C-FAR Appropriation Reduced for FY03

The hard economic situation faced by almost all states throughout the nation has been apparent here in Illinois. After a difficult series of budget deliberations, state officials were forced to make drastic cuts in valuable state programs, which included a reduction in the Illinois Council on Food and Agricultural Research (C-FAR) appropriation. The C-FAR appropriation was reduced by more than half, setting the FY03 appropriation at $6.968 million. This budget compares to C-FAR’s FY00 through FY02 funding levels of $15 million annually.

During the FY03 budget development process, C-FAR members and colleagues and other supporters of Illinois food and agricultural research demonstrated their commitment and support by contacting their legislators to discuss the valuable impact C-FAR-funded research is having on Illinois food and agriculture. Legislators representing all regions of the state received letters, phone calls, and personal visits from individuals expressing the need to keep C-FAR funding at the highest level possible. In addition, many members of the Illinois General Assembly and other elected officials expressed their support of maintaining a solid funding base for C-FAR. Without such support, the C-FAR appropriation might have been reduced further still, requiring additional downsizing or even elimination of important Illinois food and agricultural research programs.

The reduction in the C-FAR appropriation will have a substantial impact on food and agricultural research in Illinois. While the C-FAR board of directors is working with partner university research administrators to determine how to best handle this reduction in funding, it is apparent that few if any new research initiatives will be started and several ongoing research projects must be scaled back. The board is considering how to invest the FY03 appropriation most effectively. “While we are of course disappointed with the reduction in funding, we do have a base of funds which will enable us to continue the majority of our ongoing research initiatives,” said David Downs, vice chair and research chair.

C-FAR members’ participation in determining the industry’s highest research priorities and setting research direction will be as important as ever in the coming year. As economic conditions improve, it is imperative that food and agricultural research programs be poised to address the industry’s most pressing needs. In addition, members will continue to engage legislators and other elected officials regarding C-FAR and its research initiatives. “It appears that there may be significant changes in the Illinois General Assembly membership this fall. This will require a commitment on the part of our membership to inform and educate new general assembly members about C-FAR and our research programs,” said Carol Keiser, membership chair. C-FAR is a unique partnership between industry...
GREETINGS

A Temporary Setback

This past spring presented C-FAR, as well as most other state-funded entities, with an unprecedented series of legislative activities as the FY03 State of Illinois budget was being developed. The period was marked by a myriad of expressions, ranging from concern to hope, and by extensive engagement with elected officials. This challenging time was also a period of learning, however. We, the C-FAR membership, learned that nothing should be taken for granted, and we trust that our elected officials learned more about C-FAR, its appropriation, and the important and vital role C-FAR funding plays within our industry.

While it is unfortunate that the C-FAR appropriation suffered a reduction of $8 million (53%), we are fortunate to have received $6,968 million in funding, thus enabling us to carry on the majority of our ongoing initiatives. This investment was not a given; rather, it materialized as a result of support from Governor Ryan and members of the Illinois General Assembly. Furthermore, our state leaders’ ability to secure this food and agricultural research investment was greatly strengthened by the efforts of C-FAR members. Our membership spent countless hours communicating with elected officials about the importance of a viable and sound food and agricultural research program for Illinois. I am convinced that without C-FAR members’ engagement, our appropriation might have been considerably less than $6.9 million. I would also like to recognize and thank Kraig Wagenecht, our executive administrator, and his staff for their extraordinary efforts during this budget development process.

As difficult as this year’s budget process was, the experience provided us the opportunity to interact more directly with our elected officials. We learned that interest in food and agricultural research programs does not rest only with traditionally agriculture-oriented downstate legislators. While each legislator has specific needs unique to his or her own district, every legislator understands the importance of agriculture to our state and recognizes that there are many complex issues associated with a safe and abundant food supply.

Yes, our state’s food and agricultural research programs are going to be temporarily set back this year, as will many other state-supported programs. However, we are elated by the feedback we have received from legislators all over the state who clearly recognize how important it is that this setback be only temporary.

