-State where to focus their future water-quality efforts.

Contact: Phillip Barnes, Biological and Agricultural Engineering, Telephone: 785-532-2921,
FAX: 785-532-5825, E-mail: lbarnes@ksu.edu

A Program that Helps Kansans with Wildlife Problems

K-State Research and Extension has had a wildlife damage control program for many years. The effort helps Kansans with wildlife problems learn effective ways to resolve them. The director of the program provides publications and newsletters; teaching clinics and workshops; a free-access Web site; and advice to county extension agents on how to help local citizens. The job requires only that he offer practical, research-based information. He neither makes nor enforces any laws. He doesn't compete with pest-control firms or state agencies. He tries to support both Kansans and Kansas wildlife.

Contact: Charlie Lee, Animal Sciences and Industry,
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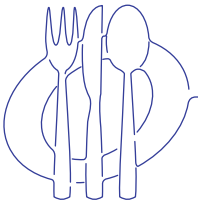
E-mail: clee@oznet.ksu.edu


Food, Nutrition,
Health, and Safety

Food, Nutrition, Health, And Safety



K-State Research and Extension is a national leader in food-safety programs. K-State scientists and educators are focusing on developing and promoting a safe food supply from production to consumption; promoting healthier and safer lives; and developing new and appealing food products.

Food Science Institute Established

A Food Science Institute has been created to bring together all of the current food science expertise at K-State. Combining resources in education, research, and extension will improve the coordination, visibility, and capacity of KSU food science programs.

The Institute will build on the university's outstanding reputation in food sciences. K-State's meat and poultry programs in the Department of Animal Sciences and Industry were rated third best in the nation by Meat and Poultry magazine.

The Food Science Institute also offers a variety of academic programs through various KSU departments and by distance education in the Division of Continuing Education. A recent survey by the Institute of Food Technologists rated K-State's food science distance education program as the most comprehensive in the nation.

Contact: Curtis Kastner, Food Science Institute, Telephone: 785-532-2202, FAX: 785-532-6035, E-mail: foodsci@k-state.edu

New K-State Project to Help Disabled Farmers

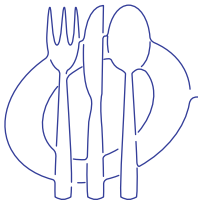
Agriculture is the most hazardous industry in Kansas, with an average of almost 28,000 nonfatal farm injuries each year sustained by farm workers 16 and over. Nearly 9,000 farmers with disabilities are working on Kansas farms. About 23 youth are injured on Kansas farms every day. K-State received a $590,982 USDA grant to initiate the Kansas AgrAbility program to help farmers, their families, and farm workers with disabilities. The program provides information, resources, and a variety of services to Kansans who have become disabled while engaged in production agriculture. It speeds up assistance to the disabled by coordinating services and involves people already working in agriculture who understand the needs of farmers. Farmers can request assistance even without a medically diagnosed disability. The Kansas AgrAbility project is available to all farmers through the Assistive Technology for Kansans toll-free number 1-800-KAN DO IT (I-800-526-3648). Telephone calls are routed to one of five regional sites in Kansas.

Contact: John Slocombe, Biological and Agricultural Engineering, Telephone: 785-532-2906, FAX: 785-532-5825, E-mail: jslocomb@bae.ksu.edu

New Drink Combines the Best of Juice and Milk

NutriJoy and K-State have developed a new drink that combines milk and fruit juice with extra calcium. Trademarked as Cal-C, the beverage is sold in a 20-ounce bottle with the flavors orange-tangerine, strawberry-kiwi, peach-mango, and cranberry-raspberry. The drink combines the flavor and vitamins of juice with the nutrients of milk. NutriJoy is a company started by Mid-American Commercialization Corp. in Manhattan. Two years ago Procter & Gamble donated patented nutritional beverage technologies to the Mid-American Commercialization Corp. Procter & Gamble's process allows milk and juice to remain in a stable form for a long time. Though NutriJoy is a separate company from K-State, the futures of both are intertwined. Through its Research Foundation, K-State is a shareholder in the company and will profit financially if Cal-C succeeds.

Contact: Denis Medeiros, Human Nutrition, Telephone: 785-532-0150, FAX: 785-532-3132, E-mail: medeiros@ksu.edu



New Test Quickly Diagnoses Rotavirus

K-State veterinary medicine researchers have developed a fast, accurate, easy-to-use test to diagnose rotavirus, a sometimes-deadly cause of diarrhea in children and newborn babies. Rotavirus is the world's most common cause of diarrhea in young children. The test also can be used on calves affected by rotavirus. The K-State test is done on a disposable instrument about half the size of a credit card. After a drop of diarrhea is dropped on it, a line will appear on the device if the sample has the virus. No other instruments are needed.

Contact: Sanjay Kapil, Diagnostic Medicine/Pathobiology, Telephone: 785-532-4457, FAX: 785-532-4039, E-mail: kapil@vet.ksu.edu

Finding an Improved Method of Diagnosis for Disease from Ticks

A K-State molecular biologist is researching an improved method to detect ehrlichiosis, a disease that can be transmitted by ticks to both humans and dogs. Currently, the five pathogens that cause ehrlichiosis must be tested individually to diagnose ehrlichiosis infections. The K-State project is focusing on a molecular test that identifies all five pathogens, resulting in faster and more accurate diagnosis and reduced costs.

Contact: Roman R. Ganta, Diagnostic Medicine/Pathobiology, Telephone: 785-532-4612, FAX: 785-532-4039, E-mail: rganta@vet.ksu.edu

Bringing Dentists and Hygienists to Children Who Need Them

Dentists and hygienists utilizing the Colgate Bright Smiles, Bright Futures van provided free dental screenings to 1,682 youth at six elementary schools in Topeka. This was a collaborative effort of community partners, volunteers, Stormont Vail Foundation, and K-State Research and Extension in Shawnee County. They found that 41 percent of the students had fair to poor oral hygiene. Twenty-one percent of them had at least mild dental problems that included a recommendation of visiting a dentist within a month. Nearly 130 students had severe or emergency dental needs, including large cavities the size of a small green pea, gingivitis, chronic abscesses, acute oral infection, insufficient number of teeth for mastication, injuries, or painful conditions.

