

and provide optimum yields and economic returns.

2. To evaluate the current University of Arkansas soybean management recommendations for completeness and determine where weaknesses in knowledge or information exist and further research is warranted.

3. To train new County Extension Agents in soybean production and provide experiences that will benefit the agent in his overall county programming with respect to soybean production.

**Production System Simple Averages (1983-2010) of the Soybean Research Verification Program.**

Production System	Number of Fields	Average Field Size (Acres)	Yield <sup>1</sup> (Bu/A)	Total Specified Operating Costs <sup>2</sup> (\$/A)	Break-even Operating <sup>3</sup> (\$/Bu)	Total Specified Operating and Ownership Costs <sup>4</sup> (\$/A)	Break Even Price <sup>5</sup> (\$/Bu)	Break-even Price With Land Costs <sup>5</sup> (\$/Bu)	Returns Above Total Specified Costs 75:25 Share <sup>7</sup> (\$/A)
Early Season Irrigated	14	87.4	53.2	\$109.84	\$3.03	\$224.48	\$3.86	\$6.27	\$11.29
Full Season Irrigated	247	51.6	43.9	\$110.05	\$2.37	\$139.13	\$1.13	\$5.11	\$55.73
Drought-tolerant Irrigated	48	55.3	43.7	\$117.84	\$2.78	\$173.84	\$4.11	\$6.38	\$25.08
Early Season Non-irr.	33	44.7	31.5	\$92.16	\$3.81	\$116.89	\$4.32	\$3.03	\$24.05
Full Season Non-irr.	74	47.5	32.2	\$94.54	\$2.45	\$127.03	\$4.80	\$5.62	\$49.08
Drought-tolerant Non-irr.	16	44.7	24.5	\$66.91	\$4.00	\$88.56	\$5.12	\$6.54	\$28.11
Sureka Case	26	48.2	32.2	\$114.51	\$4.01	\$156.47	\$5.51	\$9.91	(\$6.24)
Simple Averages	492 Fields	49.8	38.2	\$111.91	\$3.39	\$152.74	\$4.56	\$6.08	\$46.46

<sup>1</sup>Yields adjusted to 15 percent moisture.

<sup>2</sup>Specified out of pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

<sup>3</sup>Price per bushel received by the farmer to equal total specified operating costs. Does not include land, overhead, risk, and management cost.

<sup>4</sup>Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

<sup>5</sup>Price per bushel received by the farmer to equal total specified operating and ownership costs. Does not include fire, pest/diseases, risk, and management cost.

<sup>6</sup>Break-even price per bushel plus a 25 percent crop share rent. Does not include fire, pest/diseases, risk, and management cost.

<sup>7</sup>A 25 percent crop share rent was assumed as a crop charge for a farmer situation. No cost sharing was assumed. Calculation applies to all represented years.

## Program 15B-2

# ► Soybean Production 2012 – Reducing Risk

Presented by Dr. Ronnie Levy  
Soybean Specialist, LSU AgCenter

There are many production practices that reduce risk, but most come with a cost. Identify production practices that have been problems and take steps to reduce their risk. Use practices that have been proven to reduce risk. The costs of these practices often result in profitable dividends.

**Variety selection** - The single most important decision is variety selection. Spend the time to find proven varieties that have done well throughout your area and state. University Variety Trials are a great place to start. While one maturity group or variety may make production easy, select a few varieties from a couple of maturity groups best suited to your area. Environmental conditions have a major impact on yield. Growth stages spread over several weeks may capitalize on favorable weather instead of one bad weather event affecting the entire crop. Liberty-Link soybeans are an option to consider now that University yield data is available.

**Fertility - Soil Test!** Use recommended rates from reliable soils labs. Soil pH and availability of nutrients are the keys to healthy plants and high yields. Inoculate if there are any Bradyrhizobium japonicum bacterium concerns. Bradyrhizobium japonicum bacteria fix nitrogen from the atmosphere for use by the soybean plant. Low pH, sandy soils, flooded soil conditions, or no soybeans planted in the last three to five years would be a few of the reasons to inoculate. Soybeans require approximately four pounds of nitrogen per one bushel. Inoculation is very important! There are also many different inoculants on the market - they are not all the same.

