# WINTER WHEAT AFTER FALLOW YIELD SURVEY RESULTS FOR RITZVILLE GROWERS, ADAMS COUNTY, WA

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Since 1997, Washington State University has been conducting a continuous no-till spring cropping systems project near Ritzville, WA, on the Jirava Farm. One purpose is to compare the profitability of several no-till spring cropping rotations with that of the conventional winter wheat/summer fallow system. To facilitate this comparison, yields of soft white winter wheat (SWWW) after fallow were surveyed on fields that were within six miles of the Jirava Farm. The yield survey results are reported here. The complete comparison will be reported later.

Table 1 summarizes surveyed winter wheat yields by farmer and by year. A number identifies each of the 10 participating farmers. Farmer 3 reported yields for three different fields. The table shows the range, standard deviation (S.D.) and average yield for each year over farmers, for each farmer over years, and for the entire data set.

The yields for each year were also divided into the top, middle and lower one-thirds of the sample and the averages reported for each group. For every year there are twelve reported yields, allowing four yields in each group. Individual farmers can potentially move from one group to another in different years based on their performance.

Not surprisingly, average yields varied considerably over 1997 to 2001 with a high annual average of 72.3 bu/ac in 1997 and a low of 35.5 bu/ac in 2001. Every surveyed farmer experienced his/her lowest yield in 200l, a drought year. For some individuals, the contrast over years was extremely large. Farmer 10, for example, harvested 70 bu/ac in 1997 and always remained above 50 bu/ac through 2000, but harvested only 17 bu/ac in the 2001 drought year. In contrast, field 3c ranged only from 62 to 39 bu/ac from 1997 to 2001. As expected, S.D.'s over years for individual farmers were higher—ranging from 8.4 to 20.6 bu/ac—than S.D.'s over farmers for single years, which ranged from only 7.4 to 12.3 bu/ac.

As expected, yield patterns over time for the upper, middle, and lower one third groups tend to follow the same pattern as the overall average; however, there is a 13 to 23 bu/ac "spread" between the upper and lower groups, depending on the year. For this sample, this yield spread was highest in 1997, the highest yielding year. In high yielding years, there is a greater yield potential to be foregone by poor microenvironments or by management problems. For example, yields range from 50 to 92 bushels over the 12 samples in 1997, a year with favorable rainfall. Of course, some yield variation across farms within a year is expected due to differences in land quality, pest incidence, and site-specific weather. Also, yields alone will not determine profits; production costs, which were not surveyed, will also play a role.

**Table 1. SWWW after fallow yield results (bu/ac) for growers within six miles of Jirava Farm, Adams Co., WA, 1997–2001.**

| Farmer I.D. | 1997 | 1998 | 1999 | 2000 | 2001 | Range | Average | S.D. |
|---|---|---|---|---|---|---|---|---|
| 1 | 75 | 69 | 66 | 61 | 38 | 38 – 75 | 61.8 | 14.2 |
| 2 | 73 | 69 | 52 | 69 | 46 | 46 – 73 | 61.8 | 12.0 |
| 3a[a] | 91 | 47 | 66 | 57 | 42 | 42 – 91 | 60.6 | 19.3 |
| 3b[a] | 72 | 59 | 55 | 56 | 33 | 33 – 72 | 55.0 | 14.1 |
| 3c[a] | 62 | 54 | 53 | 55 | 39 | 39 – 62 | 52.6 | 8.4 |
| 4 | 92 | 63 | 61 | 76 | 46 | 46 – 92 | 67.6 | 14.3 |
| 5 | 50 | 50 | 65 | 55 | 30 | 30 – 65 | 50.0 | 12.7 |
| 6 | 60 | 59 | 48 | 58 | 28 | 28 – 60 | 50.6 | 13.5 |
| 7 | 76 | 52 | 60 | 69 | 37 | 37 – 76 | 58.8 | 15.2 |
| 8 | 70 | 56 | 58 | 54 | 34 | 34 – 70 | 54.4 | 13.0 |
| 9 | 77 | 50 | 53 | 66 | 36 | 36 – 77 | 56.4 | 15.7 |
| 10 | 70 | 63 | 57 | 53 | 17 | 17 – 70 | 52.0 | 20.6 |
| Upper 1/3 [b] | 84 | 66 | 65 | 70 | 43 | 43 – 84 | 65.6 | 14.7 |
| Middle 1/3 [b] | 73 | 57 | 58 | 58 | 36 | 36 – 73 | 56.3 | 13.2 |
| Lower 1/3 [b] | 61 | 50 | 52 | 54 | 27 | 27 – 61 | 48.6 | 12.9 |
| Range | 50 – 92 | 47 – 69 | 48 – 66 | 53 – 76 | 17 – 46 | 17 – 92[c] | | |
| Average | 72.3 | 57.6 | 57.8 | 60.8 | 35.5 | | 56.8[c] | |
| S.D. | 11.9 | 7.4 | 10.2 | 12.3 | 8.1 | | | 14.5[c] |

[a] Farmer #3 reported yields on three different fields.
[b]Group yield averages are reported for 1997 through 2001.
[c]These three statistics apply to the entire data set.