

## Manure and Planter Row Fertilizer

The above trial by the Thompsons was one of three they are carrying out to find the best combination and timing of manure and fertilizer application. In that particular experiment, the most profitable treatments were spring-applied manure and the zero-application check. The least profitable practices were deep banding (despite the yield increase) and manure-plus-planter row fertilizer.

In  
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three  
trials  
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Dick Thompson in front of one reason for all his manure and fertilizer trials



convention of comparing other treatments to the least profitable treatment can lead to confusion because that treatment actually yields better than some others. Table 3 shows "\$ Benefit" calculated the usual way, but it also shows "Crop Over Cost," the value of the yield minus treatment cost. This provides another version of the net value of a practice.

"Planter row fertilizer" is how Dick Thompson describes the 8+23+46 that he places two inches below the seed with the deep placement shoe on the planter. The four treatments in the trial in field 4C (Table 3) were: spring-applied manure, planter row fertilizer, both together, and neither. These make a two-by-two factorial design where each factor (manure and planter row fertilizer) occurs with both combinations of the other factor.

The table shows that manure-plus-fertilizer gave the top yield, but, again, not the best profit. That honor went to the manure-only treatment. The two factors, manure and row fertilizer, can be evaluated on their own, as shown in the table. Both manure and row fertilizer were statistically significant factors for corn yield. However, while manure was associated with a \$5.54 per acre benefit overall, the factor of row fertilizer led to an overall \$12.75 loss.

The Thompsons carried out a similar trial in a soybean field that will go to corn in 1996 (Table 3, field 5). There the planter row fertilizer increased soybean yield over the check treatment but not sufficiently to pay for itself. Spring-applied manure did not increase yield and led to an even greater loss. These fields have benefited from manure for many years, and it isn't surprising that soybeans failed to respond to a single application. Soil test phosphorus and potassium are both in the very high range.