

Decomposition and nutrient cycling of cover crops in conventional and strip-till peanut

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The use of cover crops in agronomic systems is an effective way to conserve valuable soil resources. Benefits include reduction of soil erosion, addition of organic matter to soil, and increased nutrient cycling (SAN, 2007). Many conservation tillage systems utilize cover-cropping methods, especially Southeastern peanut systems. Strip-till peanut depends on cereal grain cover crops like wheat (*Triticum aestivum* L.), rye (*Secale cereale* L.), and other crops for groundcover (Tubbs and Gallaher, 2005). However, research is needed to adequately understand the rate at which crop residues decompose and release nutrients for uptake by a peanut crop in a strip-till system. The focus of this study is to assess the rate of decomposition and subsequent nutrient release of wheat, rye, and crimson clover (*Trifolium incarnatum* L.) crop residues in a strip-till peanut crop versus a conventional-till crop. Recycling of plant nutrients will be monitored by collecting and analyzing soil, crop residue, vegetative peanut, and pod samples over the course of the growing season. It is expected that nutrient release will be more rapid in conventional tillage systems, with longer, more sustained nutrient release in strip-till systems. A more detailed understanding of the nutrient cycling dynamics for these three cover crops will allow peanut growers to make more informed decisions regarding cover crops for both conventional and strip-till systems.

Literature Cited

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