AKRON
Bethune
Five Colorado sunflower trial locations in 1999 and the 1998 acreage harvested for the top producing counties.

WASHINGTON
13,000

Yuma
8,500

Kit Carson
38,000

CHEYENNE WELLS
Cheyenne
18,000

Lincoln
3,000

Elbert
2,800

Phelps
3,700

Phillips
5,500

Haxtun

Akron

Adams
7,000

Arapahoe
2,500

Weld
8,000

Logan
8,000

Morgan
6,500

Sedgwick
5,500

Wray

Weld
8,000

Logan
8,000

Morgan
6,500

Sedgwick
5,500

Wray

ACKNOWLEDGMENTS

The authors wish to express their gratitude to the Colorado farmers who generously contributed the use of their land, equipment, and time to conduct these trials for the good of all Colorado sunflower producers and dealers: Akron - Jason Shook; Bethune - George Stahlecker; Cheyenne Wells - Dennis Campbell; Haxtun - Richard Fryrear; Idalia- Jim Roberts. We also gratefully acknowledge Triumph Seed Co., Inc. (P.O. Box 1050, Ralls TX 79357) for oil analyzes and Red River Commodities, Inc. (1320 East College Drive, Colby KS 67701) for seed-sizing analyzes.
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1999 COLORADO SUNFLOWER PERFORMANCE TRIALS

Introduction

Sunflowers have become an important crop in Colorado, especially in the northeastern counties of Kit Carson, Cheyenne, and Yuma. According to the Colorado Agricultural Statistics Service (October 1999), Colorado sunflower production is expected to total 375.2 million pounds, up 88 percent from the 1998 crop with an average expected yield of 1,230 pounds per acre. Harvest area for 1999 is estimated to reach 305,000 acres, up from 150,000 acres harvested a year ago.

Hybrid seed is used to plant all sunflower acreage in Colorado. The 1999 market value of seed to plant over 300,000 acres exceeded $4 million. To assist Colorado sunflower producers to make the best hybrid decision, CSU personnel evaluate commercial sunflower hybrids at different locations in northeastern Colorado.

A randomized complete block design with three replicates was used for all trials. The center two rows of four row plots (30” spacing between rows and 40’ long) were harvested for grain yield. Oil hybrids were seeded at 19,000 seeds/acre under dryland conditions and at 24,000 seeds/acre under irrigation. Confection hybrids were seeded at 15,000 seeds/acre under dryland conditions and at 17,000 seeds/acre under irrigation.

In addition to seed yields (reported in pounds per acre adjusted to 10% moisture content), test weight, moisture at harvest, plant height, lodging, plants per acre (density), oil content (for oil hybrids), and seed size (for confection hybrids) are also reported. The least significant difference (LSD) value, alpha=0.30, is reported for yield. Oil content was determined by Triumph Seed Co., Inc. using NMR analysis from bulked samples. Oil content is expressed on a 0% moisture basis.

The 1999 Sunflower Season

The results of our 1999 dryland sunflower oil and confection trials at Akron, Cheyenne Wells, and Wray are shown below. Unfortunately we lost the trials at Bethune (irrigated) and Haxtun (dryland) to severe hail damage.

Information regarding sunflower production practices and pest control can be obtained from the following source: “High Plains Sunflower Production and IPM,” Bulletin No. 556A, Colorado State University Cooperative Extension, Fort Collins, 80523. Call CERC at 970-491-6198 to order your copy.

Table 1. Cultural conditions for sunflower testing in 1999.

