

in water and soil preservation (26 contacts)

- Held numerous classroom and community 'shade tree' type grower meetings on beneficial insects and pest management in conservation tillage (85 contacts)
- And in 1995 we organized the Coffee County Conservation Tillage Alliance. There are currently 58 members in the alliance.

I also spread the word through local radio programs, newspaper articles, our Extension newsletter, and one-on-one grower contacts.

As I mentioned earlier, the conservation tillage efforts and accomplishments in Coffee County have been a team effort between growers, Extension, Research and the Natural Resources Conservation Service in the county. It is a given that growers are not likely to adopt a new, unproven production system without some evidence that it will work and that their risk will be minimal. NRCS personnel in Coffee County recognized this concern and helped acquire a grant through the Seven Rivers R C & D office for \$18,300 to purchase a no-till drill, a no-till and strip-till planter and trailer. This equipment was used to do on-farm demonstrations and could be leased by growers to try on their own farms with assistance from Extension and NRCS personnel if needed. I am fairly certain we would not have achieved the success we did with this project had that equipment not been available.

Speaking of success, let me share with you how far we have come with conservation tillage in Coffee County. In the 1980's Coffee County had one grower practicing conservation tillage on his 200 acre farm. Due to our cover crop research, farm demonstrations and many other educational activities, conservation tillage use has jumped to approximately 30,000 acres in cotton, peanuts, soybeans, corn, vegetables and tobacco. Some 8,000 to 10,000 acres of winter cover crops are planted annually into which summer crops are then planted using the no-till system. There are currently four no-till drills in the county and 45-55 conservation tillage planters.

In 1997 NRCS personnel determined that eight tons of topsoil per acre were saved through these conservation methods, the result being a savings of over 24,000 tons of soil. Besides just holding the soil in place, a conservation tillage/cover crop system improves the moisture holding capacity of the soil, results in less compaction of the soil, a higher nutrient content in the soil, and improved structure and tilth of the soil. By simply holding the soil in place, there is less sediment and chemical and fertilizer contamination in our surface water. By using this system we are able to reduce the amount of time, labor and fuel

necessary to produce a crop because we don't have to make as many trips across the field. We can use less expensive equipment because less horsepower is required. We've been able to use less fertilizer and pesticides. And we have greater flexibility at planting and harvest. In 1997 our farmers using conservation tillage realized a 15-20% reduction in production costs. That's an estimated savings of somewhere between \$1,012,550 and \$1,350,000!

We are all excited about the future of the conservation tillage program in Coffee County and plan to continue our research and educational efforts in this area. We believe this approach is a more biologically and ecologically friendly system than conventional tillage and that it provides the potential for greater profit margins while helping farmers meet government regulations to reduce soil erosion and protect water quality. Our future efforts will focus on 1) soil health and quality, 2) cover crops and nematode reaction, and 3) the feasibility of using black oats and other crops as cover crops with emphasis on nematode and disease suppression qualities, allelopathic properties, and cold hardiness.

Before I close I would like to recognize the growers and cooperating agencies who have made our program so successful. The following growers have gone out of their way to help us provide research based information for the general good. It takes a special kind of farmer to be willing to plant 8 different cover crops in 100 different plots in one 50 acre field! Tom Batten, Max Carter, Charles Deen, Jim Deen, Tommie Dorminey, Wayne Fussell, Lamar Harper, Chris Harper, Mike Nugent and Mark Vickers are that kind of farmer.

A number of agencies have provided technical and/or financial assistance for this program. They include: the Coffee County Ag Council, the Coffee County Conservation Tillage Alliance, the Georgia Conservation Tillage Alliance, the Georgia Cotton Commission, NRCS of Georgia, NRCS of North Carolina, Seven Rivers R C & D out of Waycross, Georgia, UGA Cooperative Extension Service, UGA Coastal Plains Experiment Station in Tifton, USDA-ARS Coastal Plains Experiment Station also in Tifton., and numerous banks, chemical companies and farm supply companies.

I have intentionally been brief with my presentation to give you time to ask questions. I didn't go into the specifics of our research or what we would do different if we had the chance. Please feel free to ask any questions you might have about the conservation tillage/cover crop program in Coffee County.

## **NO-TILL IN THE NORTH CAROLINA BLACKLANDS: A CASE STUDY FOR FARMER-TO-FARMER EXCHANGE**

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### SUMMARY

Farm records are presented which describe no-till acreage and yields at Open Grounds Farm, Inc. in eastern North Carolina.

The soil types and management on this farm are representative of many grain and cotton farms in the Blackland region of northeastern North Carolina. This is not highly erodible land, but the farm expected no-till to reduce wind erosion as well as to reduce labor needs.

The farm exceeded its original goal of 50% of acreage in no-till. Increased yield and a firmer soil surface for vehicle traffic are perceived by the farm as the most significant advantages with no-till. Farm records suggest corn yields are generally slightly higher with no-till. Since initially most no-till soybean was double-cropped and most

conventional till was full season, it is difficult to assess the yield affect of tillage on soybean yield. The size of the labor force required to plant the corn crop has decreased from 24 (for less than 12,500 acres prior to 1991) to 10 (for more than 15,000 acres now). Stratification of soil pH and nutrients has been noted, but this does not appear to be a cause for immediate concern.

No-till has the potential to maintain, and perhaps slightly enhance yields while reducing labor costs in this flat, wet region. It is a locally appropriate model for many farms in northeastern North Carolina, since it involves organic soils and the typical land development and drainage networks of this area.

**See this full paper and its tables and figures in the Reviewed Papers Section in this Proceedings.**