

KENTUCKY SOYBEAN RUST ACCOMPLISHMENTS DURING 2005

Soybean rust (SBR) was a top priority of the University of Kentucky, College of Agriculture in 2005. All of the issues and concerns brought out by the 2005 Kentucky Agriculture Advisory Council (see end of this document) were successfully addressed during 2005.

SBR Information, Education, Decision-aid, and Communication Needs Addressed:

1. D. Hershman and P. Bachi developed the Dept. of Plant Pathology SBR website (www.uky.edu/soybeanrust). The website includes a variety of educational resources, news stories, powerpoint programs, informational documents, pictures, and important SBR links. The website has had 21,305 hits since March 9, 2004. Additional electronic information was made available through the linked Dept. of Plant Pathology Extension homepage (www.ca.uky.edu/agcollege/plantpathology/extension/).
2. Clientele access to the UK SBR website was facilitated by listing the website as a “hot topic link” on the University of Kentucky, College of Agriculture web homepage (www.ca.uky.edu) . Also, the University approved the use of a shortened web address, which facilitated clientele access to the SBR website.
3. The UK Dept. of Entomology/Kentucky Integrated Pest Management Program provided the resources and personnel to develop and maintain two international SBR listservs that have played a major role in facilitating communication among scientists, university faculty, industry and commodity leaders, and state and federal government officials. These lists have played a key role in helping Kentucky clientele stay current.
4. D. Hershman co-authored and co-edited an international SBR publication: “Using Foliar Fungicides to Manage Soybean Rust”. He also developed a SBR Fungicide Use Guidelines Chart used in various states during 2005, including Kentucky. The College provided funds to purchase 5000 copies of the SBR fungicide publication, which were then made available to clientele free of charge. 1000 copies were given to the Kentucky Soybean Association for distribution to their membership. A supply of copies was sent to each county Extension office and copies were distributed at a range of educational meetings during 2005.
5. A nationally-developed and printed SBR disease identification pocket card was made available to Kentucky clientele, free of charge.
6. C. Lee, Extension Grains Crop Specialist in the Dept. of Plant and Sciences facilitated the electronic dissemination of SBR information (from various departments) via the UK Grains Crops website (www.uky.edu/Ag/GrainCrops/).
7. The Dept. of Agricultural Economics developed and posted electronic crop budgets (www.uky.edu/Ag/AgEcon/pubs/software/budgets_fieldcrop.html) that reflect fungicide

applications for SBR control. Cropping systems that may be considered as an alternative to soybean (i.e., wheat doublecrop grain sorghum) are also considered.

8. The College supported and co-sponsored 11 intensive SBR trainings that were offered, free of charge, to all clientele groups in early 2005. These meetings were co-sponsored by the Kentucky Soybean Promotion Board, and included a highly coordinated effort between various Extension offices, County ANR agents across the state, Extension administrators and support personnel, and faculty in the Departments of Crop and Soil Sciences, Biosystems and Agricultural Engineering, Entomology, and Plant Pathology. Information was provided on all aspects of SBR development and control, including use of fungicides, application technology, and effect of various agronomic practices (like row spacing and plant population) on SBR development and control. The target audience was producers, crop consultants, ag industry, government officials, county educators, specialists and researchers. Close to 1000 people attended the 11 trainings.

9. The College of Agriculture provided a forum to train County ANR Extension agents during the 2005 Ky State-wide Extension Conference. Participating departments included, Plant Pathology, Crop and Soil Sciences, Biosystems and Ag Engineering, and Agricultural Economics.

SBR Risk and Early Warning and Disease Management Needs Addressed:

1. D. Hershman designed and coordinated the KY Sentinel Network which consisted of 47 locations across 31 counties. Results of scouting activities were made available on the USDA public SBR website (www.sbrusa.net), in cooperation with USDA-APHIS, USDA-ARS, and 30+ states and Canada. The network effectively served as an early SBR warning system in 2005.

2. County ANR Extension agents from Ballard, Carlisle, Fulton, Hardin, Henderson, Hopkins, Logan, Marshall, McLean, Meade, Shelby, Spencer, and Todd supported and hosted SBR sentinel plots during 2005. Spore traps were located and managed by agents in Hardin, Henderson, McLean, Shelby and Todd Counties.

3. The UK Dept. of Plant Pathology provided a high level of diagnostic support, personnel, and resources to deal with additional commercial and sentinel network samples submitted to both Plant Disease Diagnostic laboratories.

4. D. Hershman made daily situational updates during season on a heavily used (10,000 hits June-Oct, 2005) SBR “hotline”, funded provided by the Kentucky Soybean Promotion Board. In addition, he developed at least weekly situational updates (“commentary”) and posted them on the USDA public SBR website.

