



A New Five Year Plan for USDA ARS Rice Research

Dale Bumpers National Rice Research Center, Stuttgart, Arkansas
Rice Research Unit, Beaumont, Texas



The USDA ARS Rice Research Unit is co-located on the Texas AgriLife Research Campus at Beaumont, TX.



The USDA ARS Dale Bumpers National Rice Research Center is located adjacent to the University of Arkansas Rice Research and Extension Center in Stuttgart, AR.

ARS Strategic Research Plan

The USDA Agricultural Research Service (ARS) has developed a roadmap for accomplishments for the agency over the next several years based upon input from scientists, stakeholders, and customers that are impacted by our research. Each research location operates under a 5 year research plan that addresses issues important to the nation as a whole as well as regional and local interests. In 2008, a new research plan was initiated using the combined talents of 11 ARS scientists located at the Rice Research Unit in Beaumont, TX and at the Dale Bumpers National Rice Research Unit in Stuttgart, AR. Research is being conducted according to two major research projects that facilitates scientists from both locations working together in teams to address research able issues important to the US rice industry and research community.

Project: Development and Characterization of Genetic Resources for Agronomic and Quality Traits

Objectives

Characterize genetic accessions stored in the USDA rice germplasm collection to identify valuable materials that can be used to improve US rice cultivars.

Determine the genetic diversity of accessions in a core subset of the USDA rice collection.

Expand and distribute seed of the Genetic Stocks *Oryza* rice collection consisting of mutants, mapping populations, and other genetic resources.

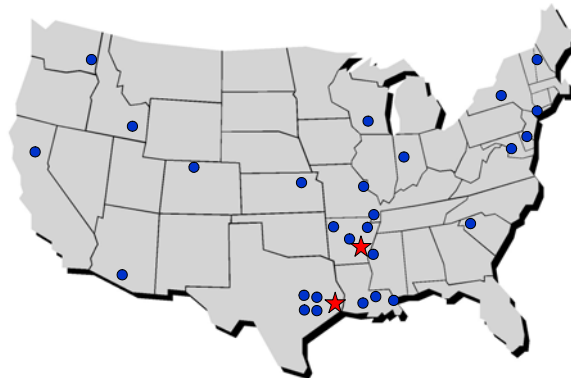
Evaluate genetic resources having enhanced nutritional properties and added value for use by the food industry.

Map new resistance genes for blast and straighthead diseases.

Map genes associated with cooking quality traits, including paste viscosity and grain chalk.

Determine how cultivar performance and environment impact starch structure in the rice grain and cooking quality.

Location of Universities in Collaboration with USDA ARS Rice Research Programs at Stuttgart, AR and Beaumont, TX



Project: Response of Diverse Rice Germplasm to Biotic and Abiotic Stresses.

Objectives

Map genes associated with resistance to sheath blight disease that can be used by breeders in marker-assisted selection.

Identify sources of resistance to kernel and false smut diseases and determine cultural management methods that reduce their occurrence.

Elucidate physiological, cultural, and genetic factors that control tillering and cold temperature seedling vigor.

Determine chromosomal location of genes which control grain shape, disease resistance, and yield using weedy relatives of rice.

Identify growth factors in weed-suppressive rice germplasm that reduce weed species populations.

Determine parameters which influence gene flow between cultivated and weedy red rice.



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