



Crop Science Report

RESEARCH/EXTENSION

1983-84 AMITY NO-TILL DEMONSTRATION

by Russ Karow¹

Many agencies cooperated in conducting the Amity no-till trial. These included the Marion, Yamhill and Polk County Soil and Water Conservation Districts, the Soil Conservation Service, the Agricultural Stabilization and Conservation Service, and the Oregon State University Extension Service. These agencies would like to thank Marvin De Raeve and his family and friends for their cooperation and efforts in establishing and maintaining this trial.

INTRODUCTION AND PROCEDURES

A no-till demonstration trial was planted on the Marvin DeRaeve farm on October 5, 1983. The purpose of the trial was to demonstrate the planting effectiveness of various no-till drills under mid-Willamette Valley conditions. Because of the need to organize and promote the event, a date had to be selected in advance. On that date, field conditions were poor - the soil surface was extremely dry and hard. Growers would not have planted wheat under similar conditions.

Six different no-till drills were used in the demonstration - a John Deere, a drill fitted with Garrison openers, a Lilliston, a Marliss, a John Deere Power Till and a Napier. Drills varied in ability to place fertilizer, in type of fertilizer placed (liquid or dry), in type of opener utilized, in row spacing, and in seeding rates. Each drill planted two separate drill strips. These strips were not randomized. A single drill strip was also conventionally planted several days later in the same field. Given the many differences among drills and lack of randomization, statistically valid yield comparisons among drills cannot be made.

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RESULTS

Yield data is shown in Table 1. The average yield of the trial was 44.9 bushels per acre. This figure is 18 bushels lower than the state average winter wheat yield for 1984 and is about 30 bushels below average Willamette Valley winter wheat yields. These low yields can probably be attributed in part to poor stands which resulted from soil conditions at the time of planting.

Differences in yield were present amongst drills (Table 1); however, it is not possible to determine if these differences are statistically significant. If one uses differences between plots planted by the same drill to estimate a level of significance, differences among yields less than 30 bushels per acre are likely not to be real.

While the better no-till plantings were comparable in yield to that of the conventional planting, the low overall yield level of the plots would indicate that production conditions were not optimal. Properly replicated, randomized and controlled field experiments will need to be conducted in order to gain specific information on the differences, if any, between conventional and no-till planting in the Willamette Valley.

Table 1. 1983-84 Amity No-Till Demonstration - Yield (B/A)

Drill	Plot 1	Plot 2	Ave.
John Deere	60.6	31.4	46.0
Garrison	43.7	50.2	47.0
Lilliston	56.4	41.3	48.8
Marliss	24.6	26.7	25.6
John Deere PT	40.1	66.8	53.4
Napier	50.4	55.1	52.8
Conventional	37.4	-	37.4
Average	44.7	45.2	44.9