The combination of a dedicated C-FAR membership and a general assembly and governor who understand the importance of rebuilding our state’s research programs bodes very well for the future of Illinois agriculture.
Thanks to Our State Leaders

C-FAR gratefully acknowledges Governor George H. Ryan and members of the Illinois General Assembly for the FY03 C-FAR appropriation. We look forward to working with these and future elected officials to strengthen our food and agricultural research programs.

Illinois Genetic Marker Center

University of Illinois at Urbana-Champaign (UIUC) researchers looking to identify the genetic basis of traits important to the production of Illinois crops and animals now have a low-cost, high-tech laboratory at their disposal. Established with a grant from UIUC’s C-FAR Sentinel Program, the Illinois Genetic Marker Center allows researchers to develop new crop varieties and animal-based products with value-added traits without having to pay expensive laboratory service fees. “This facility significantly reduces the costs of obtaining SSR (simple sequence repeats) marker data by allowing the researchers to do the work themselves,” said Robert Elshire, director of the center. “We provide the equipment, supplies, and training, and the researchers, often graduate students, operate the equipment and perform the analysis themselves.”

This new biotechnology center, located at 269 National Soybean Research Center on the UIUC campus, became fully operational in January 2002. The laboratory makes available a variety of basic equipment used in molecular biological research, including a high-capacity thermocycler, a 96-channel microdispenser, and four automated slab gel DNA sequencers (donated by Monsanto). The laboratory also houses several GNU/Linux computing workstations loaded with multiple software packages that can be used to analyze data.

University of Illinois researchers who provided guidance in developing the center and who will use the laboratory to carry out many research activities include Brian Diers, Randall Nelson, Torbert Rocheford, and Fred Kolb from the Department of Crop Sciences and John (Jack) Juvik from the Department of Natural Resources and Environmental Sciences. Scientists specializing in animal sciences and other food- and agriculture-related research areas also have plans to use the new laboratory. To date, researchers have used the new facility to conduct molecular mapping of glucosinolate production in broccoli. Glucosinolates are antioxidants that have been associated with a reduced risk of cancer. Researchers have also used the facilities to investigate protein concentration in soybeans. Additional uses of the laboratory that are in the planning stages include looking at the genetic basis of the nutritional composition in maize as well as analyzing meat quality traits in pigs. “This new facility allows us to conduct more research with fewer dollars,” said Diers. “This will be especially important this year when research funding is limited and we must get the most out of each dollar.”

C-FAR funding provided for laboratory renovation expenses, the purchase of most of the necessary equipment, and initial administration costs. Steven G. Pueppke, associate dean for research at UIUC’s College of Agricultural, Consumer and Environmental Sciences, noted, “The Genetic Marker Center is a perfect example of innovation through the Sentinel Program. C-FAR has funded research to meet an Illinois need—not permanently, but for a few years until the lab is self-sufficient and able to function independently.” With a near-cost price structure for laboratory use, the center is expected to be totally self-sufficient by FY04. “By leveraging C-FAR dollars and resources provided by the university,” explained Elshire, “we have been able to make the laboratory affordable to researchers and provide services not available elsewhere.”

For additional information on the Illinois Genetic Marker Center, please contact Robert Elshire at 217.333.9461 or via e-mail at relshire@uiuc.edu.

Thanks to Our State Leaders

C-FAR gratefully acknowledges Governor George H. Ryan and members of the Illinois General Assembly for the FY03 C-FAR appropriation. We look forward to working with these and future elected officials to strengthen our food and agricultural research programs.
New marketing resources and networks are now available to help Illinois livestock producers boost their income and better meet consumer demand by providing a greater selection of meat products. C-FAR-funded researchers are working diligently to open up the lines of communication and develop beneficial partnerships between small to medium-sized producers and similarly sized processors, purveyors, and retailers. Such alliances create a win–win situation in Illinois. “It’s a relationship that really makes sense,” said Darlene Knipe, project leader and University of Illinois Extension educator based in the Quad Cities area. “These are businesses that are experiencing similar threats from larger competitors. They are all being told to find niche markets and to compete on the basis of quality and service. Joining forces can only strengthen them competitively.”

One focus of the project has been developing marketing resources and supply chain networks to reach consumers in and around Chicago, due to its large market potential for Illinois value-added meat products. In the greater Chicago area, more than 7.8 million people account for the consumption of over 475,000 tons of beef, pork, and lamb at a cost of over $2.5 billion annually.

