

## 2014 Mid-South Soybean Board Member Projects by Board Summary



Arkansas Soybean Promotion Board

Defining potassium nutritional requirements for soybean with indeterminate growth habit	\$39,000
Plant, soil, and weather based cues for irrigation timing in soybean production	\$25,000
Developing cultural management practices for winter cover crops to improve soybean performance and yield in the full season soybean production system	\$66,000
Investigating emerging production recommendations for sustainable soybean production in all soybean production system	\$125,000
Integration of brassica winter cover crops into soybean production systems for the suppression of nematodes and other soilborne diseases	\$25,000
A team approach to weed management in soybean	\$229,000
Fertilization of soybean	\$70,000
Understanding Neocosmospora, Thielaviopsis and Fusarium Virguliforme in early season production systems	\$59,000
Foliar disease management in full and double crop soybean production systems in Arkansas	\$36,000
Soybean research verification program	\$90,000
Improving yield and yield stability for irrigated soybeans	\$151,000
Breeding new soybean cultivars with high yield and disease	\$200,000
Characteristics of maximum yield soybean fields	\$79,000
Industrial CLA-rich soy oil production and marketing through a Division of Agriculture-Riceland Foods research collaboration	\$50,000
Fire ant control in soybean	\$11,000
The Arkansas Discovery Farm program	\$17,000



**Arkansas Soybean Promotion Board**

Using spatial distribution and time of colonization of Rhizoctonia solani	\$42,000
Broad-range approaches to determining salt tolerance in Arkansas soybean varieties	\$67,000
Developing profitable irrigated rotational cropping systems for Arkansas and mid-south	\$9,000
Alternative winter crops for soybean double crop system	\$30,000
Development of an effective program to manage strobilurin-resistant frogeye leaf spot in Arkansas	\$51,000
Comprehensive disease screening of soybean varieties in Arkansas	\$132,000
Assessment of soybean varieties in Arkansas for sensitivity to chloride injury	\$32,000
Soybean enterprise budgets and production economic analysis	\$19,000
Sustaining water resources in mid-south soybean	\$40,000
Development of an on-line course - future of biotechnology crops	\$9,000
A soybean nematode survey and education program for Arkansas	\$65,000
Decadal effects of residue and water management practice alternatives on soybean yield and soil properties in a wheat-soybean double-crop production system	\$46,000
Improving technology transfer for profitable and sustainable soybean production	\$20,000
Integrated management of soybean nematodes in Arkansas	\$47,000
Validating soil-test based fertilizer recommendations for soybean	\$26,000
Screening for soybean tolerance to metribuzin	\$16,000
Purification and production of pre-foundation seed of UA soybean lines	\$30,000
Dissecting the epidemiology and resistance to soybean vein necrosis virus	\$80,000



## Arkansas Soybean Promotion Board

Establishment of drought-tolerant soybean plants by genetic manipulation of ERECTA signaling	\$35,000
Flag the Technology	\$101,000
Production and maintain high quality soybean seed in Arkansas and grower education	\$75,000
Developing a new threshold for corn earworm, <i>Helicoverpa zea</i>	\$26,000
Irrigation pumping plant efficiency	\$45,000
Drought tolerance research - tagging drought tolerance genes using rapid screening methods	\$76,000
Screening soybean germplasm and breeding soybeans for flood tolerance	\$46,000
Economics of multiple water-saving technologies across the Arkansas delta region	\$47,000
Technological aids for information dissemination to soybean producers	\$13,000
Increasing the soybean meal content of diets for largemouth bass by using meals with improved protein and amino acid content and reduced anti-nutritional factors	\$33,000
Innovative and value-added products from Arkansas grown non-GMO soybeans for potential commercialization	\$67,000
Survey of seed pathogens in seed samples submitted to the variety testing program using DNA based diagnostics	\$28,500
Soybean germplasm enhancement using genetic diversity	\$148,000
Bee project: assessing the impact of Neonicotinoid seed treatments on pollinators	\$25,000
Edamame production recommendations	\$80,000
Characterize the functionality of soybean seed coats and evaluate novel prebiotic fibers from soy in humans	\$36,000
Improving germination rate of soybean seed dried using recently-introduced in-bin drying systems agents with commercialization potential	\$41,000
Soybean Science Challenge	\$76,000