Contact: Cindy Evans, Shawnee County Research and Extension Office, Telephone: 785-232-0062, FAX: 785-232-0093, E-mail: cevans@oznet.ksu.edu

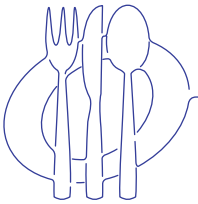
Collaboration: Hill's Pet Nutrition; Stormont Vail Foundation; volunteer dentists and dental hygienists; the Preventive Health Action Team organized contact with schools, parents, and follow-up efforts.

Nutrition Program Helps Families Stretch Food Dollars

The K-State Research and Extension Family Nutrition Program teaches low-income persons—from youth to older adults—how to choose and prepare nutritious meals on a limited budget, how to handle food safely, and how to balance healthy eating practices with physical activity. The program brings nutrition information to people in 84 Kansas counties through a network of county agents who work with Head Start; the WIC (Women, Infants, Children) program; shelters; and other agencies that focus on those struggling financially. When families eat better, they are healthier and have fewer illnesses. Children from those families perform better in school and are better prepared to live productive adult lives.

Contact: Karen Hudson, Human Nutrition, Telephone: 785-532-0177, FAX: 785-532-1674, E-mail: hudson@humec.ksu.edu

Collaboration: USDA and the Kansas Department of Social and Rehabilitation Services (SRS)



Kids a Cookin'

The K-State Department of Communications has been working with the Family Nutrition Program to develop, produce, and market Kids a Cookin', a series of weekly cooking programs for youth to be shown on Kansas television stations. Each program is geared toward teaching basic cooking skills, basic nutrition, and healthy food choices to children and parents of limited-income families. A special feature of the project is the inclusion of Spanish language translations in the videos.

Contact: Ron Frank, Communications–TV Unit, Telephone: 785-532-7692, FAX: 785-532-7699, E-mail: rfrank@oznet.ksu.edu

Serving Safe Food Program (SERVSAFE)

SERVSAFE is a component of the overall statewide K-State Research and Extension interdisciplinary farm-to-table food safety effort. It helps restaurant and foodservice managers to become certified in safe food handling and sanitation. A collaborative program with the Kansas Department of Health and Environment, it is required by many national food operations such as McDonald's Restaurants. Participants learn the principles and practices of food safety in foodservice establishments, including food safety hazards; how to serve food safely; the safe food handler; Hazard Analysis and Critical Control Point or HACCP; keeping food safe from the time it is purchased and through preparation and service; and maintaining sanitary facilities and equipment.

Contact: Karen Penner, Animal Sciences and Industry, Telephone: 785-532-1672, FAX: 785-532-2461, E-mail: kpenner@oznet.ksu.edu

Testing a Foam that Kills Foodborne Pathogens

K-State Research and Extension scientists are testing a new anthrax-killing foam product developed by Sandia National Laboratories in Albuquerque, N.M., for application in the food and agriculture sectors. The tests focus on killing such foodborne pathogens as *E. coli O157:H7*, *salmonella*, *listeria*, *staphylococcus*, and *pseudomonas* (a spoilage organism) that may persist on food-processing equipment. Sandia Labs developed the foam to decontaminate military equipment that might be exposed to various biological warfare agents.

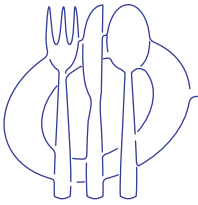
Contact: Randall Phebus, Animal Sciences and Industry, Telephone: 785-532-1215, FAX: 785-532-2461, E-mail: rphebus@oznet.ksu.edu

Improving Nutritional Outcomes in Rural Homebound Older Adults

A recent grant provided the opportunity to expand K-State Research and Extension's outreach to frail older Kansans. In collaboration with the Kansas North Central-Flint Hills Area Agency on Aging, K-State Research and Extension provided in-home nutrition information to older adults who reside in rural areas and receive home-delivered meals. Most of this population currently does not receive any nutrition education. Nutrition education materials were designed to help homebound older adults improve their food intake and nutritional well-being necessary to maintain health. In a 2000 survey, older adults ranked the cost of food and maintenance of a healthy diet as their third and fourth most significant concerns. Eighty-eight percent of older adults who receive home-delivered meals reported in another survey that the meals helped maintain their independence, security, and dignity. The goals of this pilot project were to develop a program that would: 1) investigate the effectiveness of nutrition messages to promote healthy nutritional practices and reduce nutritional risk in a small population of women living alone who receive home-delivered meals, and 2) establish a cost-effective method to integrate delivery of the nutrition information with the delivery of home-delivered meals. After receiving nutrition education materials last fall, 70 percent of the women participating indicated they had made specific dietary changes toward recommended practices, intended to start making changes in the next few weeks or months, or were already following healthful nutrition behaviors. Responses included: "I started drinking more juice." "I started keeping two water bottles next to my chair, and I plan to keep doing that." "Now I store fruits and vegetables where I can see them." "I have started to stay away from pastries." and "I would like to hear more about what good things foods do for the body." This partnership resulted in reduced nutritional risk and encouraged positive change in nutrition practices by providing homebound older adults with nutrition information materials targeted to their interest and need.

Contact: Mary Meck Higgins, Human Nutrition, Telephone: 785-532-1671, FAX: 785-532-1678, E-mail: higgins@humec.ksu.edu

Collaboration: USDA, National Policy and Resource Center on Nutrition and Aging, Kansas North Central-Flint Hills Area Agency on Aging.



