

Nitrogen Credits after Peanut

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Cooperative Extension throughout the Southeast currently recommends 22-67 kg N/ha credit to subsequent crops following peanut. However, the peer-reviewed literature has shown that N credits to subsequent crops are negligible. Field trials with peanut, cotton, and fallow prior to wheat showed that peanut and fallow N credits to wheat were not different, and yield was lower after cotton, suggesting N immobilization after cotton rather than an N credit after peanut. Data from field litterbag mineralization studies in AL and NC showed that potential N credits from peanut residue potentially contribute 14-24 kg N/ha to wheat and 2-10 kg N/ha to cotton depending on location and residue management. Similar studies in Florida found that potential N available to subsequent crops from peanut residue depended on residue load size, tillage timing, and date of planting of the subsequent crop. That study also found that potential N credits were higher to winter than to spring crops. Potential N credits to winter crops ranged from 5-49 kg N/ha depending on tillage and residue load size, while for cotton the range was 1-23 kg N/ha. The greatest N credits were obtained using spring tillage with 6.7 Mg/ha residue loads, which represents a large amount of peanut residue. Taken together, these research findings corroborate the few existing scientific publications addressing the issue in the literature, namely that Extension recommendations for reducing N fertilization to crops after peanut are not supported. It is recommended that future field research should include fallows to determine if the supposed N credit after peanut actually represents a yield depression following non-legumes, possibly due to N immobilization from carbonaceous residues. The preponderance of peer-reviewed science does not support current Extension recommendations regarding N credits to subsequent crops after peanut.