**Arkansas Soybean Promotion Board**

Application Technology Demonstration and Education Program for Arkansas Crops	\$78,000
A new transgenic approach to control diseases of soybean in Arkansas	\$58,000
Use of a plant elicitor peptide for broad-spectrum nematode resistance	\$36,000
Educating growers and consultants on insect monitoring and control	\$5,000
<b>Arkansas Subtotal of (56) Projects:</b>	<b>\$3,208,500</b>



**Louisiana Soybean & Grain Research & Promotion Board**

Soil Test Calibration And Fertilization Research For Sustainable Soybean And Corn Production In Louisiana	\$31,058
In-Field Evaluation Of Soil Fertility For Soybean And Corn	\$13,903
Using Molecular Biology To Control Soybean Diseases: Cercospora Leaf Blight And Rust	\$55,928
Supplement to Biology and Control of Major Diseases of Soybean	\$16,000
Re-evaluation Of Threecornered Alfalfa Hopper Pest Status In Louisiana Soybeans	\$14,950
Weed Management And Biology Research In Soybeans	\$40,000
Electrically-Charged Fungicide Adjuvant	\$28,000
Cercospora Leaf Blight Disease of Soybean-Screening Soybean Varieties for Differences in the Expression of Resistance Genes	\$35,055
Measuring Yield Losses Due To Diseases Of Soybeans	\$24,000
Soybean Disease (including Rust) Sentinel Plot Scouting Program	\$27,500



## Louisiana Soybean & Grain Research & Promotion Board

Surveying Louisiana Soybeans for Soybean Vein Necrosis and Soybean Mottle	\$20,000
Soybean Looper Population Growth Rates on Herbicide Resistant Weeds	\$16,480
Improving Management of Double Crop Soybean Production	\$26,559
2014 Louisiana Soybean & Grain Research & Promotion Board Report	\$4,500
Biology and Control Of Major Diseases of Soybeans	\$94,613
Timing Of Irrigation Initiation And Termination On Soybean Yield In Northeast Louisiana	\$18,177
Soybean Weed Control Research In Northeast Louisiana	\$36,800
Optimizing Chemical Control Strategies For Louisiana Soybean Pests	\$26,506
Evaluation of Management Practices and Variety Selection for Improved Soybean Seed Quality	\$22,630
Integrated Mgt of Changing Soybean Insect Pest Complexes	\$57,350
Evaluation Of Cercospora Leaf Blight And Purple Seed Stain In Louisiana	\$30,893
Evaluation Of Soybean Cultivars And Fungicides For Disease Management In Northeast Louisiana	\$26,006
Soybean And Grain On-Farm Demonstration Program - 2013	\$50,000
Optimization of Potassium Fertilization for Corn and Soybean Production	\$15,668
Agronomic Research and Extension To Improve Soybean Production In Louisiana	\$25,000
Soybean Breeding And Variety Development	\$26,113
Evaluation Of Soybean Cultural Practices In Southwest Louisiana	\$64,710
Development of Methods Assessing the Effects of Drought and Salt Stress on Soybean Insect Management	\$3,500



### Louisiana Soybean & Grain Research & Promotion Board

Development of Technologies to Reduce Off-target Spray Drift in Soybeans	\$12,500
Soybean Weed Management Systems In Louisiana	\$55,000
<b>Louisiana Subtotal of (30) Projects:</b>	<b>\$919,399</b>



### Mid-South Soybean Board

Irrigation Water Management for Southern Region Soybean Growers (Year 1 of 4)	\$50,000
Effects of the Introduction of Feed Grains into Mid-South Soybean Production Systems (Year 2 of 6)	\$201,000
Effect of Planting Date, Latitude, and Environmental Factors on Choice of Maturity Group in Mid-South Soybean Production (Concluded Year 3 of 3 – Currently working on 1 YR Extension)	\$50,000
<b>Mid-South Subtotal of (3) Projects:</b>	<b>\$301,000</b>



### Mississippi Soybean Promotion Board

Soybean vein necrosis virus (SVNV) in Mississippi, 66-2014	\$49,391
Web application for flexible pipe calculation system, 76-2014	\$26,487
Soybean physiological maturity: documentation and developing a tool for management, 75-2014	\$100,718
Determine irrigation rate and timing, and water availability for optimum yield, water use efficiency, and profitability of soybean in Mississippi Blackland Prairie region, 62-2014	\$25,000