Be a Book Cook

This program has helped parents learn to combine reading and cooking to help their children develop early reading and math skills, eye-hand coordination, teamwork, and a sense of accomplishment. Some 377 families and 1139 family members have participated in Be a Book Cook programs that target children ages 3 to 6. This program has received national recognition.

Contact: Laurie Chandler, Shawnee County Research and Extension, Telephone: 785-232-0062, FAX: 785-232-0093, E-mail: lchandle@oznet.ksu.edu, Web site: www.oznet.ksu.edu/shawnee

Collaboration: Topeka and Shawnee County Library; USD 501 Parents as Teachers and Highland Park High School; Kiwanis; Success by 6.

Finding a Safer Way to Package Meats

K-State Research and Extension has been working with Stork RMS Protecon Corp. of Gainesville, Ga., and Steris Corp. of Menton, Ohio, to develop a steam pasteurization unit that can eliminate any recontamination that has occurred during packaging. The Stork unit is a new condensing steam pasteurization technology developed in conjunction with a Steris and KSU designed clean-room environment.

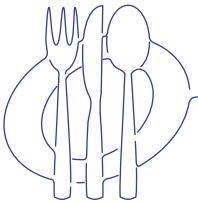
Contact: Randall Phebus, Animal Sciences and Industry, Telephone: 785-532-1215, FAX: 785-532-2461, E-mail: rphebus@oznet.ksu.edu

Expanded Food and Nutrition Education Program

K-State Research and Extension makes a difference in the lives of Kansas families because of its research-based information and because of local response to county needs. Low-income families with children can learn through the Expanded Food and Nutrition Education Program (EFNEP) to develop skills and attitudes needed to improve their diets. EFNEP in Shawnee County participated in a cost-benefit study to measure program benefits. The study found that for every $1 spent on EFNEP, $8.82 will be saved on future health-care costs. In 2001, EFNEP saved Shawnee County $1,300,000. A personal story: an inmate at the Topeka Correctional Facility reported because of participation in EFNEP nutrition lessons she is drinking more water, milk, and juice and has stopped drinking three to four cans of pop each day. She also has sent recipes and nutrition information home to family members.

Contact: Sandy Procter, Human Nutrition, Telephone: 785-532-1675, FAX: 785-532-1674, E-mail: procter@humec.ksu.edu

Collaboration: USDA, WIC (Women, Infants, and Children) agencies, Head Start programs, and numerous other agencies in Kansas.



EFNEP and FNP Promotes Benefits of Breastfeeding

The Expanded Food and Nutrition Education Program (EFNEP) and Family Nutrition Program (FNP) in partnership with the Kaw Area (Topeka) Breastfeeding Coalition sponsored a Breastfeeding Celebration. Breast milk is the perfect food for babies. Breastfed babies have fewer cases of ear infections, diarrhea, rashes, and allergies, which means fewer trips to physicians. Breastfeeding saves $321 to $474 in medical expenses during a baby's first year and $1,500 to $3,000 in formula costs. The American Academy of Pediatrics recommends that mothers breastfeed their infants for at least the first year of life. A personal story: A mother of a two-week old who won a breast pump at the Breastfeeding Celebration said she plans to breastfeed her child for at least a year. With her other children, she stopped breastfeeding when she returned to work because she did not know of other options. She visited with her boss, and he supported her decision, allowing her time to pump at work.

Contact: Laurie Chandler, Shawnee County Research and Extension Office, Telephone: 785-232-0062, FAX: 785-232-0093, E-mail: lchandle@oznet.ksu.edu

Collaboration: Stormont-Vail Healthcare; St. Francis Hospital and Medical Center; Shawnee County Health Agency; La Leche League; and Parents as Teachers.

Part of the War on Terror—Protecting the Nation's Food Supply

The United States Department of Agriculture granted $3 million to K-State to establish a National Agriculture Biosecurity Center. The grant was authorized in the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. U.S. Sen. Pat Roberts, who pushed for the grant, said "Kansas State has the resources, the personnel, and the experience to lead the critical national effort and deter acts of agroterrorism." K-State will team with Texas A&M and Purdue universities to work on evaluating disposal of potentially contaminated animal carcasses in case of an outbreak; to assess execution, management, and effectiveness of current agroterrorism exercises; and to analyze ways that agricultural pathogens might enter the country.

Contact: Curtis Kastner, Food Science Institute, Telephone: 785-532-1234, FAX: 785-532-6035, E-mail: foodsci@k-state.edu

Three Studies Focus on Fighting Obesity in Youth

With the help of grants totaling $227,000 from the Sunflower Foundation: Health Care for Kansans, K-State Research and Extension is developing, testing, and measuring the success of three programs designed to prevent obesity in children and adolescents.

1. The first grant involves developing a tool to evaluate the effectiveness of obesity prevention projects. It features a 16-item checklist targeted toward young adults. Project leaders will assess 1,000 youngsters with different ranges of eating behaviors in order to determine those with healthy behaviors and those without.

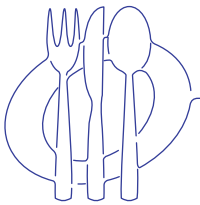
Contact: Barbara Lohse Knous, Human Nutrition, Telephone: 785-532-0154, FAX: 785-532-1674, E-mail: blknous@oznet.ksu.edu

2. The second program supports the Kansas Nutrition Network and its efforts to provide basic nutrition information to low-income families. Parents who have a better knowledge of basic nutrition tend to have children who fit normal weight patterns. An example of this effort is to send K-State Research and Extension personnel into communities to work with Head Start and WIC (Women, Infants, Children) to educate parents and child-care providers on good nutrition

Contact: Karen Fitzgerald, Kansas Nutrition Network, Telephone: 316-262-7636, FAX: 316-264-9965, E-mail: knn@feist.com

3. The third grant targets adolescent obesity by looking at environmental factors. It isn't enough to look at individual behavior only. The problem of childhood obesity has been growing since the 1980s and can be traced to outside factors such as super-sized food servings, for example, or communities without sufficient facilities to support physical activities. This is a community-based pilot project that identifies families with adolescents in several community groups in Wichita. Mentors from the health community work with the groups to focus on fruit and vegetable consumption and moderate physical activity and to determine what can be changed in the participants' environments to help them to be healthier.

