PANEL DATA ANALYSIS OF U.S. COTTON YIELDS Archie Flanders University of Arkansas Keiser, AR

<u>Abstract</u>

U.S. cotton yields greatly increased during 2002-2010. Much of this time period is characterized by cotton acreage decreases. This analysis decomposes yield increases into components of technological change and other factors that impact cotton yields. State data are applied for 17 upland cotton producing states during 2002-2010. The computational model is Yield=f(Acreage Planted, Acreage Abandonment, Environmental Conditions, Revenue\Production Costs, Technology). Model estimation is a fixed one way panel data analysis with heteroscedasticity and autocorrelation consistent standard errors. The parameter estimate for acreage planted is not statistically significant. All other explanatory variables are statistically significant with positive signs. The results are summarized as technological change in cotton production has led to increased yields, and acreage shifts do not have a significant relationship with yield increases.