

# ► Clearfield Lines In The Arkansas Breeding Program Pipeline

**Presented by Dr. Karen A.K. Moldenhauer**

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'CL171-AR' rice (*Oryza sativa* L.), is a high-yielding, midseason, long-grain Clearfield rice cultivar developed by the Agricultural Experiment Stations of Arkansas and Louisiana. Clearfield technology denotes resistance to the herbicide Newpath in the rice cultivar. CL171-AR originated from the cross 'Wells'/CL161' made at the Rice Research Station at Crowley LA in conjunction with Dr. Tim Croughan in 1999. CL171-AR was approved for release to BASF for further testing during 2006. It has good rough rice yields with good milling yields similar to CL161. CL171-AR has lodging resistance like that of Wells rating moderately susceptible, and its maturity is similar to CL161 and 'Cypress'. The grain weight and kernel size of CL171-AR is similar to that of LaGrue. CL171-AR rates susceptible to rice blast in Arkansas conditions, susceptible to moderately susceptible to sheath blight and susceptible to kernel smut. CL171-AR is similar to its parent CL161 for grain and milling yields and has typical southern U.S. long-grain cooking quality. The major advantage of the cultivar over the other Clearfield lines is its improved disease package. Seed will be available for planting of CL171-AR in 2008.

# ► Management Of Diseases In Minimum Tillage Crops

**Presented by Dr. Scott Monfort**

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In Arkansas, over the last five years, reduced (minimum) tillage has become increasingly popular especially in crops like cotton. This is largely due to a dramatic increase in input costs like fuel, fertilizers, and equipment. Adapting from conventional tillage practices to minimum tillage practices has translated into decreased overhead labor and input costs, as well as reduced crop management and in field time. This adoption of minimum tillage over large acreage and crops, like cotton and rice, in Arkansas and other states have brought about some major concerns in disease management. Certain disease pathogens can be more severe in minimum tillage systems, while, other disease pathogens may actually be less severe. Stand establishment diseases caused by *Pythium*, *Rhizoctonia* and other fungi are often the most important problems in minimum tillage fields. These problems can be especially damaging in Rice and Cotton. *Thielaviopsis basicola* is a seedling disease in cotton that can be impacted by an increase in minimum tillage acreage. Also impacted by a reduction in tillage practices are foliar diseases. Infestation of future crops may occur where infected plant residue is left near or on the soil surface allowing higher levels of inoculum to over winter and, therefore, infect future crops. In corn, gray leaf spot is one disease that favors minimum tillage and residual plant material, whereas, some *Cercospora* species have been found to be suppressed by minimum tillage. Knowing the potential effect of tillage on disease incidence and severity can help a producer plan effective strategies for minimizing the diseases.

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