## Mississippi Soybean Promotion Board

MSU-ES on-farm soybean variety demonstration program, 57-2014,	\$46,624
Three-cornered alfalfa hopper (TCAH) management in soybeans, 17-2014,	\$50,820
Mitigating herbicide spray drift under field conditions, 44-2014	\$38,167
Row crop irrigation science extension and research (RISER) program, 55-2014	\$137,256
Developing strategies for improving furrow irrigation efficiency, 54-2014,	\$76,100
Developing profitable deficit irrigation guidelines for Mississippi soybean production systems, 53-2014	\$98,497
Developing scientific irrigation scheduling methods for Mississippi soybean production systems, 52-2014	\$34,977
Bufkin Fellowship: Effect of fall-seeded cereal cover crops when used in soybeans for control of Palmer amaranth in Mississippi soybeans, 51-2014,	\$68,000
Farm Families of Mississippi, MFBF, 50-2014	\$15,000
Estimation of deer damage to soybean production in Mississippi spatial and temporal context, 48-2014	\$28,281
Lepidopteran insect pest management in soybeans, 01-2014	\$72,163
Development of Phomopsis seed decay-resistant soybean lines from new sources of resistance, 28-2014	\$18,000
Surface conditions affecting likelihood of temperature inversions and timing of aerial spraying, 47-2014	\$10,463
Determining the effect of low concentrations of dicamba and 2,4-D on soybean growth and yield, 42-2014	\$37,469
Video support for Mississippi soybean producers, 41-2014	\$16,203
Yield and economic responses of soybean to irrigation initiation on clay soil in Mississippi, 40-2014	\$25,322
Characterization of the resistance potential for the diamide insecticides Belt and Prevathon, 37-2014	\$37,316
Provide in-field soybean diagnostic service for Mississippi soybean producers, 35-2014	\$10,000



## Mississippi Soybean Promotion Board

Development of a seedling inoculation technique to evaluate soybean for resistance to Phomopsis seed decay, 34-2014	\$26,679
Development of reniform nematode resistant soybean lines from JTN-5203, PI 404166, and 02011-126-1-1-5-1-1 soybean, 33-2014	\$23,300
Phenotyping F2 populations segregating for frogeye leaf spot resistance, 32-2014	\$24,500
Blaine Fellowship Managing charcoal rot using soil incorporated nutrients, 72-2014	\$70,800
Remote sensing of row crops with small unmanned aerial vehicles (UAV), 46-2014	\$2,700
Soybean response to N addition in high yield environments, 27-2014,	\$22,770
Large-scale drift assessment with aerial imagery and ground-based spectral reflectance, 45-2014	\$39,667
Evaluation of soybean plant response to tillage system, 02-2014	\$12,000
Bee project: Assessing impact of neonicotinoid (NEO) seed treatments on pollinators, 59-2014	\$54,948
Impact of irrigation initiation timing on plant development and yield of indeterminate and determinate soybean varieties, 56-2014	\$48,890
Characterization of endophytic microbial communities associated with charcoal rot disease in soybean, 60-2014	\$61,064
Impact of planting date and maturity group on management strategies for insect pests in Mississippi, 58-2014	\$58,647
Investigations into strobilurin fungicide resistance of soybean pathogens in Mississippi, 61-2014	\$53,585
Corn and soybean crop residue management impact on soil quality, yield, and returns, 25-2014	\$36,714
Correlation of soil test K and P indices with plant tissue concentrations and soybean yield, 22-2014	\$34,406
Response and net profit of genetically enhanced and conventional soybean varieties to fertilizer recommendations on low nutrient soils in rainfed and irrigated production systems, 21-2014	\$57,616
Agronomic and economic evaluation of soybean/corn rotation with twin- row production and increased nutrient management, 07-2014	\$22,678
Effect of spray additives on spray droplet size, coverage, and efficacy, 04-2014	\$15,131





### Mississippi Soybean Promotion Board

Determining environmental management schemes to influence the development of high seed quality in MG IV and MG V soybean, 14-2014,	\$90,699
Support of Delta Agriculture, Delta Council, 05-2014	\$15,000
Addressing critical weed control issues in soybean, 20-2014	\$121,608
Costs and benefits of on-farm water storage (OFWS) systems, 10-2014,	\$67,896
Soybean storage profitability and marketing strategies for Mississippi soybean growers, 11-2014	\$30,792
Nematode management investigations in Mississippi soybean production systems, 12-2014	\$38,808
Evaluation of the inheritance of resistance to Phomopsis seed decay (PSD) in PI 458130 populations, 31-2014	\$43,303
Soybean disease monitoring for Mississippi soybean producers ,15-2014,	\$50,000
Delta agricultural weather project, 29-2014	\$23,889
Evaluation of private and public soybean varieties and breeding lines for resistance to stem canker, forgeye leaf spot, purple leaf and pod stain, black root rot, and rust, 19-2014	\$49,093