**Seedbed Preparation** - Use a burn-down herbicide four to six weeks prior to planting. Even if you plan to use conventional tillage, a clean seedbed will allow planting when weather is

favorable. Stale seedbed preparation is another tool that facilitates early planting. When seedbeds are prepared in the fall, planting can begin after a timely burn-down application. With a narrow planting window, this may allow for planting at the optimum time. Resistant weed problems and early season insect pests can also be reduced.

**Weed Control** - Use a pre-emergence herbicide. Early weed competition robs yield. While glyphosate has been the mainstay of weed control in recent years, resistant weeds and timely applications present problems. Liberty-Link soybeans are an option to consider. Pre-emergence herbicides give you time to plant your crop before weeds escape. Rotation is another practice that should be included in your farm plan. Rotation between a grass crop and soybeans goes a long way in reducing weed problems.

**Insect and Disease control** – Timing! Due to numerous insects and diseases that attack soybeans, proper timing of insecticides and fungicides is a must. Scout fields weekly and treat when thresholds are reached. After treating, check results and retreat as needed. Soybean seed quality at harvest is a result of proper timing of insecticides and fungicides. Insects and diseases can reduce photosynthate production, cause pod abortion, and/or plant death. While environmental conditions at harvest affect quality, insect feeding on pods can compromise the integrity of the pods providing sites for disease and moisture to attack the developing seed.

**Harvest Aids** - Harvest aids can reduce foreign matter and increase harvest efficiency. Weed problems may result in shattering losses and further delays due to wet weather. Weeds could also be more serious in following years because of the extra time weed seeds have to reach maturity. Harvest aids reduce these problems and may also aid in the desiccation of soybeans. Mature pods on soybean plants with green leaves and green stems are a major problem in soybeans grown in the South. Proper timing of harvest aids is essential. Research has shown harvest aids could be applied to determinate and indeterminate varieties when all seeds separate easily from the pod membrane in the top four nodes. Applying harvest aids earlier resulted in reduced yields. Check all areas of the field. Use recommended rates when applying harvest aids.

**Marketing Plan** - Good record keeping produces sound marketing plans. If you don't feel comfortable marketing your soybean crop look for help. There are experts in designing marketing strategies.

#### Program 7SB-1

## ► **Anthem™: New Soybean Herbicide** **From FMC Corporation**

**Presented by Dr. Rusty Mitchell**

*Technical Support Lead, Southern Region, FMC Corporation*

Anthem™ (F9310) is a new herbicide under development by FMC Corporation. Anthem is a premix of pyroxasulfone plus fluthiacet-methyl and can be applied preplant, preemergence and postemergence for control of difficult to manage grass and broadleaf weeds in soybeans. Anthem will be formulated as a 2.15 pound per gallon suspoemulsion liquid.

Anthem has been evaluated in private and university soybean weed management research programs during the past two years for its potential fit as a grass and broadleaf weed control herbicide in soybeans. Results presented herein are a compilation of experiments conducted in 2011 by private and university personnel with Anthem applied preemergence and early-postemergence at a rates ranging from 0.084 to 0.134 lb ai/A for crop tolerance, weed efficacy and subsequent effects on yield. Trials were conducted across various soil types and geographic locations of major soybean growing areas and comparisons were made against commercial standard preemergence and postemergence herbicides for soybeans.

Anthem was evaluated at 0.134 lb ai/A applied preemergence, 0.1 lb ai/A applied postemergence, and 0.084 to 0.1 lb ai/A applied pre and/or postemergence in a treatment combination or an overlap system with an Authority® based herbicide applied preemergence. Visual evaluations included crop response at 14 and 28 days after crop emergence for preemergence applications and 7 and 21 days after postemergence applications. Weed control ratings for preemergence application were taken just prior to a glyphosate postemergence treatment.