The influence of wheat straw management on doublecropped soybean germination and development. (C03brye103830-Poster)

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Abstract:

Sustainability of farmland is an increasing concern of today's growers and alternative agricultural systems can serve to promote such sustainability. Many producers, who typically grow soybeans in a wheat-soybean doublecrop system, choose to burn wheat residue immediately after harvest as a means of seedbed preparation. Burning residue adds a considerable amount of CO2 to the atmosphere and prevents return of much needed C to the soil. Effects of wheat-residue level (i.e., high and low), residue burning (i.e., burn and non-burn), and tillage (i.e., no-tillage (NT) and conventional (CT)) on soybean germination and development were evaluated on silt loam soil at two locations in the Mississippi River Delta region of eastern Arkansas. Soybean plant populations 30 d after planting were higher for the NT than CT, generally higher for the burn than non-burn, and were unaffected by residue level. Effects of tillage and burning on vegetative growth stage were inconsistent at 30 d after planting, but soybeans were at a consistently more advanced stage in the low than high residue level treatment. Alternative soybean management systems have the potential to be as economically viable as more traditional systems, while at the same time enhance soil quality and sustainability.

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