

FIELD VALIDATION OF IRRIGATION PLANNING TOOLS IN MAJOR ARKANSAS CROPS**A. L. Lewis****Arkansas State University****Jonesboro, AR****M.L. Reba****USDA-ARS****Jonesboro, AR****T. G. Teague****E. J. Kelly****University of Arkansas/ Division of Agriculture****Jonesboro, AR****C. G. Henry****University of Arkansas/ Division of Agriculture****Stuttgart, AR****E. D. Vories****USDA-ARS****Portageville, MO****D. K. Morris****Arkansas State University****Jonesboro, AR****Abstract**

Improving water management is a key component to improving the sustainability of agriculture in the Midsouth region. The objective of this research was to field test wetting front advance detection (WFAD) units. Studies show that polyacrylamide, or PAM, influence the amount of time it takes to irrigate a row crop field. Advance times in furrows treated with PAM were compared to untreated furrows in a plot scale study in northeastern Arkansas. WFAD units were deployed in the middle and lower portions of the furrows to track advance times. WFAD units included water detecting probes and a GPS to geo-reference each data collection point. PAM and the WFAD units were deployed prior to the irrigation event to initiate this study and the advance times were recorded. Results indicated that water advanced through PAM treated rows at a faster velocity compared to the untreated furrows. PAM treated furrows made contact with the WFAD units located in the middle of the furrows an average of four hours before the untreated middle furrows. Data also indicated that PAM treated furrows made contact in the lower portion of the furrows an average of five hours before the untreated lower furrows. This study illustrated the importance of incorporating WFAD units to track advance times in furrow irrigated crops and help to conclude that the addition of PAM would increase irrigation advance times.