Measuring the Damage Caused by a Drag Hose on Emerged Corn

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Objective

To compare corn yield response to a drag hose being dragged across emerged corn at growth stages one through five.

Background

Crop Year:	2014	Soil Test:	pH 6.3
Cooperator:	OARDC		P 20 ppm (40 lb/ac)
County:	Wood		K 145 ppm (290 lb/ac)
Nearest Town:	Hoytville		
Drainage:	Tile-40 feet spacing		Organic Mater 2.2%
Soil Type:	Hoytville	Planting Date:	May 20, 2014
Tillage:	No-till	Row Width:	30 inch
Previous Crop:	Soybeans	Harvest Date:	October 24, 2014
Variety:	Rupp J03-31	Rainfall (May-Sept):	12.78”

Methods

A randomized block design with five treatments and four replications was used. Plots were four rows (10 feet) wide and 90 feet long. A six inch drag hose, filled with water, was dragged across each treatment two times going in opposite directions.

All treatments were sidedressed with 200#/acre of N in the form of 28% UAN at the V3 stage of growth. The plot took approximately 31 days to reach growth stage V5.

Plant population numbers were counted just prior to harvest. The plot received well below average rainfall for the growing season.

Table 1 Treatment Summary

Treatment	Description
Treatment 1 (T1)	No drag hose used
Treatment 2 (T2)	Two trips across with loaded drag hose at V1 stage
Treatment 3 (T3)	Two trips across with loaded drag hose at V2 stage
Treatment 4 (T4)	Two trips across with loaded drag hose at V3 stage
Treatment 5 (T5)	Two trips across with loaded drag hose at V4 stage
Treatment 6 (T6)	Two trips across with loaded drag hose at V5 stage

Results and Discussion

Table 2 Yield Summary

Treatments	Plant Population	Yield (bu/ac)
Treatment 1	30,166	145.1_{b}
Treatment 2	29,660	154.3_{a}
Treatment 3	30,166	157.9_{a}
Treatment 4	28,933	153.9_{a}
Treatment 5	29,264	149.7_{a}
Treatment 6	15,366	109.8_{c}
		LSD (0.05)

The results of this plot indicated significant difference between the treatments (LSD (0.05) = 8.96, C.V=4.12).

Where the plant population was reduced due to damage from the drag hose, there was greater weed pressure. No attempt was made to control these weeds. Most of the corn plants snapped off at the V5 stage did attempt to regrow but the growth was very limited and the ears produced were insignificant. The very dry growing season and weed pressure likely impacted the limited regrowth.

The plot was planted on May 20th and took approximately 31 days to reach growth stage five. Had the plot been planted in late April or early May the crop growth rate would have been considerably slower. The results of this one-year research study suggest corn could be sidedressed with liquid livestock manure, using a drag hose, up to growth stage four without a statistically significant yield loss. This study will be repeated in 2015 and 2016 to establish a larger data base.

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