# Tillage and Poultry Litter Effects on Soil Carbon and Nitrogen in North Alabama. (S04-parker122009-Poster)

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## Abstract:

There is a great potential of using poultry litter (PL) in conservation tillage systems to sequester soil carbon in the southeast cotton belt. This study was initiated in 1996 at Alabama Agricultural Experiment Station, Belle, Mina, AL, to study the effects of conservation tillage systems with PL and winter rye (Secale cereale L.) cover crop on soil pH, C and N. Over the five year duration of the study, soil pH was not significantly affected by the treatments. However, soil C in the top 0-5cm soil profile in mulch-till system was 12% greater than that under conventional till and 46% higher than that in fallow plots in 2001. Cotton-winter rye cropping system increased soil C in the top 0-5cm soil profile by 25% and 42%, compared to cotton-winter fallow and fallow plots, respectively. Plots which received 100kg N/ha and 200 kg N/ha in the form of PL had 7% and 20%, greater soil C than plots which received 100kg N/ha in the form of ammonium nitrate, respectively. The use of PL in conservation tillage system will improve the sustainability of cotton production in the southeast cotton belt, while safely disposing of waste material which could otherwise pose an environmental problem.

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