Contact: Judy Johnston, Community Health, Telephone: 316-293-1861, FAX: 785-532-7733, E-mail: jjohnsto@ kumc.edu



Making Homes Safer and Healthier Places to Live

Home*A*Syst is a K-State Research and Extension program that helps people assess how home management can add to or subtract from the health and safety of their family. As part of a national effort, it involves engineers and safety specialists who cover everything from indoor air quality to storm water drainage. For example, Home*A*Syst helps to identify and promote awareness of hazardous household products. Close to 90 percent of the approximately 2.1 million toxic exposures reported each year happen in or around a home.

Contact: Barbara Johnson, Extension Energy Service, Telephone: 785-532-6026, FAX: 785-532-6952, E-mail: barblj@oznet.ksu.edu

Study Focuses on Foodservice at Retirement Homes

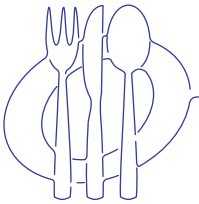
A study being done by K-State Research and Extension is focusing on how to make food more appealing to retirement community residents. Food is important to the quality of life of residents. If they aren't getting proper nutrients, they could lose weight, and those with chronic conditions could get worse. Eating also is an event, a way for residents to socialize. The researchers are identifying the residents' preferences for food and service quality, then sharing those preferences with foodservice directors and administrators of retirement communities. For example, do they want something different for breakfast, or lunch, or dinner? Do they want a buffet or wait staff? That kind of information has not been available in the research literature, so this study is breaking new ground.

Contact: Carol Shanklin, Hotel, Restaurant, Institution Management, and Dietetics, Telephone: 785-532-2206, FAX: 785-532-5522, E-mail: shanklin@humec.ksu.edu

Promoting Physical Fitness through the Walk Kansas Program

Physical inactivity is a serious health risk factor. To reduce that risk, an individual needs to complete 30 minutes of moderate physical activity most days of the week, but in Kansas about four out of five people do not meet that requirement, and one in five adults are obese. K-State Research and Extension developed Walk Kansas, a science-based, physical-activity promotion program that helps Kansans initiate and maintain a regular regime of physical activity. The program utilizes county task forces that promote the Walk Kansas program. Teams of six participate, and the goal of each team is to exercise the equivalent of walking across Kansas. To reach that goal each team member has to do moderate physical activity for 30 minutes a day, five days a week, during the eight-week program. Almost 7,000 adult Kansans participated in 2002. Afterward, participants said they felt more confident about being active and they enjoyed the physical activity. Seventy-five percent of the 7,000 participants responded that this was the first time they had participated in a K-State Research and Extension program.

Contact: Michael H. Bradshaw, School of Family Studies and Human Services, Telephone: 785-532-5773, FAX: 785-532-6969, E-mail: mbradsha@humec.ksu.edu



Collaborative Project Leads to New Food Safety System

Farmland National Beef, a leading food safety innovator, teamed with K-State Research and Extension to develop the BioLogic Food Safety System. This system organizes beef processing facilities into five zones with specially developed protocols for managing food safety in those zones and preventing microbial contamination. Regularly conducted tests and evaluations of the BioLogic Food Safety System take place in each zone and involve employees and their clothing, processing equipment, and air. Any area with an elevated reading is immediately isolated and treated with a scientifically engineered BioLogic protocol. Farmland National Beef Packing Company of Kansas City, Mo., is the only major beef packing company fully owned by producers. Its owners are members of U.S. Premium Beef, a producer-owned, beef-marketing cooperative, and Farmland Industries, the largest farmer-owned cooperative in North America. Farmland National Beef has operations in Liberal and Dodge City. The company markets fresh beef, boxed beef, and beef by-products for domestic and international markets.

Contact: Randall Phebus, Animal Sciences and Industry, Telephone: 785-532-1215, FAX: 785-532-2461, E-mail: rphebus@oznet.ksu.edu

Collaboration: Famland National Beef Packing Company

Early Warning System Will Check for Emerging Animal Diseases

K-State has started an early warning project that will provide a two-day head start on discovering new animal disease. It also will be useful for tracking disease trends. It also should enable a more rapid response to any animal disease purposely introduced by terrorists. For something like foot-and-mouth disease, two days could mean the difference between containing it and catastrophe. Called Rapid Syndrome Validation Project–Animals, it's adopted from the Sandia National Laboratory that originated it to track human health problems. The initial efforts will focus on feedlot operations in Kansas because of the economic importance of that industry to the state. In addition, data for that industry will be easier to collect and interpret because of the high animal density and the relatively constant numbers of animals in a feedlot setting. The system will eventually be adapted to cow-calf and stocker operations, swine finishing, and other livestock operations.

Contact: Jan Sargeant, Food Animal Health and Management Center, Telephone: 785-532-4203, FAX: 785-532-4288, E-mail: sargeant@vet.ksu.edu

Youth, Family, and Community Health

Youth, Family, and Community Development

The complex issues of today require new perspectives and skills. K-State Research and Extension provides them by helping to build strong, healthy communities; improve parenting skills and family relationships; prepare youth through 4-H and other programs to be responsible citizens; balance demands of work, family, community, and time for self; and develop consumer and financial management skills.

Helping to Make Marriages the Best They Can Be

Couples contemplating marriage in two Kansas counties—Clay and Pottawatomie—were offered opportunities to participate in free four-week premarital enrichment groups. Sponsored by the Kansas Marital Preservation Project of K-State Research and Extension, the group sessions were conducted by marriage and family therapy interns from the K-State Family Center. They emphasized ways to help couples plan for a healthy marriage before they say "I do." The long-term goal of the project is to activate and organize networks of community resources to promote marital stability and quality. Increased participation in such programs is expected to contribute to the well being of couples and families.

