

1219 Cotton lint yield response to long term application of poultry litter under conservation tillage systems

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A field experiment was conducted at Belle Mina, AL during 1996-2006 to evaluate the effects of poultry litter application on cotton. Treatments consisted of conventional tillage (CT), mulch-tillage (MT), and no-tillage (NT) with or without winter rye [*Secale cereale* (L.)] cover cropping and ammonium nitrate and poultry litter as sources of nitrogen. In 1997, 2000 and 2004 conservation tillage systems, NT (1356, 1242 and 1097 kg ha⁻¹, respectively) and MT (1151, 1321 and 1180 kg ha⁻¹, respectively) gave significantly higher lint yields compared to CT (1104, 1159 and 1058 kg ha⁻¹, respectively). Winter rye cover cropping significantly increased cotton lint yields in four out of seven years. Among nitrogen sources poultry litter at 200 kg ha⁻¹ N recorded significantly higher lint yield in all years. Application of 100 kg ha⁻¹ N either in the form of poultry litter or ammonium nitrate gave similar yields in almost all years. These results indicate that applying locally available poultry litter waste in cotton production system is very useful in improving cotton lint yields under all tillage systems.