## RESIDUE PLACEMENT TO IMPROVE YIELDS OF NO-TILLAGE WINTER WHEAT FOLLOWING CORN

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## **OBJECTIVE:**

Determine whether redistribution of corn residues, relative to the planted wheat row, will improve wheat yields.

## **METHODS:**

Location: Fayette County/Spindletop Soil Type and Drainage :Maury silt loam - well drained Previous Crop: Corn Tillage: No-Tillage (Lilliston 9680) Cultivar: Pioneer 2552 Planting Date & Rate: Nov. 5, 1998; 26.5 seed/sq.ft. Harvest Date: June 21, 1999 Fertilizer: Nitrogen - 40 lb N/ac as 34-0-0 on 12/15/98 40 lb N/ac as 34-0-0 on 3/2/99 80 lb N/ac as 34-0-0 on 4/5/99 Herbicides: Gramoxone Extra - 1 qt/ac on 10/23/98 Harmony Extra - 0.7oz/ac on 4/7/99 Brominal ME4 - 0.75 pt/ac on 4/7/99 Fungicides: Tilt 3.2EC - 4 fl oz/ac on 5/15/99 Results: Average of 4 replications - see Table 1, below.

## CONCLUSIONS:

We removed corn residues prior to seeding wheat and then returned residues inside long "residue bags" at two set-back distances from the row. We had one treatment where we tried to maximize the insulation effect of residue without the chemical alleopathy of compounds leaching from the decomposing residues. We also had several kinds of check treatments (bare, random coverage over the plot without the bag, empty bags placed between the rows). The row spacing was 7 inches. Yields were among the lowest for treatments where residues were randomly distributed over the wheat rows and placed near the wheat row. The treatment where the residue bag was maintained at some distance from the row during dry weather, and removed during most rainfall events, was among the best treatments. The results suggest that previous crop residues may be both beneficial and detrimental to wheat growth and development.

TABLE 1. EFFECT OF CORN RESIDUE PLACEMENT ON NO-TILLAGE WHEAT GRAIN YIELD	
Residue Placement Treatment	<u>Grain Yield (bu/ac)</u>
Random coverage	46.0 b
Residue bags moved 0.25 inches away	44.9 b
Residue bags moved 1.25 inches away	54.0 ab
Residue bags moved 1.25 inches away & removed before rainfall	61.5 a
Empty residue bag between rows	55.3 ab
Bare (no residue)	53.4 ab