Contact: Mark White, School of Family Studies and Human Services, Telephone: 785-532-1487, FAX: 785-532-5505, E-mail: mwhite@humec.ksu.edu

Monitoring Retail Activity in Kansas

Trade Pull Factors produced by K-State Research and Extension estimate the relative strength of the retail community in every county and in many cities across Kansas. Pull Factors are used by big businesses such as the McDonald's Corporation and by chambers of commerce in small cities like Columbus. Businesses use the data to determine the relative strength of the retail community in markets across Kansas. Community groups monitor the data to gauge the performance and overall health of the local business environment. The Trade Pull Factor reports are sent to all county K-State Research and Extension offices, small business development centers, certified development companies, and field staff of the Department of Commerce and Housing.

Contact: David Darling, Community Economic Development, Telephone: 785-532-1512, FAX: 785-532-6925, E-mail: ddarling@agecon.ksu.edu

Collaboration: U.S. Department of Commerce and Kansas Department of Commerce and Housing.

Web Site Aids Communities in Economic Development

Current information for community leaders and others interested in building and maintaining a healthy economy is available on the World Wide Web at *www.agecon.ksu.edu/ddarling*. The site includes Community Development Study Reports as well as newsletters, programs, bulletins, and other resources available through K-State Research and Extension.

Contact: David Darling, Community Economic Development, Telephone: 785-532-1512, FAX: 785-532-6925, E-mail: ddarling@agecon.ksu.edu

Family Financial Programming Impacts

Money management programming is available in many Kansas counties for men and women of all ages, including high school students, senior citizens, and those with limited incomes. One example of K-State Research and Extension family resource management in Sedgwick County involved designing and implementing a Master Money Managers program to help families determine the status of their finances, set goals for the future, manage risk, and find professional financial help. Another program in Douglas County helped families with financial decision-making. Parents learned about basic budgeting, needs versus wants, and use and abuse of credit. Families in the program also used a computer program to pay down debts and save money on loan interest.

Contact: Marilyn Toellner, Sedgwick County Research and Extension Office, Telephone: 316-722-7721, FAX: 316-722-7727, E-mail: mtoellne@oznet.ksu.edu

Extension InfoLine

Want to know about activities for youths, making meat safer, or making your home more energy efficient? In an example of bi-state cooperation, K-State Research and Extension is working with Lincoln University of Missouri Outreach and Extension to provide an audio text system called Extension InfoLine to the residents of the Kansas City metropolitan area. Topics include gardening and horticulture; family and parenting issues; food preparation and preservation; youth activities; agriculture; community development, and many others. Faxed copies of the messages also are available. The service provides pre-recorded information to the public through telephone access. It is formatted in one- to two-minute messages on a variety of topics available 24 hours and free of charge. The counties participating in this collaborative effort are Clay, Jackson, and Platte in Missouri and Johnson, Leavenworth, and Wyandotte in Kansas. The Extension InfoLine number is 913-393-1913.

Contact: Johnson County Research and Extension Office, Telephone: 913-764-6300, FAX: 913-764-6305

Leadership Program Focuses on Global Agricultural Issues

Agricultural leaders and community leaders in Kansas face many challenges as well as opportunities as a result of emerging global trade agreements. The Kansas Agricultural and Rural Leadership program (KARL) has been helping them to understand and work with the international issues affecting Kansas agriculture and consumers. Since 1990, KARL has helped hundreds of Kansans study the agriculture of other countries. The program involves classroom training and a two-week study tour in another country. Participants compare agricultural practices and learn about different customs and cultures that affect Kansas agriculture in the global marketplace.

Contact: Jack Lindquist, KARL Office, Telephone: 785-532-6300, FAX: 785-532-7036, E-mail: jwlindqu@oznet.ksu.edu

New Fiscal Conditions and Trends Reports for Counties

The Office of Local Government in K-State Research and Extension has released its third annual county Fiscal Conditions and Trends reports. They contain detailed revenue and expenditure data extracted from budget documents in each Kansas county. The reports are designed to aid county commissioners in the budget planning process but may be of interest to anyone concerned with county government finance. Copies of the report have been distributed to K-State Research and Extension offices in the counties. Additional print copies are available in limited quantities. Reports also are available in pdf format upon request.

Contact: John Leatherman, Office of Local Government, Telephone: 785-532-2643, FAX: 785-532-3093, E-mail: jleather@agecon.ksu.edu

Bringing Youth into the KidZone

KidZone, an after-school program in Wyandotte County (mainly Kansas City), provides out-of-school care in neighborhoods where at-risk youth and their families live. Featuring safe, educational, and fun places for youth to be before and after school, the focus is on providing skill-building, making connections with others, and self-determination, attributes that can increase healthy behaviors and decrease antisocial ones. KidZone is a project of a larger K-State Research and Extension program called OPEN-K (Opportunities for Prevention Education and Networking in Kansas). The impetus for KidZone and other such programs resulted when the collaborating partners evaluated resources available to them in Kansas City, Kan., communities and when they reviewed local crime statistics. They saw a need for safe and healthy places where youth could learn positive social skills. The project's primary premise is that the social environment of after-school progams will reduce the occurrence of problem behaviors within that setting. 4-H Youth Development is currently part of after-school programming in six of the 12 schools in the area. K-State Research and Extension staff members recruit, train, monitor, and provide supplies and ongoing support for the part-time program staff. This effort is reaching Kansas City neighborhoods that have been traditionally underserved by K-State Research and Extension.

Contact: Peggy Boyd, Wyandotte County Research and Extension Office,
Telephone: 913-299-9300, FAX: 913-299-5108, E-mail: pboyd@oznet.ksu.edu

Collaboration: USD 500, Camp Fire USA, Boys and Girls Clubs, Storytellers, Housing Authority, Unified Government, a local drum group, and a Karate arts expert.

