

**Plants & Plant Products**  
**Planning & Program Evaluation Logic Model (2009-2013)**

**Brief Program Summary**

Arkansas ranks as one of the primary agricultural states in the nation. Row crops are grown on over six million acres of farm land and, along with forestry, contribute over \$3 billion to the state's economy annually. Arkansas is the largest producer of rice in the nation and is a major producer of soybeans, cotton, soft red winter wheat, and grain sorghum. Although small in size, fruits and vegetables are a significant and growing industry. Turf, ornamentals and landscape plants are the fastest growing segment of the agricultural industry nationally. Both large and small farms continue to be an important part of the state's economy.

The University of Arkansas, Division of Agriculture strives to increase efficiency of crop and forage production through research and education focusing on best management practices, to ensure that producers remain competitive in the global economy, while protecting our natural resources. Research and educational programs addressing cultivar/hybrid development and selection, soil fertility requirements, production practices, timing of inputs, crop rotation benefits, and irrigation timing are key factors involved in increased crop yields that were seen in the state this past year. Areas of educational emphasis included variety selection, groundwater management and conservation, nutrient management, and controlling of diseases.

Soil, plant, water and nutrient relationships are key factors involved in increasing the efficiency of crop production. Soil testing is the foundation of a sound fertility program and nearly 100,000 soil samples are received at the Soil Lab at Marianna. Soil testing not only provides a guide to develop fertilizer recommendations for the intended crops, but also, together with plant analysis, can aid in the identification of potential problems.

Plant management systems are key to helping producers who are often challenged by the large volume of varieties/hybrids available to find varieties/hybrids that will perform well on their farm. In 2007, 80 wheat varieties, 82 corn hybrids, 22 grain sorghum hybrids, 158 soybean varieties, 23 rice varieties/hybrids, and 75 cotton varieties were tested in the Arkansas Variety Testing program. The Cotton Verification Program demonstrated that variety selection can improve income per acre by an average of \$100 and that proper timing of cotton harvesting returned \$50 to \$75 per acre.

Horticulture (commercial production and service industries and recreational/home clientele) contributes to the state's economy and improves the quality of the environment and the quality of life lives for many Arkansans. Existing and new horticulture businesses and farms require training and exposure in new plants and production methods to stay competitive and to develop best management practices. Consumers require training and education in various aspects of home horticulture.

The forage production research and management programs provide research-based information through non-formal educational methods for the sustainability of agricultural production systems to improve Arkansans quality of life.

**ASSUMPTIONS**

While average yields for most commodities grown in Arkansas have increased significantly, Arkansas producers continue to face many challenges in order to produce profitable crops and maintain sustainability of land. The most significant issues include optimum variety selection, diminishing irrigation water quantity, integrated pest management issues, nutrient management, and soil conservation. Many of these issues are addressed through education programs and various verification programs which are providing growers with key recommendations for efficient production, weed control issues, and other resources. Cooperative efforts with grower groups, commodity boards, regulatory agencies, and other organizations also provide valuable feedback in programming on a regional and statewide basis. On-farm research results generate data from which recommendations are derived.

The majority of county Extension Councils in Arkansas have identified horticulture as a major emphasis area for their long range educational program. Horticulture inquiries are an increasing demand on the county agent's time and few have training in these diverse subjects. With support from the state horticulture staff, they will be able to better serve their clientele. New and existing horticultural production and service industries require on-going research and educational assistance in developing and adapting new technology and best management practices.

Because of the abundance of natural resources (water, land, etc.), livestock production will continue to be a major industry in Arkansas. The Cooperative Extension Service continues to develop programming needs through a grass-roots programming effort. Therefore, identifying and implementing programs needed by the producing clientele will address their needs. Livestock producers will face ever changing challenges, and they will look to the UA Division of Agriculture to help them face those challenges.

Inputs Resources & Activities	If, then	Methods	If, then	Target Audience(s) Participation	If, then	Short-Term Impact	Medium-Term Impact	If, then	Long-Term Impact
<ul style="list-style-type: none"> <li>Develop and conduct workshops, educational meetings, demonstrations, and field days</li> <li>Direct clientele contact: on- site visits, phone calls, mail and emails</li> <li>Develop and produce educational products and materials</li> <li>Conduct tours and demonstrations</li> <li>Conduct discovery and applied research</li> <li>Publish educational materials</li> <li>Provide diagnostic services</li> <li>Media work through print, radio, TV and internet</li> <li>Partnering with commodity associations, groups, Master Gardeners, and traditional and nontraditional groups</li> <li>Coordination of Master Gardener programs</li> <li>Develop improved crop production systems that maximize profitability and sustainability</li> </ul>	➔	<p><b>Direct Methods</b></p> <ul style="list-style-type: none"> <li>Education Class</li> <li>Demonstrations</li> <li>Other 2 (Soil/Water Testing)</li> <li>Group Discussion</li> <li>One-on-One Intervention</li> <li>Workshop</li> <li>Other 1 (Farm Visits/Field Days)</li> </ul> <p><b>Indirect Methods</b></p> <ul style="list-style-type: none"> <li>Newsletters</li> <li>Web sites</li> <li>Other 1 (Grants/Prof. Publications)</li> <li>Other 2 (Mass Media)</li> </ul>	➔	<ul style="list-style-type: none"> <li>Growers/producers</li> <li>Consultants</li> <li>Agri Business/Allied Industries</li> <li>Horticulture production and Service Businesses</li> <li>Master Gardeners</li> <li>General Public</li> <li>Other researchers</li> <li>Students</li> <li>Extension Specialists</li> <li>Teaching faculty</li> <li>Research funding personnel and agencies</li> <li>Public</li> </ul>	➔	<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li># of commercial forage producers who gained knowledge related to management technology</li> <li># of commercial forage producers who gained knowledge related to production practices</li> <li># of new Master Gardeners trained and certified</li> <li>Peer Reviewed Publications.</li> </ul>	<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li># of participants who changed or adopted a new commercial forage management practice</li> <li># of participants who changed or adopted a new forage and/or grazing management practice</li> <li># of clientele who select improved varieties</li> <li># of clientele using soil testing</li> <li># of clientele using plant testing</li> <li># of clientele using water testing</li> <li># of impacted acres using soil testing</li> <li># of impacted acres using plant testing</li> <li># of impacted acres using water testing</li> <li># Forage testing submissions</li> <li># of producers using strip-grazing for their stockpiled forages</li> <li># of clientele (non-duplicated) who use the DD50</li> </ul>	➔	<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li># of acres planted based on output from RICESEED program</li> <li># of new horticultural businesses and new farmers markets</li> <li>Acres of harvested wheat (all)</li> <li>Yield (bushels) of harvested wheat (all)</li> <li>Value of production of harvested wheat (all)</li> <li>Acres of harvested soybeans (all)</li> <li>Yield (bushels) of harvested soybeans</li> <li>Value of production of harvested soybeans (all)</li> <li>Acres of harvested rice (all)</li> <li>Yield (pounds) of harvested rice (all)</li> <li>Acres of harvested cotton (all)</li> <li>Yield (pounds) of</li> </ul>

