

# Wheat Yields in an Intercropping System vs. a Conventional Production System

Steve Prochaska, Agriculture and Natural Resources Extension Agent

## Objective

To compare wheat yields in a Modified Relay Intercropping (MRI) system and a conventional production system.

## Background

Cooperator:	OSU Unger Farm	Soil Test:	pH 7.3, P 16 ppm, K 88 ppm
County:	Crawford	Fertilizer:	26-104-120, fall 1997
Soil type:	Pewamo, Blount		95 lbs/A nitrogen topdressed
Drainage:	Systematic	Herbicides:	2,4-D ester (1.0 pt/A)
Tillage:	Disk 2x	Interseeding Date:	June 9, 1999
Previous Crop:	Soybeans		

## Methods

The Ohio Wheat Performance Test and MRI plots were located on different fields but the same farm site in 1999. Fertility and weed control for the conventional and Modified Relay Intercropped wheat were the same.

Row spacing in the conventional system was 7.5 inches and in the MRI system it was 10 inches. There was also a 20-inch tramline in the MRI system plots. Fall planting date was slightly different between the conventional wheat (9/30/99) and MRI system wheat (10/5/98). The winter and spring weather was ideal for wheat production.

## Results

**Table 1. Yield Comparison of MRI and Conventional System.**

Variety	MRI Yield (bu/A)	Conventional Yield (bu/A)
Hopewell	80	94
X15	80	93
Agra962	88	95
Average	83	94

F = 17.3, significant at P = 0.05  
CV 3.8, LSD (0.05) = 7.6.

## Summary and Notes

J. Beuerlein of Ohio State University has reported from previous research that there was no difference in wheat yield between 7.5-inch and 10-inch row wheat in conventional systems. There was a significant difference between 10-inch wheat yield in an MRI system and 7.5-inch wheat in a conventional production system. MRI wheat yields on average were 11 bushels

(13.9%) less than conventional wheat yields. Previous work done by Dr. D. Jeffers of Ohio State University indicated about a 10% yield differential between conventional and MRI wheat yields. However, most of the previous work was done in lower yielding wheat.

The seeding of soybeans into wheat in 1998 damaged wheat and reduced yield; however, in 1999 little damage was done to the wheat as a result of the interseeding. Other analyses in 1999 would indicate the tramline being responsible for the greatest amount of variation in yield between the two systems.

For additional information, contact:

Steve Prochaska  
The Ohio State University Extension  
prochaska.1@osu.edu