

Do Belowground Peanut Plant Parts Contribute N credits to Subsequent Crops?

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Farmers in the US southeast are often recommended to reduce nitrogen (N) fertilization after peanut (*Arachis hypogaea* L.) by co-operative extension services. Although these recommendations are not supported by the scientific literature, the literature has never taken into account potential N credits from belowground plant parts and undug pods. An experiment was conducted to quantify potential N credits from peanut plant parts to subsequent crops using field litterbag decomposition studies. The objective was to quantify fertilizer replacement value of peanut hay, taproots and undug pods. A two factor (4 plant parts: leaves, stems, roots and pods × 9 retrieval periods) randomized complete block study was conducted during 2020-2021 season in Jay, FL. All residues were buried at 10 cm depth. Based on preliminary results, root biomass net N mineralization was 10% at 56 days after deployment. Pod biomass net N mineralization was 7% at 56 days after deployment. Results after 56 days will be presented and will inform peanut N synchronicity to summer crops. Traditional decomposition studies utilizing above-ground residue only may underestimate N credits, as preliminary results highlight the small but potentially significant contribution of peanut roots and pods to N synchronicity to subsequent crops.