

**O. A. Vogel Wheat Research Fund
Annual Progress Report**

Project #: 4234

Progress Report Year: 2008

Title: Increasing wheat productivity through diversity.

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Results:

2007 Pullman

Entry #	Variety %	Yield	T wt.
1	Brundage 96 100/Hubbard 0	106.1	59.4
2	Brundage 96 95/Hubbard 5	105.3	59.5
3	Brundage 96 87.5/Hubbard 12.5	100.8	59.5
4	Brundage 96 80/Hubbard 20	98.3	59.6
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Entry #	Variety %	Yield	T wt.
7	Stephens 87.5/Hubbard 12.5	91.6	59.4
8	Stephens 80/Hubbard 20	91.1	59.3
6	Stephens 95/Hubbard 5	86.4	59.0
5	Stephens 100/Hubbard 0	82.1	58.4
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Entry #	Variety %	Yield	T wt.
10	Chukar 95/Edwin 5	105.6	58.8
9	Chukar 100/Edwin 0	98.7	58.8
12	Chukar 80/Edwin 20	97.5	58.7
11	Chukar 87.5/Edwin 12.5	95.0	58.8
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Entry #	Variety %	Yield	T wt.
15	Bruehl 87.5/Edwin 12.5	106.6	59.1
16	Bruehl 80/Edwin 20	102.4	59.3
14	Bruehl 95/Edwin 5	99.7	58.0
13	Bruehl 100/Edwin 0	97.5	58.8

2007 Colton

Entry #	Variety %	Yield	T wt.
2	Brundage 96 95/Hubbard 5	118.6	60.7
4	Brundage 96 80/Hubbard 20	118.3	61.1
1	Brundage 96 100/Hubbard 0	115.9	60.2
3	Brundage 96 87.5/Hubbard 12.5	113.2	60.8
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Entry #	Variety %	Yield	T wt.
7	Stephens 87.5/Hubbard 12.5	120.2	61.4
5	Stephens 100/Hubbard 0	119.5	61.2

6	Stephens 95/Hubbard 5	116.6	61.4
8	Stephens 80/Hubbard 20	115.7	61.9

Entry #	Variety %	Yield	T wt.
9	Chukar 100/Edwin 0	122.7	60.4
12	Chukar 80/Edwin 20	117.1	60.8
10	Chukar 95/Edwin 5	116.5	60.0
11	Chukar 87.5/Edwin 12.5	114.1	60.3

Entry #	Variety %	Yield	T wt.
13	Bruehl 100/Edwin 0	120.4	59.3
16	Bruehl 80/Edwin 20	118.8	60.3
15	Bruehl 87.5/Edwin 12.5	117.5	59.7
14	Bruehl 95/Edwin 5	116.3	59.6

2008 Pullman P17

Entry #	Variety %	Yield	T wt.
1	Brundage 96 100/Hubbard 0	76.7	59.8
2	Brundage 96 95/Hubbard 5	74.1	61.5
4	Brundage 96 80/Hubbard 20	68.4	60.9
3	Brundage 96 87.5/Hubbard 12.5	67.6	62.2

Entry #	Variety %	Yield	T wt.
7	Stephens 87.5/Hubbard 12.5	60.9	58.2
8	Stephens 80/Hubbard 20	60.7	58.8
5	Stephens 100/Hubbard 0	56.1	57.2
6	Stephens 95/Hubbard 5	51.8	57.2

Entry #	Variety %	Yield	T wt.
9	Chukar 100/Edwin 0	73.6	60.1
10	Chukar 95/Edwin 5	70.9	60.0
11	Chukar 87.5/Edwin 12.5	69.5	60.4
12	Chukar 80/Edwin 20	68.3	60.6

Entry #	Variety %	Yield	T wt.
15	Bruehl 87.5/Edwin 12.5	86.1	60.6
13	Bruehl 100/Edwin 0	84.1	59.8
16	Bruehl 80/Edwin 20	82.0	60.5
14	Bruehl 95/Edwin 5	78.5	60.1

2008 Pullman Horse shoe

Entry #	Variety %	Yield	T wt.
3	Brundage 96 87.5/Hubbard 12.5	66.3	61.9
1	Brundage 96 100/Hubbard 0	63.7	59.6
2	Brundage 96 95/Hubbard 5	62.4	62.1
4	Brundage 96 80/Hubbard 20	59.9	61.2

Entry #	Variety %	Yield	T wt.
7	Stephens 87.5/Hubbard 12.5	63.7	58.9
8	Stephens 80/Hubbard 20	56.3	59.2
6	Stephens 95/Hubbard 5	55.9	59.6
5	Stephens 100/Hubbard 0	54.7	58.4

Entry #	Variety %	Yield	T wt.
9	Chukar 100/Edwin 0	71.5	60.0
11	Chukar 87.5/Edwin 12.5	66.7	59.8
12	Chukar 80/Edwin 20	62.3	60.4
10	Chukar 95/Edwin 5	60.9	59.6

Entry #	Variety %	Yield	T wt.
14	Bruehl 95/Edwin 5	62.6	58.4
13	Bruehl 100/Edwin 0	61.4	58.6
15	Bruehl 87.5/Edwin 12.5	60.9	58.5
16	Bruehl 80/Edwin 20	57.2	59.4

Accomplishments:

Outputs:

There were no statistical differences within a pedigree for yield in any given year or location.

Outcomes:

The 87.5 % Stephens mixed with 12.5 % Hubbard was always the highest yielding for that blend. It out-yielded the pure Stephens by an average of 6 bushels/ac or 9.3%.

Three out of four locations had the pure Chukar out-yielding any percentage blend with Edwin, a tall, but lower yielding variety.

There was no consistency in ranking with the Bruehl/Edwin blends or the Brundage96/Hubbard blends.

Impacts: This project was taken over by a PhD student this past spring and the same SWW varieties were planted this fall at Spillman farm and in a farmer/cooperator's field near Steptoe. The study is now being conducted as a true replacement series type experiment where the actual number of seeds of the predominate variety were replaced with the same number of seeds of the replacement variety. This will also be compared to a 100% pure stand of each variety in the blend.

Presentations and Reports:

2008 Field Day plot tours: Lind Field Day; Horse Heaven, Ritzville, St John, Reardan, Almira; Columbia County Grain Growers Annual Meeting, Dayton WA; Over-seas varietal analysis Conference, Pullman WA; University of Vermont. Invited departmental seminar on Public Plant Breeding;Crop Improvement. Moscow, Idaho. Invited opening keynote talk on Advances in Wheat Breeding for Washington State.; Whitman Co. Growers/Genesee Union Annual meeting, Moscow ID.