5. The Dept. of Agricultural Communications Services provided the technical expertise and resources to develop Kentucky-based e-mail list that served as a primary means of communication to clientele about SBR issues and updates in 2005. D. Hershman regularly issued e-mail alerts and information using the College SBR list.

6. D. Hershman successfully worked with officials in the Kentucky Dept. of Agriculture to secure emergency use labels for 11 SBR fungicides during 2005.

7. Drs. C. Lee, D. Egli and J. Herbek (Dept. of Plant and Soil Sciences) developed a publication useful for estimating when different maturity soybean cultivars will reach flowering, a critical stage for susceptibility to SBR.

General Clientele SBR information needs addressed:

1. D. Hershman made SBR educational presentations at a large number of county grain meetings, field days, and regional grain meetings. He was information source for numerous KY-focused TV, radio, newspaper, e-magazine, and popular press articles, and was also regular source of information for a variety of national SBR informational outlets, including the Associated Press, www.stopsoybeanrust.com, DTN, Soybean Digest, Ag Day, and Ag Professional Magazine.

2. Faculty in the Depts. of Agricultural Economics, Biosystems and Agriculture Engineering, Plant and Soil Sciences, Entomology, Plant and Soil Sciences, and Plant Pathology answered a wide range of numerous clientele queries regarding the SBR threat.

3. The Dept. of Agriculture Communications Services provided personnel and resources to generate numerous press releases, radio stories, and video segments on SBR during 2005.

Research Needs Addressed:

1. D. Hershman, initiated two SBR fungicide use studies at the UKREC, Princeton, coordinated two SBR fungicide application studies in cooperation with local crop consulting groups, participated in a national SBR spore trapping project, and coordinated Kentucky's involvement in a southern regional SBR diagnostic project.

2. S. Kumudini and C. Lee in the Dept. of Plant and Soil Sciences initiated an international project aimed at helping soybean producers make appropriate fungicide spray decisions based on crop yield estimations and yield loss predictions based on levels of SBR.

3. UK Soybean breeder, T. Pfeiffer (Dept. of Plant and Soil Sciences) participated in 2005 SBR uniform nursery (seeking out resistance).

4. T. Stombaugh and S. McNeill and a graduate student in the Dept. of Biosystems and Agricultural Engineering, participated in a fungicide application technology study funded by the soybean growers in the North Central Region; faculty in that department took the lead in generating data on an improved way to measure fungicide deposition in the soybean canopy directly as it relates to SBR management.

Assesment of SBR Activities:

1. D. Hershman co-authored, distributed, and summarized international USDA Public SBR Website survey. This survey is being used by USDA- APHIS, USDA-ARS, and the Government Accounting Office in their reports to stakeholders and policymakers.

2. C. Lee developed and conducted a highly valuable survey of County ANR agents that helped 1) ANR agents in soybean counties, 2) Extension plant pathologists 3) Extension administration 4) USDA and the Government Accountability Office; and 5) Kentucky Government Officials determine how Kentucky's SBR efforts saved Kentucky soybean producers millions of dollars in 2005 by not spraying fungicides to control SBR when they otherwise would have.

D. Hershman Regional, National, International SBR Activities that Benefited Kentuckians:

a. Helped to design and implement the U.S. soybean rust surveillance network deployed in 2005.

b. Southern Region Coordinator for the U.S. Sentinel Plot Network and moderated weekly conference calls with southern state sentinel coordinators.

c. Managed two international SBR listservs, which greatly enhanced communication among university, government and industry scientists and key commodity and governmental leaders.

f. Participated in "SBR Mobile Team" visits organized by USDA-APHIS and USDA-ARS.

g. Chaired the committee that made recommendations to policy makers regarding the design of the 2006 SBR surveillance network and distribution of Federal funds to support activities.

i. Presenter at National SBR Symposium and industry-sponsored webcast seminar.

SBR Issues and concerns raised by the 2005 Kentucky Agriculture Advisory Council during 2005.

- Soybean Rust FIRST AND FOREMOST AT THE TOP OF THE LIST.
- Most will rely on the web site and/or email list serve. Need to make sure the internet is kept up to date in regards to RUST
- Need to consider training crop consultants so they will be ready when the time comes
- Need information on how row width and spacing and planting population will affect disease control
- Keep budget sheet up to date for estimated cost and return with added costs due to RUST issues

- How will Soybean Rust affect seed production?
- Continue to work on a resistant soybean cultivars to Rust
- Need to develop some warning system similar to the Blue Mold system