Working Together to Fight Soybean Rust

Extension specialists, county extension agents, and Kentucky producers are working together again this year to protect Kentucky’s soybean crops from the threat of soybean rust.

Caused by a fungus, soybean rust shows up as lesions on the leaves of the soybean plant. In past years, soybean rust wreaked havoc in soybean fields in Brazil and South Africa.

The disease has not yet damaged soybean crops in Kentucky or the rest of the United States, although it has shown up in scattered fields.

Last year, Kentucky Cooperative Extension worked with producers and private industry as part of a national network to track the disease.

Kentucky will provide data for the national information-gathering network again this year, using methods that have been fine-tuned after last year’s learning curve.

In soybean fields across the state, designated sentinel (surveillance) plots still will be used, and spores caught in special traps will still be counted. A change this year is to use fewer, more intensely scouted plots, said Don Hershman, extension plant pathologist. "Strategic placement is the key," he said.

This year, too, leaf samples with suspicious lesions will be overnighted to the diagnostic lab at the Research and Education Center in Princeton for microscopic observation. (Last year, more of the evaluation was visual and done on-site).

Most of the sentinel plots across the state are being managed by extension agents like Rod Grusy, ag agent in Hardin County.

"Soybean production is big in this county," Grusy said. "I see my role as a county extension agent as providing assistance in the detection of rust—not just for local producers, but all soybean growers."

Grusy worked with a local producer to find a suitable location for a sentinel plot. Every week, he’ll inspect it and send a report to Princeton. He’ll also send leaf samples if any show signs of rust. Thirteen producers across the state, including the one in Hardin County, have volunteered acreage in their own soybean fields for sentinel plots and spore traps.

Last year, county extension councils made it clear that they, too, thought soybean rust was a priority. Extension specialists and agents have continued to keep the local councils aware of the steps being taken to control it.

Don Hershman, extension plant pathologist, explains soybean rust. The flaglike mechanism traps spores of the soybean rust fungus and is part of a cooperative project with Syngenta and the University of Arkansas.
Kentucky Cooperative Extension Service programs are locally defined and administered. Here are a few examples of county extension programs that are making a difference in people’s lives.

#### Civic Engagement in Bourbon County

Extension programs traditionally have been designed around the concept of civic involvement and local decision making, and the Bourbon County Cooperative Extension Service offers a variety of ways for novice leaders to gain valuable experience. Bourbon County Extension Homemakers are organized and guided by 26 leaders on an advisory board; 100 community people plan and implement the Bourbon County Fair; and scores of others are involved in extension leadership programs. All of this involvement translates into leadership throughout the county.

#### Economical Beef Production in Livingston County

Just about a year ago, the Livingston County Cooperative Extension Service organized the Livingston County Beef Integrated Resource Management Purchasing Alliance to decrease the input costs of beef production. The alliance now has more than 30 members who have already saved $15,000 in costs by buying mineral supplements as a group. Plans are to continue purchasing the inputs as a group and to continue making improvements in beef production in the county.

#### Healthy Citizens in Boyle County

The Boyle County Cooperative Extension Service, in cooperation with the county health department, organized the Danville-Boyle County Healthy Communities Coalition. It involves community leaders from local schools, government agencies, and organizations as well as food service directors. The group planned events and activities that reached nearly 800 elementary students and more than 250 middle school students. The group also developed materials about proper nutrition and healthful lifestyles that teachers used with 700 youngsters. A series of newspaper stories reached some 13,000 county residents.

#### Keeping Soybean Rust at Bay in Muhlenberg County

To help avoid losses from soybean rust, the Muhlenberg County Cooperative Extension Service used a variety of methods to educate farmers about the disease, including newsletters, news stories, a hotline to answer questions, field days, and a Web site. By using extension-based information, local farmers saved more than a quarter of a million dollars in fungicide and applications costs by applying fungicide only when soybean rust was a real threat.

#### Going Wireless in Robertson County

If a county has no local newspaper or radio or television station, communication can be problematic. The Robertson County Cooperative Extension Service, working
Forestry Facts in Breathitt County

More than 80 percent of Breathitt County is forested. To help forest owners better manage their forests, the Breathitt County Cooperative Extension Service, in cooperation with the Kentucky Division of Forestry and the Kentucky Department of Fish and Wildlife, presented a forestry field day for landowners. At the field day, forest owners learned about erosion control on logging roads, selling timber, managing high grade hardwood stands, improving wildlife habitat, and safety when felling trees. In addition, a demonstration of mechanical harvesting was provided for 140 forest owners in the region, where the economics of forest harvesting was discussed.