Greeley County 4-H Ranch

Greeley County in far western Kansas has only 1,500 residents. As more and more rural families leave farmsteads for small-town living, the youth in those towns lose access to the resources needed to do livestock projects. In cooperation with K-State Research and Extension, ranchers, business owners, and others built the Greeley County 4-H Ranch. Youth there have the opportunity to develop hands-on skills by participating in a 4-H or FFA project at the ranch. Handling finances, managing time, and dealing with an animal's illness or death are among the "real world" skills that they develop. They also gain social skills related to teamwork, leadership, respect for others, and public speaking and public relations. Youth can participate even with little or no family involvement because of the strong volunteer base. The number of youth participating has doubled since the Ranch's start up in 1999. This initiative has allowed 4-H and K-State Research and Extension to reach a new audience of future community leaders.

Contact: Todd Schmidt, Greeley County Research and Extension Office, Telephone: 620-376-4284,
FAX: 620-376-2683, E-mail: tschmidt@oznet.ksu.edu

Opportunities for Youth to Develop Leadership Skills

Four counties in the Kansas City metropolitan area have consolidated efforts and resources to provide youth in that area with skills in leadership and citizenship. Kansas youth are vulnerable to increased pressures and situations in our fast-paced society. They need guidance and direction to help them become productive and successful citizens. Kansas River Youth Leadership is a youth development program of K-State Research and Extension. Adults, businesses, and institutions in the communities become involved with the program. The goals are to help youth to increase communication skills, prepare them for entry level jobs, foster healthier behaviors, increase their confidence, and encourage them to become more involved in community service. The participating counties are Douglas, Johnson, Leavenworth, and Wyandotte.

Contact: Beth Hecht, Leavenworth County Research and Extension Office, Telephone: 913-250-2300, FAX: 913-250 2312, E-mail: bhecht@oznet.ksu.edu

Osage County Interagency Initiative

In cooperation with parents and several agencies, organizations, and service providers, K-State Research and Extension formed the Osage County Interagency Initiative, a program to assess risks related to children and youth in the county and to establish prevention efforts aimed at those risks. Funding for the project came from grants from the State Incentive Cooperative Agreement: Communities that Care. Although mid-term and long-term outcomes are not expected to be evident yet, preliminary data show progress, including 1. an increase in the number of families with clear rules about youth substance abuse; 2. a larger percentage of students reporting that they would get caught by their parents if they consumed alcohol, skipped school, or carried a handgun without permission; 3. improvements in community laws and norms; and 4. a drop in the perceived availability of cigarettes, alcohol, and marijuana.

Contact: Mary Frances Richmond, Osage County Research and Extension Office,
Telephone: 785-828-4438, FAX: 785-828-4749, E-mail: frichmon@oznet.ksu.edu

Collaboration: Regional Prevention Center of the Flint Hills, Farm Bureau, Three Lakes Educational Cooperative, Big Brothers/Big Sisters, the Santa Fe Trail School District, and parents.

Pratt County Web Site Project for 4-H Clubs

4-H is renowned for teaching life skills. Now it is adding a new dimension—teaching about technology, particularly computer and Internet skills. It began with a Web Page Contest for 4-H club members in Pratt County. Awards were presented for the selected Web site pages during the county fair, and the pages were posted on the Pratt Chamber of Commerce Web site. First National Bank of Pratt provided funding for the project, including enough money to later buy a domain name and space for a permanent site. The project has continued to expand, with the 4-H'ers learning to create and post videos, maintain and update the site, and make the site a place for club members to meet. The Web site pages can be seen at *www.prattcountyextension.com*

Contact: Jean Clarkson-Frisbie, Pratt County Research and Extension Office,
Telephone: 620-672-6121, FAX: 620-672-9566, E-mail: jcfrisbi@oznet.ksu.edu

Collaboration: First National Bank of Pratt and Pratt Tele-Community Center

Facts about 4-H Youth Development in Kansas

Kansas 4-H club and group memberships have increased 46 percent since 1991, with 165,579 Kansas school-aged youth participating (20 percent). It involves more than 18,000 volunteers throughout the state. The many different 4-H projects can boast 300,000 enrollments per year, and the top four are 1. Foods and Nutrition, 2. Physical Activity, 3. Leadership, and 4. Arts and Crafts. Fifty-one percent of Kansas 4-H'ers are female, 49 percent male. These statistics and many more are available in a 4-H brochure #4H839.

Contact: Gary Gerhard,
4-H Youth Development,
Telephone: 785-532-5800,
FAX: 785-532-5981,
E-mail:
ggerhard@oznet.ksu.edu

4-H CARES—Helping Youth Stay Away from Drugs

An acronym for Chemical Abuse Resistance Education Series, 4-H CARES is a youth program designed to improve self-esteem and family interaction, promote life skills, and teach about chemical abuse. Many youth organizations have included 4-H CARES in their educational campaigns. Nearly all the other states and a number of school systems and provinces in Canada have requested the 4-H CARES educational material. It has been named one of 20 exemplary prevention programs in the nation by the National Association of State Alcohol and Drug Abuse Directors and the National Prevention Network.

Contact: Gary Gerhard, 4-H Youth Development, Telephone: 785-532-5800, FAX: 785-532-5981, E-mail: ggerhard@oznet.ksu.edu

OPEN-K Helps Native American Youth

K-State has teamed with Haskell Indian Nations University in Lawrence to develop an OPEN-K program that focuses on activities and education that can empower American Indian youth to grow and develop self-respect, dignity, self-sufficiency, and self-determination. OPEN-K stands for Opportunities for Prevention Education and Networking in Kansas. The program serves as a hub to connect nine targeted American Indian communities on tribal land and in Kansas cities so that they can benefit from each other's youth development experience and knowledge. Efforts are being made to identify people in the Native American communities to interact with Native American youth and mentor them.

