

1999 Collaborative On-Farm Testing Results

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In the fall of 1998, twenty-two eastern Colorado wheat producers planted collaborative on-farm tests (COFT) in Baca, Prowers, Kiowa, Cheyenne, Kit Carson, Arapahoe, Morgan, and Weld counties. The objective was to compare performance of the newly-released Russian wheat aphid (RWA)-resistant varieties – *Halt*, *Prowers*, *Yumar*, and *Prairie Red* – with the performance of the RWA-susceptible varieties *TAM 107* and *Akron*. Working alongside local Extension agents, each producer-collaborator received 100 pounds seed of each variety and planted the six varieties in side-by-side strips.

The 1998-99 season was the fourth year of winter wheat variety on-farm testing. Many collaborating producers have conducted tests each of the four years. Colorado State University Cooperative Extension agents have taken more and more responsibility for the success of this program – recruiting volunteer growers, delivering seed, planning field layout and operations, keeping records, coordinating visits, communicating with growers and campus coordinators, coordination of weighing plot yields. In addition to evaluation of new varieties under farm conditions, on-farm testing directly involves producers in the variety development process, thereby reducing the number of years required for adoption of superior, new varieties.

The 1999 COFT results are divided into two groups according to geographic location within Colorado. Eight locations from the southeast Colorado group showed *Yumar* to be the highest yielding variety with *Akron*, *Halt*, *Prairie Red*, and *Prowers* in a mid-yield group. *TAM 107* was lowest yielding. Nine locations from the east-central Colorado group showed *Akron*, *Halt*, and *Prairie Red* to be the highest yielding varieties with *Prowers*, *TAM 107*, and *Yumar* in a lower yielding group. Overall, *Yumar*, *Akron*, *Halt*, and *Prairie Red* were the top yielding varieties with *Prowers* and *TAM 107* yielding less. The yield performance of *Yumar* was noteworthy, especially in southeast Colorado where climatic conditions were exceptionally favorable. *Prowers* performed well in the southeast as well. The newly released, RWA-resistant varieties performed consistently better than

TAM 107 across the state.

Light to severe infestations of RWA were observed at most southeast Colorado locations and some east-central locations. Severe infestations of brown wheat mite were observed in several east-central locations. Hail reduced yields at the Kit Carson NE location.

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1999 Colorado Collaborative On-Farm Test (COFT) Results.

Variety (Yield in bu/ac @ 13% moisture)

County Location	Akron	Halt	Prairie Red	Prowers	TAM 107	Yumar	Test Ave
Baca EC	46.7	51.5	48.5	46.5	38.9	56.4	48.1
Baca SW	38.4	37.9	42.5	43.6	36.7	45.7	40.8
Baca WC	56.3	57.2	63.6	56.4	58.1	62.3	59.0
Baca SE	57.2	63.5	61.7	60.2	68.6	66.5	63.0
Prowers C	61.9	63.4	61.7	65.2	61.0	70.6	64.0
Prowers N	48.7	51.7	48.1	52.1	40.3	47.9	48.1
Prowers NC	47.5	45.8	49.5	52.1	38.8	43.9	46.3
Kiowa	69.7	65.1	66.4	61.5	66.4	70.3	66.6
SE Colorado Ave	53.3	54.5	55.3	54.7	51.1	58.0	54.5
Kit Carson W	77.6	74.4	81.4	67.7	78.9	79.8	76.6
Kit Carson NE	40.2	31.8	38.0	24.4	36.4	36.3	34.5
Kit Carson SE	83.5	96.0	87.4	66.9	81.7	82.0	82.9
Lincoln NC	76.0	95.2	74.7	54.0	84.7	93.3	79.7
Lincoln SC	39.9	43.7	38.9	32.0	29.0	37.1	36.7
Arapahoe SW	69.3	68.0	62.3	66.3	65.0	N/A	66.2
Arapahoe NC	28.7	32.0	34.5	38.8	31.8	38.2	34.0
Morgan	47.1	47.2	44.7	44.4	36.2	42.8	43.7
Weld SW	47.3	47.4	46.0	48.8	46.2	49.8	47.6
Weld NE	50.3	50.6	52.8	51.4	51.9	44.4	50.2
Central Ave	56.0	58.6	56.1	49.5	54.2	56.0	55.2
Variety Ave Yield	54.8	56.8	55.7	51.8	52.8	56.9	54.8
Variety Ave TWT	58.0	58.5	58.2	58.3	58.4	59.1	58.4
Protein Contents (%) 1998	n/a	12.4	n/a	12.6	11.7	12.4	12.4
Protein Contents (%) 1999	10.4	10.9	10.4	10.9	10.7	10.3	10.6

Halt and *Prowers* are known to have better milling and baking quality characteristics. *Prowers* had the highest test weight average across all locations. Grain samples from test locations were analyzed for protein content in 1998 and 1999. Results show that *Halt* and *Prowers* have higher protein content than the other varieties.

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