

# Planting Rates for Determinate and Indeterminate Corn Hybrids

Steve D. Ruhl, Agriculture and Natural Resources Extension Agent

## Objective

To evaluate the effect of three different planting rates on yields of hybrids differing in ear growth habit.

## Background

Cooperator:	Tom Weiler	Fertilizer:	206-70-99 lb/A actual N-P-K
County:	Morrow	Herbicides:	PRE: Dual II Magnum (1 qt/A) Atrazine (1.5 lb/A) Balance (1.0 oz/A)
Nearest Town:	Chesterville		POST: Clarity (1 pt/A)
Soil Type:	Chili loam	Varieties:	Pioneer 34G81 Golden Harvest 2547
Previous Crop:	Soybeans	Planting Date:	May 1, 2000
Drainage:	Naturally well-drained	Planting Rate:	See Methods
Tillage:	Conventional	Row Spacing:	30 inches
Soil Test:	pH 6.5, P 104 ppm, K 208 ppm	Harvest Date:	October 23, 2000

## Methods

Three different planter rates (24,300, 30,100, and 35,700 seeds per acre) were replicated three times in a complete randomized block design study for each hybrid. Treatment plots for the determinate corn hybrid, Pioneer 34G81, averaged 626 feet in length, and plots for the indeterminate hybrid, Golden Harvest 2547, averaged 594 feet in length. All treatment plots were 12 rows wide. The treatment plots were harvested completely and weighed using a weigh wagon.

## Results

**Table 1. Corn Population and Yield.**

<b>Planting Rate (seeds/A)</b>	<b>Pioneer 34G81 Yield (bu/A)</b>	<b>Golden Harvest 2547 Yield (bu/A)</b>
24,300	133.5	130.7
30,100	137.9	134.4
35,700	138	129.2
F	3.5 - NS	<1 - NS
CV	5.90%	1.90%

NS = Not significantly different at P = 0.05.

## Summary and Notes

According to some seed companies, a "fixed-ear" hybrid is associated with a relatively determinate ear size that limits its potential to compensate for variation in plant population and growing conditions. In contrast, a "flex-ear" hybrid has a more indeterminate ear size, which can adjust for differences in plant population and environment.

This study showed there is no significant difference in yields on the three planting rates used in this one-year, one-location study. Yields were limited at this location in 2000 due to excessive rains in May through June while July through August weather was dry.

## Acknowledgment

The author would like to thank the Golden Harvest Seed and Pioneer companies for their donation of the seed used in this study. Also, thanks to Golden Harvest for weighing the corn at harvest.

For additional information, contact:

Steve Ruhl  
The Ohio State University Extension  
ruhl.1osu.edu