New Fertilizer Option in Hopkins County

Hopkins County is an agriculturally intensive area, with more than 100,000 acres in cropland that is fertilized annually to boost yields. At the same time, the county’s poultry industry produces some 30,000 tons of nutrient-rich litter each year. During the past four years, the Hopkins County Cooperative Extension Service and local farmers have evaluated the use of this litter as a replacement for high-priced fertilizers. Results show that the chicken litter can replace some of the commercial nitrogen without yield reductions.

Babysitters Club in Laurel County

For many middle and high school students, their first job is babysitting. The Laurel County Cooperative Extension Service, along with the South Laurel Middle School Youth Services Center, organized a club to teach babysitting skills. The 32 students learned basic infant care, nutrition, and fundamentals of child development. All students were certified in CPR by the end of the seven-month-long program.

Sewing Camp for Latino and Rural Youth in Woodford County

The Woodford County Cooperative Extension Service provided a four-day camp geared to Latino and rural youth to learn about sewing. Contacts within the Latino community were made, and 10 youth participated in the program. Five adult leaders helped teach sewing skills. Six of the youths received a sewing machine to continue improving their skills. Some of their families indicated that they wanted their children involved in other 4-H activities.

Learning about Others in Marshall County

The Marshall County Cooperative Extension Service addressed the issue of racial and ethnic differences with a program called “4-H is More Alike than Different.” In the program, more than 100 students discussed openly the similarities and differences among group members. According to evaluations completed by the 4-H’ers, most learned to appreciate what they have in common with other people and also to value social differences.

A Healthier McCreary County

Because being overweight puts people at higher risk for health problems, the McCreary County Cooperative Extension Service instituted an eight-week weight loss exercise program. Participants learned the importance of increasing physical activity, eating more appropriate food portions, making optimal food choices, and controlling stress. Of those attending, more than 80 percent lost weight, and the group decided to continue to meet for another eight weeks so members could learn even more about improving their health.

Improving Jobs Skills in Kenton County

In Kenton County, local employers reported that too many applicants for jobs were lacking in important employability skills, including resume writing, filling out accurate applications, and good grooming and grammar. To assist local citizens, the Kenton County Cooperative Extension Service taught these skills in two separate workshops to 19 individuals. Of those attending, 75 percent updated their resumes and felt more comfortable about their interview skills. A quarter of the attendees interviewed for a new job and accepted it.

New Fertilizer Option in Hopkins County

Hopkins County is an agriculturally intensive area, with more than 100,000 acres in cropland that is fertilized annually to boost yields. At the same time, the county’s poultry industry produces some 30,000 tons of nutrient-rich litter each year. During the past four years, the Hopkins County Cooperative Extension Service and local farmers have evaluated the use of this litter as a replacement for high-priced fertilizers. Results show that the chicken litter can replace some of the commercial nitrogen without yield reductions.

Babysitters Club in Laurel County

For many middle and high school students, their first job is babysitting. The Laurel County Cooperative Extension Service, along with the South Laurel Middle School Youth Services Center, organized a club to teach babysitting skills. The 32 students learned basic infant care, nutrition, and fundamentals of child development. All students were certified in CPR by the end of the seven-month-long program.
Agriculture in Kentucky has been faced with a series of challenges and transitions in recent years. Every step of the way during those transitions, the Kentucky Cooperative Extension Service has played a key role.

As I talk with farmers, county agents who serve them, and our faculty, specialists, and associates, I continue to be amazed at the many ways the Cooperative Extension Service and the College of Agriculture are benefiting Kentuckians.

The recent soybean rust issue is an excellent example. We knew that soybean rust could be devastating to Kentucky producers because we are in touch with the people we serve (through advisory councils and informally) and in contact with the larger research and education community.

We also knew that producers were looking to Cooperative Extension for answers and that they needed sound, research-based information upon which to base their decisions about prevention and treatment of soybean rust.

Through the efforts of a team of extension professionals at the county and state levels, a response effort was mounted that brought much needed information and educational programming to producers. Our effort was integrated with monitoring in Kentucky and other states (as described in the cover story) to ensure that our producers could make informed decisions.

The response that our Kentucky extension system provided turned out to be a model for other states. It not only kept producers informed but helped many of them avoid costly investment in chemicals and treatment equipment that might not be needed.

We “dodged the bullet” last year, and the system will continue to be used to assist producers in dealing with this new potential menace.

The soybean rust program is but one example of the many ways in which Cooperative Extension serves Kentuckians by sharing and applying knowledge. It also shows how we are committed to conducting extension educational programs that make a difference.

—LARRY W. TURNER, Director
Cooperative Extension Service