Contact: Elaine Johannes, Office of Community Health, Telephone: 785-532-7750, FAX: 785-532-7733, E-mail: ejohanne@oznet.ksu.edu

Establishing a Community Health Institute

The Office of Community Health has been working to establish a Community Health Institute at K-State. The goal of the Institute is to promote individual, family and community health by improving the nutrition, physical activities, and social behavior practices of individuals, families, and communities in Kansas. To reach that goal, the Institute is planning to develop innovative partnerships with national, state, county, and community agencies. It also will facilitate interdisciplinary research on prevention and intervention of community health problems, and it will facilitate outcomes-based educational programs to solve those problems. The Institute will work with many other departments and colleges at K-State, drawing on the expertise of faculty in many disciplines.

Contact: David Dzewaltowksi, Office of Community Health, Telephone: 785-532-7750, FAX: 785-532-7733, E-mail: dadx@ksu.edu

Targeting Education and Early Intervention to Reduce Juvenile Crime

The OPEN-K program of K-State Research and Extension focuses on education and early intervention to reduce crimes by juveniles in Kansas. The acronym stands for Opportunities for Prevention Education and Networking in Kansas. This federally funded effort aims to reduce juvenile crime by improving the quality of life for youth and communities through after-school projects, mentoring, and parent education. Professional development programs for extension personnel involved in this area are another part of OPEN-K.

Contact: Elaine Johannes, Office of Community Health, Telephone: 785-532-7750, FAX: 785-532-7733, E-mail: ejohanne@oznet.ksu.edu

Back-to-School Program Prepares Students to Start School

Called Success by 6, this program began in Shawnee County to prepare children for school. Organized around six action teams, the project focuses on early childhood education, home visitation, safety, preventative health, diversity, and nutrition. More than 80 partners contribute to Success by 6, including hospitals, insurance companies, government offices, child-care programs, and more. United Way spearheads the program, which has expanded to such surrounding communities as Clay Center, Abilene, Junction City, and Salina. Success by 6 helps prevent problems before they happen by giving families the tools they need to prepare their children for success in school and in life. One of the projects involves a Back-to-School Fair. It attracts more than 2,000 participants. More than 1,200 backpacks full of school supplies are distributed through the program, including common items such as pencils and paper but also extras such as personal hygiene products. Families qualifying for free or reduced school lunches can sign up at the fair.

Contact: Cindy Evans, Shawnee County Research and Extension Office, Telephone: 785-232-0062, FAX: 785-232-0093, E-mail: cevans@oznet.ksu.edu

School District Leaders Look to Extension for Assistance

When teachers and administrators from the Auburn-Washburn school district began to develop their application for a 21st Century Community Learning Center grant, one of the community partners they looked to was K-State Research and Extension. Alice Frost, coordinator with the LEADERS for the school district project, said, "We wanted 4-H to be a part of our project because its goals to teach youth life skills, build self-confidence, learn responsibility, and set and achieve goals match our goals for the grant." Two Topeka schools—Pauline South and Pauline Central—already received a 21st Century Community Learning Center grant, and they, too, turned to K-State Research and Extension to help them with after-school and summer learning opportunities to address the needs of students, parents, and the community. K-State Research and Extension was one of the first partners to offer enrichment activities for the after-school program. Other programs K-State offered were Be a Book Cook; Basic Parenting; and Responsive Discipline.

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Want to know more?

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Brief History of K-State Research and Extension

1862 The Morrill Act was passed paving the way for a land-grant university in every state.

1863 Bluemont College was renamed the Kansas State Agricultural College. Teaching and Research begins.

1868 Kansas State begins statewide extension work.

1887 The Kansas Agricultural Experiment Station was created at Kansas State Agricultural College under the provision of the Hatch Act.

1914 The Smith-Lever Act created the Cooperative Extension Service.

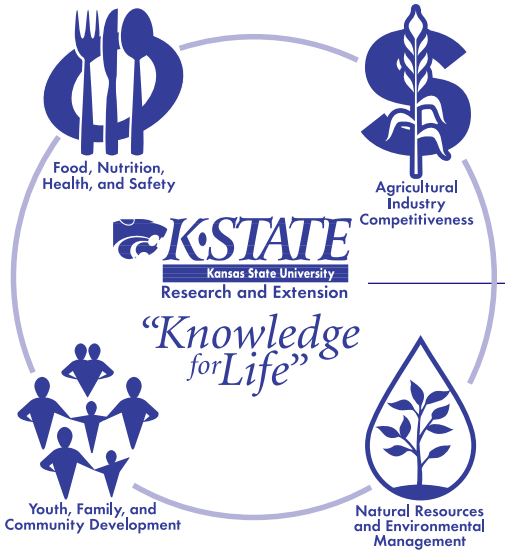
1924 First 4-H Clubs chartered.

1959 The official university name was changed to Kansas State University of Agriculture and Applied Science.

1996 The Kansas Agricultural Experiment Station and Kansas Cooperative Extension Service merged to form the Kansas State University Agricultural Experiment Station and Cooperative Extension Service.

1997 Customer interaction leads to formation of K-State Research and Extension.

Today, K-State Research and Extension employs more than 300 research scientists, approximately 180 faculty specialists and program leaders, nearly 270 county and area specialists, and more than 400 support staff in 23 departments in five different colleges. In addition to main campus, K-State Research and Extension personnel are located in 105 county offices, eight experiment fields, five area offices, three research centers, and three research-extension centers.

