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Utilization of pelleted starter fertilizers in cover crop-based, reduced tillage organic corn production

Test conducted by:

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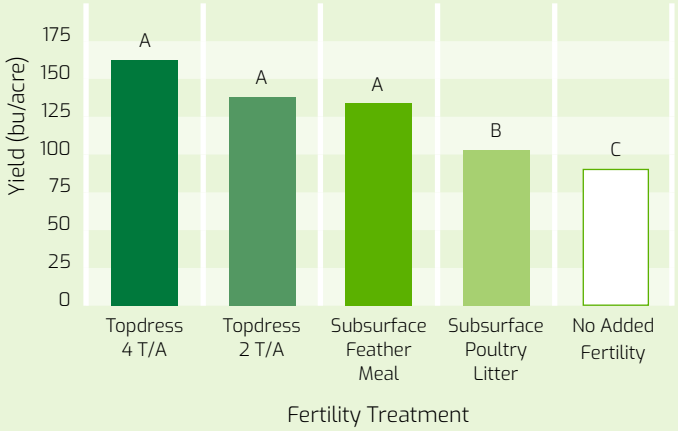
Introduction and procedures

In the fall of year 1 of the study, Rodale Institute, in collaboration with USDA-ARS Beltsville Agricultural Research Center and North Carolina State University, were awarded a USDA BRCS Conservation Innovation Grant to demonstrate the integration of starter fertilizers (pelleted manure) and their impacts on yield and weed competition in cover crop-based, reduced-tillage organic corn production. The aim of this article is to present readers with findings from demonstration rianls conducted at various locations for two years and conclude with recommendations based on information gained from this project.

Test results

Field plots at Beltsville year 1, Kinston, year 2, and Salisbury year 1 and year 2 all had excellent weed suppression and corn yield was similar between the high and low rate broadcast litter treatments ranging between 145 to 165 bu/acre (Fig. 1). However, corn yield was reduced with the subsurgace poultry litter and no added fertilility treatments to ~100 bu/acre. Feather meal subsurface banding yielded 30% more than in the subsurface poultry litter treatment.

Figure 1: Corn yield averaged over Beltsville Year 1, Kinston Year 2, Salisbury Year 3, and Salisbury Year 4.



8000 # PL	4000 # PL	515 # (13-0-0)	465 # PL
240 Units of N	120 Units of N	67 Units of N	14 Units of N
$50/ton	$100/ton	$800/ton	
$200/acre	$200/acre	$200/acre	

Conclusion

At Kinston in Year 1, high levels of weed competition were observed and corn grain yields were reduced with subsurgace banded lower fertility treatments. However, at the high rate topdress PL treatment corn biomass (Photo) and corn grain yield were greatest, where corn proved competitive with the weeds.

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