

On-farm Cover Crop Trials

RFR-A1309

Cover crops can benefit farmers by aiding in erosion control, increasing organic matter in the soil, and reducing nitrate losses into the surface waters. They are an important practice in meeting Iowa's nutrient reduction strategy goals. However, some research has indicated that planting corn following a rye cover crop can result in corn grain yield reductions, especially if the cover crop is not killed at least two weeks prior to planting the corn.

Methods

Cover crop use was examined in two trials in Sioux County in cooperation with Dordt College (Table 1). Triticale (a rye-wheat cross) was seeded with a drill at 1.5 bushels/acre on September 25, 2012, following the soybean harvest. In Trial 1, the field was disked prior to seeding. In Trial 2, the field was seeded without tillage. The triticale in both trials was sprayed with glyphosate on May 4, 2013 (10 days prior to the corn being planted). The fields then were disked prior to planting the corn in both trials.

Results

There was no significant difference in yield between treatments in both studies in 2013. In fact, yields were nearly identical within both trials (Table 2). It is encouraging that in these trials there was no corn yield reduction even though the triticale was not killed two weeks prior to planting. However, this data represents only one year, and long-term results of a study such as this should be considered before conclusions are drawn.

Table 1. Hybrid, row spacing, planting date, planting population, previous crop, and tillage practices from cover crop trials in corn.

| Exp. No. | Trial | County | Hybrid | Row spacing (in.) | Planting date | Planting population (seeds/A) | Previous crop | Tillage practices |
|----------|-------|--------|---------------|-------------------|---------------|-------------------------------|---------------|---------------------------------------|
| 130156 | 1 | Sioux | Pioneer 297XR | 30 | 5/14/13 | 32,900 | Soybean | Fall disk before seeding, Spring disk |
| 130157 | 2 | Sioux | Pioneer 297XR | 30 | 5/14/13 | 32,900 | Soybean | No-till in fall, Spring disk |

Table 2. Corn yield from cover crop trials.

| Exp. No. | Trial | Treatment | Yield (bu/A)* | P-value |
|----------|-------|----------------------|---------------|---------|
| 130156 | 1 | Triticale cover crop | 231.5 a | 0.53 |
| | | No cover crop | 230.4 a | |
| 130157 | 2 | Triticale cover crop | 228.3 a | 0.54 |
| | | No cover crop | 226.6 a | |

*Values denoted with the same letter within a trial are not statistically different at the significance level 0.05.