Consumers have shown that they will pay an average of 10% more and will increase purchases as much as 20% for branded meat products that meet their preferences. A 10% price increase yields approximately $250 million in additional revenue each year. These findings were confirmed when a branded lamb product was test-marketed with Chicago consumers.

Emerging and currently underserved markets, such as the diverse ethnic markets in urban communities, are also being identified. Chicago is the fourth most popular destination for foreign immigrants in the United States. Many of these immigrants are not only more likely to consume beef, pork, and lamb products, but they also have preferences for products not currently available in the commodity meat market. For example, in the case of pork products, the Hispanic community can be defined as an underserved market. A survey conducted by the National Pork Producers Council suggests that Hispanic consumers generally prefer (1) a different cutting procedure than used to prepare conventional pork products, (2) fresh pork (not deboned), and (3) a full-service meat case (National Pork Producers Council, 1997). An estimated 835,000 Hispanics currently reside in the greater Chicago area and consume about 33.6 pounds of pork per person annually (equivalent to 250,000 hogs). This group has been identified as a rapidly growing market.

Researchers also surveyed 934 shoppers from 6 Chicago-area food stores for the purpose of identifying consumer preferences in meat products and comparing those preferences to available products. In addition, members of the research team conducted over 42 hours of interviews with meat industry decision makers, including representatives from IBP, Jewel, and Thoms Proestler Company. This information has helped identify markets not currently served through the mass meat merchandisers, thus providing small to mid-sized farmers with potential niche opportunities.

Marketing resources and networks have been developed or are currently under development to help Illinois livestock producers provide value-added...
meat products that meet the individual needs and tastes of consumers. “We’ve learned there is no shortage of opportunities in the marketplace,” said Knipe. “But figuring out how to tap into those markets can be baffling for producers. With the resources being developed, we’re hoping to make that challenge easier.”

In addition, over 42 educational sessions on alternative markets for meat products have been offered, reaching 2,078 farmers, food retailers, and related educators. Information has also been disseminated through media such as AG Day TV, the Federal Reserve Bank’s News and Views, and the Farm Journal.

**Interactive Website**

Researchers are currently completing work on an interactive website that uses a number of marketing databases to identify potential consumer markets for value-added meat products in Illinois by specific geographic area. Business information will also be identified based on geographic location so that producers interested in direct marketing products can locate supply chain partners and packers. Conversely, suppliers and food retailers will be able to locate supply sources for value-added meat products.

**Premium Beef Project**

A platform has been developed for pairing small and mid-sized food-related businesses with farmers. Three independent grocery stores in Chicago, including Blue Goose Supermarket, Sunset Foods, and Hyde Park Coop, have formed a partnership with a group of Illinois beef producers to develop and market high-quality beef products that will better serve their grocery store customers. This partnership, called the Premium Beef Project, provides an important link between Chicago’s independent grocers and downstate cattlemen. “Since we became involved in this project,” said Dale Instefjord, general manager of the Blue Goose in St. Charles, “we’ve learned a tremendous amount about Illinois-produced beef and believe it offers us and other independent grocers a tremendous advantage.” According to Jamie Willrett, Malta, Illinois, beef producer and former president of the Illinois Beef Association, “Farm-to-retail price spreads have consistently widened over the past decade. The Premium Beef Project gives producers some of the necessary tools to figure out ways to market our products further up the value chain and get closer to the consumer. Partnering with retailers in this project helps us build our own branded products and marketing alliances.”

**Faith in Place Project**

A partnership with the Faith in Place Project at the Center for Neighborhood Technology in Chicago has been formed to pilot test supply chain models that will deploy fresh meat products to underserved minority populations in Chicago. One such program would enable regional lamb growers to sell halal lamb to Muslims through a cooperative on a CSA (Community Supported Agriculture) model. “Linking lamb producers directly to their Muslim customers can solve problems at both ends. The Muslim consumers can be assured that their religious dietary requirements are really being met, and the producers gain direct access to a premium market,” said Reverend Clare Butterfield, director of Faith in Place.