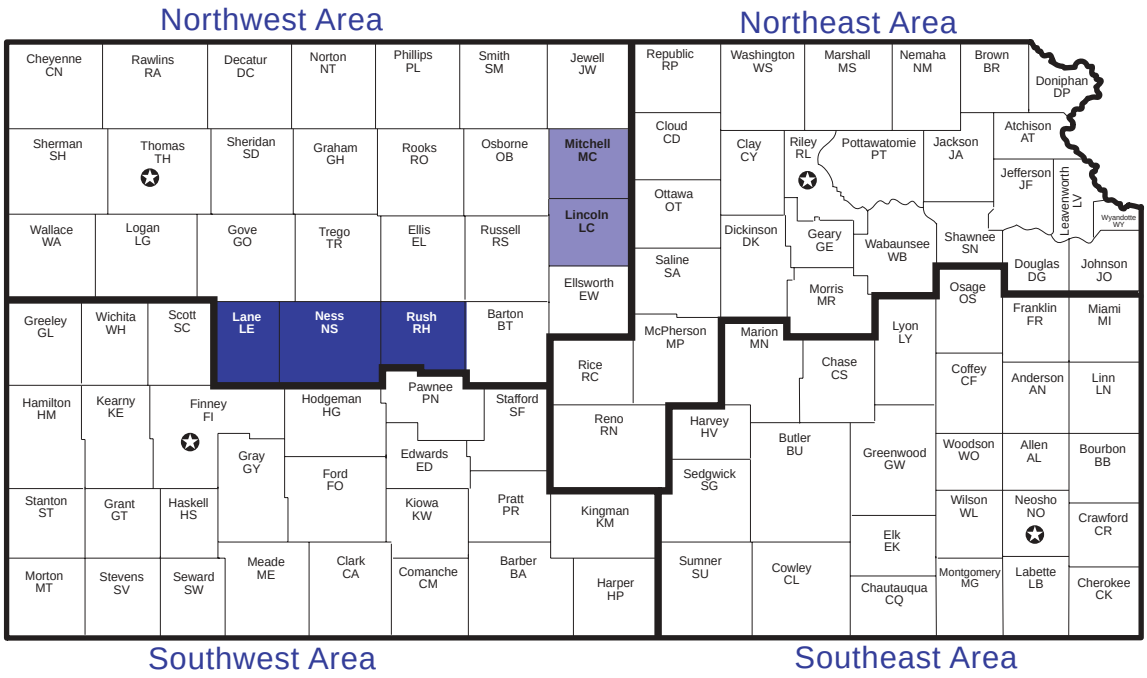


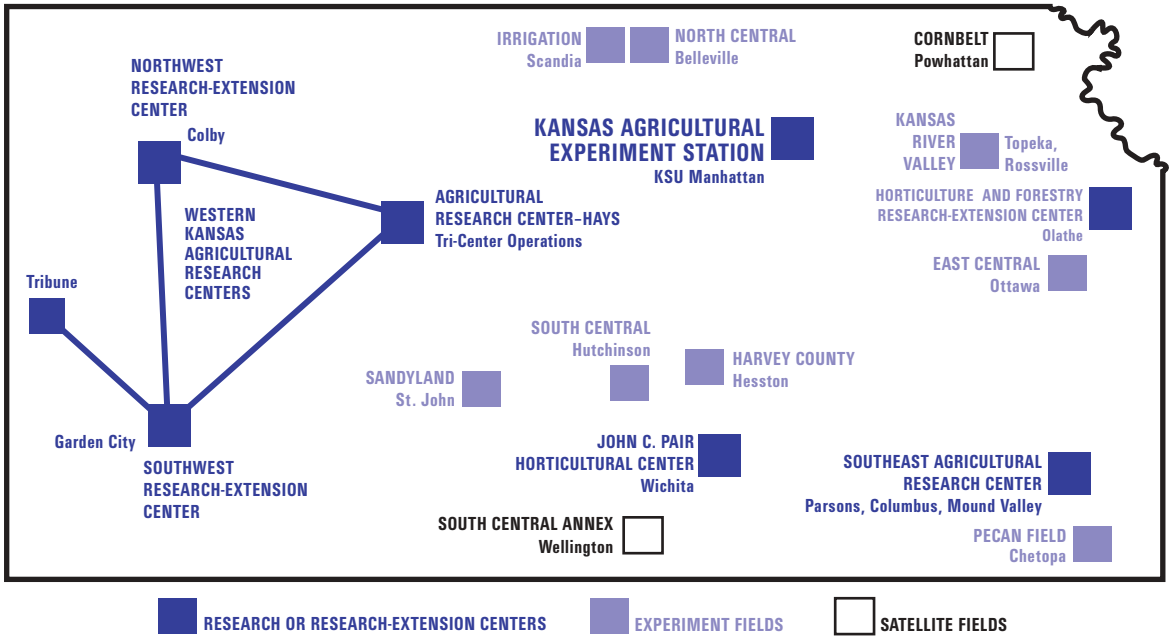
Our Mission Statement:
We are "dedicated to a safe, sustainable, competitive food and fiber system and to strong, healthy communities, families and youth through integrated research, analysis, and education."

K-State Research & Extension
Fiscal Year 2003 Annual Budget

		Governor's Reductions in September
Physical Plant State Funds	$778,791	$771,975
Agricultural Experiment Station State Funds	$33,015,228	$32,755,970
Cooperative Extension Service State Funds	$22,957,828	$22,797,008
Research Grants, Contracts, Other Funds Use	$25,137,094	$25,137,094
Extension Grants, Contracts, Other Funds Use	$18,083,226	$18,083,226
Total FY 2003 Budget	**$99,972,167**	**$99,545,273**
State and Federal Base Funding		
Physical Plant State Funds	$778,791	$771,975
Agricultural Experiment Station State Funds	$29,621,450	$29,362,192
Federal Research Funds	$3,393,778	$3,393,778
Cooperative Extension Service State Funds	$18,376,345	$18,215,525
Federal Extension Funds	$4,581,483	$4,581,483
Total FY 2003 State Funding Support	**$56,751,847**	**$56,324,953**
Budget Classifications		
Faculty & Administrative Salaries	$39,187,744	$39,187,744
Classified & Student Salaries	$9,301,733	$9,301,733
Operating Expenditures	$8,262,370	$7,835,476
Fiscal Year 2003 Annual Budget	**$56,751,847**	**$56,324,953**

K-State Research and Extension Statewide Operations





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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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