

NO-TILL AND REDUCED-TILL PRODUCTION SYSTEMS IN THE SOUTHWESTERN PIEDMONT OF NORTH CAROLINA

Thomas G. Pegram^{1*} and Everette Medlin²

¹North Carolina Cooperative Extension Service, 500 North Main Street, Monroe, NC 28110

²Farmer, Union County, North Carolina

*Corresponding authors e-mail address: thomas_peggram@ncsu.edu

ABSTRACT

No-till or reduced tillage has been used as a means of reducing erosion and later for program compliance, but its benefits have far exceeded these initial goals. The purpose of our discussion is to provide some of the positives and concerns associated with no-till production in the Southern Piedmont of North Carolina.

SUMMARY

The Southern Piedmont area of North Carolina is composed of six to eight counties, depending on whom you ask. The area is generally characterized as gently sloping with steeper slopes along drainage areas. Slopes range from 0 to 45%. The Catawba, Yadkin and Pee Dee River basins drain the landscape and provide much of the water usage within the area. Groundwater wells supply the rural areas water; wells typically run 90 to over 300 feet in depth.

Badin, Cid, Goldston and Tatum represent a large percentage of the soils from the region. These soils are characterized primarily as clay to clay loam, well- to moderately well-drained and slow to crust. Plow pans or hard pans are not recognized as a problem, although compaction has been observed in the past.

No-till or reduced tillage practices are no longer in the experimental stages for producers in the Southwestern Piedmont of North Carolina. This form of production agriculture is a widely accepted, proven practice that requires little thought for most producers. Area farmers have been utilizing no-till/reduced tillage practices for some 25 plus years. For the younger producers no-till is the only production system they have known.

Like other regions in the state, crops produced include corn, wheat, barley, oats, soybeans, cotton and sorghum. Soybeans represent the largest acreage, followed by wheat, then corn. The no-till concept requires a change in mindset, in that the change in production systems needs to be a long term commitment. Producers must realize that change is slow and should be measured accordingly. We can prosper if we allow our trust in the change to overcome the fear of the uncertain and the future.

The rapid developments and acceptances in agriculture technologies (chemicals, seeds, and equipment) over the past 20 years have all but eliminated the need to fix land prior to crop establishment or for in crop cultivation. Equipment requirements - planters, drills, sprayers mentioned above - are all equally important, but residue management begins at harvest. A good straw/residue spreader on the back of the combine is a must. Start clean. A good burndown program needs to be employed. Generally 21 days prior to crop establishment is sufficient but may need to be longer depending on herbicide selection. Soil temperature will be slightly cooler than conventionally fixed lands, and will warm at a slower rate, and producers may need to delay planting for a few days.

Producers should be mindful of weedshifts; perennial weeds, such as horsenettle, trumpet creeper and dock, to name a few, will become more prevalent. Outside of erosion reduction, the single most realized value from the no-till production practice is moisture conservation. The soil canopy/residue reduces evapotranspiration that can result in crop stress. Producers also realize cost savings on fuel, labor, time and big equipment and are able to get on the land during wet conditions.