Mississippi Subtotal of (50) Projects: **\$2,219,437**



### Missouri Soybean Merchandizing Council

Defense peptides to protect soybean from rust	\$78,100
Lunasin attenuates age-related chronic kidney disease	\$0
Microbial digestion of soybean hulls	\$0
Advanced biotechnologies for soybean breeding and nutritional enhancement	\$0



## Missouri Soybean Merchandizing Council

High throughput cloning and functional characterization of molecular switches for stress tolerance and enhanced seed composition in soybean	\$0
Molecular-genetic regulation of seed oil accumulation in soybean	\$0
Genetic modification of sterol composition in soybean seeds	\$0
Translational genomics for drought tolerance in soybean	\$91,973
Identification of genes for resistance to multi-soybean nematode species	\$89,917
Using microgenomics to identify new sources of soybean cyst nematode resistance in soybean	\$81,649
Evaluation of exotic germplasm for drought tolerance	\$0
Genetic engineering for yield improvement in soybean	\$50,000
Evaluation of evaluated oleic acid germplasm for development of soybeans with high oleic acid.	\$79,190
Development of soybeans with improved functional traits for Missouri	\$185,736
Sudden death syndrome and Asian rust resistant transgenic soybean	\$112,544
Novel construct design for plant gene silencing employing artificial tasiRNA	\$83,502
North Missouri soybean breeding program	\$367,288
Germplasm identification and selection for soybean cyst nematode	\$82,478
Support of MU weed science Extension efforts directed towards the management of glyphosate-resistant weeds	\$10,000
Improving rumen stability of soybean meal protein	\$0
Evaluation of germplasm and genetic mapping for flooding tolerance in soybean	\$84,640
Is the allergen affect on pigs a myth?	\$0



## Missouri Soybean Merchandizing Council

Development and deployment of biotechnology for soybean improvement	\$194,225
CAFNR undergraduate soybean industry research scholars	\$16,000
To develop productive group IV and V soybeans resistant to nematodes and diseases	\$238,110
Development of soy based nanostructured materials for application as structural foams and adsorbents	\$30,300
Missouri Green Fields Initiative	\$0
Assessing nutritional value of soybean meal: identifying nutritional traits that would improve market position of soybeans	\$126,915
Identification and characterization of soybean germplasm to improve drought tolerance	\$72,003
Improving heat tolerance: Identification and characterization of soybean germplasm	\$90,633
Assessment of flavor scalping and/or alteration of flavor by cured epoxidized allyl soyate EAS based can coatings	\$14,545
NIR analysis of variety testing and contest beans	\$15,000
Utility of subsurface drip irrigation for soybean production	\$49,088
Genetic engineering to enhance oil traits in soybean	\$175,265
Management of insecticide resistance in corn earworm populations	\$69,334
Novel strategy for gene stacking through coordinated gene expression	\$83,873
Using soybean meal protected from rumen degradation to improve health of receiving calves and feed efficiency of stocker and feedlot calves	\$85,700
Nutritional evaluation of soybean meal generated from high oleic acid soybeans	\$52,608
Discovery of yield genes for soybean improvement	\$112,917
Improving soybeans for increased productivity on specific soil types -- sand, loam and clay	\$32,000



Missouri Soybean Merchandizing Council

Bioheat Technical Steering Committee	\$25,000
ASE certified diesel technician training and education	\$25,000
Bioheat Technical Steering Committee - BTSC data needed to ballot legacy safe blend level	\$25,000
Southern blot analysis of transgenic soybean - Glycine max plants to determine transgenic status and copy number of the DGAT1 and cysteine oleosin genes	\$150,000
North Central Soybean Research Program	\$30,000
Costa Rica breeding project	\$150,000

Missouri Subtotal of (46) Projects: **\$3,260,533**



Texas Soybean Promotion Board

\$0

Texas Subtotal of (0) Projects: **\$0**

**Grand Total of (185) Projects: \$9,908,869**