**Ag Entrepreneurship Development Initiative**

A technical assistance center has been opened for farmers interested in starting their own value-added businesses. The program, called the Ag Entrepreneurship Development Initiative, provides marketing, business management, and new product development support. This program has received additional funding through University of Illinois Extension.

Consumers have shown that they will pay an average of 10% more and will increase purchases as much as 20% for branded meat products that meet their preferences.
Equine Research Provides A New Method to Prevent and Treat Uterine Infections

DR. SHERYL KING AND HER TEAM HAVE DISCOVERED A MORE EFFECTIVE, LESS COSTLY TREATMENT FOR UTERINE INFECTIONS IN MARES.

C-FAR-funded equine research has identified a less expensive, faster, safer, and more effective way to prevent and cure uterine infections in mares than the usual approach of prescribing antibiotics. Sheryl King, director of the equine program at Southern Illinois University, and her research team have discovered that mannose, a naturally occurring plant-based sugar, can be used in solution to unlock and flush out disease-causing bacteria from uterine tissues. This discovery will allow horse breeders to increase broodmare productivity and save money. “Lost production due to uterine infections costs the horse industry tens of millions of dollars per year. It is one of the most prevalent problems in horse breeding,” said King.

**Bacterial Infections in Broodmares**

The leading cause of infertility in mares is endometritis, an inflammation of the uterine lining most often caused by bacterial infection. Bacteria can be introduced into the uterus during breeding and by numerous other means. These bacteria can cause a reproductive tract infection that leaves the mare infertile. Bacterial infections in mares are usually treated with antibiotics, which are not always effective and can be very expensive. Some infections are resistant to multiple antibiotics and persist for years. Getting rid of particularly difficult bacteria often requires the use of specialized antibiotics that can cost as much as $2,000 for a 10-day treatment.

An additional complication related to treating these infections with antibiotics is the increasing incidence of bacterial antibiotic resistance. Scientists predict that, at the present rate of resistance acquisition, several strains of bacteria responsible for life-threatening disease will be resistant to every known antibiotic within the next 5 to 10 years. Therefore, finding alternative methods to fight bacterial infections is imperative. “As in all areas of human and animal medicine, we have been encountering a vastly increased incidence of bacterial uterine contaminants that are resistant to many or even all of the typically employed antibiotics. This new method of preventing and treating uterine infections offers an alternative to antibiotic use and another route to deal with stubborn antibiotic-resistant infections,” said King.

**Mannose as an Alternative Treatment for Infections**

The easy-to-use, highly effective sugar treatment developed by Dr. King and her colleagues could greatly reduce the use of antibiotics to cure uterine infections in mares. The new treatment is based on research indicating that, as certain bacteria invade the uterus (and other body tissues), they initially attach to the surface they will later invade by hooking up with a sugar (mannose) that is part of the chemical makeup of the uterine lining. When a mannose solution is infused into the uterus, bacteria bind to the mannose instead of to the tissue and can be washed out with the solution. This technique has proven effective with three types of common bacteria known to cause uterine infections: *Streptococcus zooepidemicus*, *Pseudomonas aeruginosa*, and *Escherichia coli*. These three bacteria account for an estimated 90% of all endometritis cases. *Pseudomonas aeruginosa*, in particular, is very difficult to get rid of once a mare has been infected and is resistant to a large number of antibiotics. This type of infection is often treated with an antibiotic that costs approximately $100 per dose; the mannose solution can effectively treat this problem for approximately $15 per treatment.

A mannose solution can be prepared by adding 25 grams of mannose to 500 milliliters of presterilized physiological saline solution or sterile water. The sterilized saline solution can be self-made by mixing 500 milliliters of distilled water with 4.5 grams of salt into a solution that is then sterilized.

Several methods may be employed to treat active bacterial infections. A veterinarian can infuse the mannose solution into the mare’s uterus and drain the solution back out. Alternatively, smaller volumes can be
deposited in the uterus to remain for several hours before using oxytocin or other drugs to cause uterine contractions that will expel the solution naturally. It is important that treatments be performed when the mare is in heat and her cervix is open.

