Effects of Previous Crop, Tillage, and Fertilizer N for Winter Wheat. (S04-kelley092710-Poster)

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Abstract:

In the eastern Great Plains, winter wheat is often rotated with other crops to diversity cropping systems. However, previous crop and plant residues affect fertilizer N efficiency. This 5-yr study was conducted in southeastern Kansas to evaluate the combined effects of previous crop (grain sorghum and soybean), tillage method (disk versus no-till), and fertilizer N placement (preplant broadcast and sub-surface knifed applications of liquid 28 % UAN) on winter wheat production. Applying fertilizer N below crop residues significantly increased grain yield and whole-plant N uptake compared with broadcast N applications, regardless of previous crop or tillage method. However, fertilizer N requirement was significantly higher for wheat following grain sorghum than for wheat following soybean. Grain yields were highest for wheat following soybean with disk tillage and lowest for wheat planted no-till following grain sorghum.

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