

Tillage, rotation impacts peanut crops

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The increasing popularity of reduced tillage on crops has not only been an important development in combating soil erosion, but it has also been associated with increasing organic material and producing high crop yields.

For peanut crops, however, reduced tillage has not gained a large acceptance as a viable practice, as findings of inconsistent yields have not encouraged farmers to make a switch from conventional tillage systems.

New research study was conducted on the effects of tillage systems and crop rotation on peanut yield and pest development in the crops. The study, conducted at North Carolina State University, was recently published in *Agronomy Journal*, and was funded in part by the North Carolina Peanut Growers Association and the National Peanut Board.

The study found that there is an independent relationship between tillage and rotation practices with respect to peanut yield and pest development. The research began in 1999 and 2000 at two locations that used various crop rotations, including corn, cotton, and peanut, and a comparison was made between conventional tillage versus strip tillage into stubble from the previous crop stubble.

"The primary objective of this research was to determine interactions of crop rotations and tillage systems with respect to peanut," said David Jordan, the principle researcher for the project. "Although differences in peanut yield were associated with crop rotation and tillage system, these

data suggest that while farmers should expect some differences in peanut yield due to rotation and tillage, response to these management practices most likely will be independent."

The study did find that the tillage system used did have an effect on the development of tomato spotted wilt, a disease common in southern growing states. Additionally, the research also determined that the most effective method found to increase crop yield and manage pests is to increase the number of years between peanut plantings.

Research continues to be conducted at North Carolina State University comparing crop rotation and tillage systems and possible relationships between these important aspects of cropping systems in the southern United States. According to the author, additional research is needed in other geographical regions to study alternative crops, soil characteristics, and other pest complexes.

Source: American Society of Agronomy

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