Mannose can also be used to prevent infection by treating the mare before breeding. King warns, however, that the mare should be clean of any infection first. Otherwise, the bacteria and sperm will both cling to the mannose and form clumps. This prevents the mare from becoming impregnated. To treat her broodmares, King first uses a mannose solution to flush out the uterus and then inseminates the mare with a mannose-containing semen extender. Stallion sperm is not harmed by mannose in doses used to prevent and treat uterine infections. In fact, mannose-containing semen extenders can even be used when cooling stallion semen for long-distance transport.

**Potential Future Applications**

Dr. King and her team are examining the possibility of using mannose to treat other strains of pseudomonas and streptococcus, which are responsible for infections in the lungs and other mucosal tissues. For example, this line of research may contribute to a treatment for strangles, a devastating equine respiratory disease caused by *Streptococcus equi*, and *Rhodococcus equi*, a serious infection of the intestinal tract and/or lungs in foals. “This area of sugar therapy should be adaptable to other body systems and other species,” said King. “Since information about our research came out in some medical publications, I have been receiving calls and e-mails from veterinarians and animal owners all over the country who are at the end of their rope treating antibiotic-resistant infections in a variety of animals. For example, in addition to questions about horses, I have been asked numerous times about ear infections in dogs, uterine infections and mastitis in dairy cows, bladder infections in cats, and have even received some inquiries on human ailments. It will be interesting to hear back from some of the vets who tried mannose on these conditions to see if it works.”

For more information, please contact Dr. Sheryl King at sking@siu.edu or at the Department of Animal Science, Food and Nutrition; Agriculture Building, Room 133; Southern Illinois University at Carbondale; Carbondale, Illinois 62901-4417.

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**Visit farm.doc website for 2002 Farm Bill Information**


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**Websites to Watch**

- **C-FAR**
  - www.ilcfar.org
- **Information Systems and Technology SRI**
  - web.aces.uiuc.edu/sriit
- **Rural Community Development SRI**
  - www.siu.edu/~i-farrm
- **Swine Odor and Waste Management SRI**
  - sowm.outreach.uiuc.edu
- **Food Safety SRI**
  - www.siu.edu/~foodsafe
- **Water Quality SRI**
  - web.aces.uiuc.edu/sriwq
- **NAT Tools for Good Health**
  - www.nat.uiuc.edu
  - For analyzing diet and food choices.
- **farm.doc**
  - www.farmdoc.uiuc.edu
  - Provides farmers with decision-making information and analysis tools.
- **Illinois TRAILL**
  - il-traill.outreach.uiuc.edu
  - Organizes livestock research, information, and expert services.
- **Interactive Agronomy Handbook**
  - web.aces.uiuc.edu/iah
  - Databases and online resources complement handbook.
- **Pest Management & Crop Development Bulletin**
  - www.ag.uiuc.edu/cespubs/pest
  - Provides scouting reports, management advice, and decision-aid tools.
- **Illinois IPM Online**
  - www.ipm.uiuc.edu
- **Illinois Watershed Management Clearinghouse**
  - web.aces.uiuc.edu/watershed
  - Helps groups create and implement a plan to address local watershed issues.
- **Illinois World Food and Sustainable Agriculture Program**
  - web.aces.uiuc.edu/wf
  - Covers world food issues and related agriculture and natural resource implications.
- **Community Development Toolbox**
  - www.ag.uiuc.edu/~lced/cfarsriit.html
  - Addresses rural needs for data analysis.
August 20  Semi-annual Meeting (Northfield Inn, Suites & Conference Center - Springfield)
September 4  Board of Directors Meeting
November 13  Board of Directors Meeting
January 14  All Working Group Meeting (location to be announced)
January 16  Board of Directors Meeting
February 18  Annual Meeting (location to be announced)
February 26  Board of Directors Meeting
March 6  Expanding Agricultural Markets Working Group Meeting
March 7  Rural Economic Development Working Group Meeting
March 10  Agricultural Production Systems Working Group Meeting
March 11  Human Nutrition and Food Safety Working Group Meeting
March 12  Natural Resources Working Group Meeting
July 9  Board of Directors Meeting

Location of March WG meetings (to review External Competitive Grants Program proposals) to be announced.

Please call the C-FAR office or check the calendar on the C-FAR website at www.ilcfar.org for further details.