Runoff and Sediment Losses from a Paired Field Demonstration in the Coastal Plains. (A05-watts163546-Poster)

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Abstract:

Innovative production practices, such as conservation tillage and narrow row planting, have the potential to reduce the risk of water-quality problems caused by traditional crop production. To evaluate the impact of these practices on the quantity and quality of runoff water leaving an agricultural area, a 5.7-ha site was established at the Clemson University Pee Dee Research and Education Center near Florence, SC. The site was equally divided with one half receiving innovative practices and the other half traditional production practices. Within each treatment area, three 0.05-ha runoff plots were established. Each plot contained a H-flume equipped with a stage recorder and an automated sampler. Runoff samples were collected from 1999 through 2001 and were analyzed for suspended sediment content and nitrate-N. Rainfall amounts and runoff events were variable across the three years. In 1999 and 2001, there were a small number of runoff events with correspondingly low amounts of water, sediment, and nitrate-N losses. A greater number of runoff events during 2000 produced higher losses in all categories. Though the annual number of runoff events varied, the innovative production system resulted in lower water, sediment, and nitrate-N losses in all three years.

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