<table>
<thead>
<tr>
<th></th>
<th>Akron</th>
<th>Cheyenne Wells</th>
<th>Wray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Type</td>
<td>Weld-Iliff Loam</td>
<td>Keith-Ulysses Silt Loam</td>
<td>Colby Silt Loam</td>
</tr>
<tr>
<td>Previous Crop</td>
<td>Corn</td>
<td>Wheat</td>
<td>Wheat</td>
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<tr>
<td>Fertilization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N acre⁻¹</td>
<td>55</td>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>P₂O₅ acre⁻¹</td>
<td>15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>S acre⁻¹</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ACA acre⁻¹</td>
<td>7oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbicide</td>
<td>Sonalan</td>
<td>Treflan</td>
<td>Spartan</td>
</tr>
<tr>
<td>Insecticide</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
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</table>
Table 2. Dryland sunflower oil performance at Akron\(^1\) in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield Test Weight</th>
<th>Plant Height</th>
<th>Plant Density</th>
<th>Lodging Oil %</th>
<th>Oil %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate Hysun 450</td>
<td>2000 lb/ac</td>
<td>26.0 bu/ac</td>
<td>47 in</td>
<td>13511 plants/ac</td>
<td>6</td>
</tr>
<tr>
<td>Triumph 562</td>
<td>1970 lb/ac</td>
<td>26.0 bu/ac</td>
<td>53 in</td>
<td>11945 plants/ac</td>
<td>11</td>
</tr>
<tr>
<td>DEKALB DK3900</td>
<td>1915 lb/ac</td>
<td>26.9 bu/ac</td>
<td>51 in</td>
<td>13956 plants/ac</td>
<td>1</td>
</tr>
<tr>
<td>Cargill SF187</td>
<td>1877 lb/ac</td>
<td>26.0 bu/ac</td>
<td>44 in</td>
<td>14207 plants/ac</td>
<td>3</td>
</tr>
<tr>
<td>DEKALB DK3875</td>
<td>1747 lb/ac</td>
<td>27.3 bu/ac</td>
<td>43 in</td>
<td>13809 plants/ac</td>
<td>6</td>
</tr>
<tr>
<td>Pioneer brand 6338</td>
<td>1742 lb/ac</td>
<td>27.8 bu/ac</td>
<td>53 in</td>
<td>14335 plants/ac</td>
<td>0</td>
</tr>
<tr>
<td>Interstate Hysun 449</td>
<td>1735 lb/ac</td>
<td>25.5 bu/ac</td>
<td>49 in</td>
<td>12447 plants/ac</td>
<td>11</td>
</tr>
<tr>
<td>DEKALB DK3868</td>
<td>1692 lb/ac</td>
<td>27.3 bu/ac</td>
<td>50 in</td>
<td>13454 plants/ac</td>
<td>7</td>
</tr>
<tr>
<td>Interstate IS 6767</td>
<td>1647 lb/ac</td>
<td>26.1 bu/ac</td>
<td>45 in</td>
<td>14991 plants/ac</td>
<td>9</td>
</tr>
<tr>
<td>Pioneer brand 63A81</td>
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<td>50 in</td>
<td>14514 plants/ac</td>
<td>7</td>
</tr>
<tr>
<td>Cargill SF125NL</td>
<td>1615 lb/ac</td>
<td>27.7 bu/ac</td>
<td>57 in</td>
<td>12447 plants/ac</td>
<td>11</td>
</tr>
<tr>
<td>Cargill SF120</td>
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<td>27.3 bu/ac</td>
<td>53 in</td>
<td>11879 plants/ac</td>
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</tr>
<tr>
<td>DEKALB DK3872 NS</td>
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<td>26.3 bu/ac</td>
<td>56 in</td>
<td>14597 plants/ac</td>
<td>4</td>
</tr>
<tr>
<td>Cargill SF270</td>
<td>1524 lb/ac</td>
<td>26.5 bu/ac</td>
<td>44 in</td>
<td>11982 plants/ac</td>
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</tr>
<tr>
<td>Pioneer brand XF379</td>
<td>1515 lb/ac</td>
<td>25.8 bu/ac</td>
<td>55 in</td>
<td>14084 plants/ac</td>
<td>9</td>
</tr>
<tr>
<td>Pioneer brand 6300</td>
<td>1463 lb/ac</td>
<td>26.4 bu/ac</td>
<td>51 in</td>
<td>10539 plants/ac</td>
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</tr>
<tr>
<td>Triumph 540</td>
<td>1451 lb/ac</td>
<td>25.1 bu/ac</td>
<td>45 in</td>
<td>12716 plants/ac</td>
<td>6</td>
</tr>
<tr>
<td>Cargill SF260</td>
<td>1417 lb/ac</td>
<td>24.3 bu/ac</td>
<td>46 in</td>
<td>14331 plants/ac</td>
<td>5</td>
</tr>
<tr>
<td>Mycogen 8488NS</td>
<td>1416 lb/ac</td>
<td>26.4 bu/ac</td>
<td>50 in</td>
<td>14591 plants/ac</td>
<td>4</td>
</tr>
<tr>
<td>Mycogen 8372</td>
<td>1408 lb/ac</td>
<td>27.5 bu/ac</td>
<td>45 in</td>
<td>12924 plants/ac</td>
<td>4</td>
</tr>
<tr>
<td>Cargill SF290NL</td>
<td>1381 lb/ac</td>
<td>26.1 bu/ac</td>
<td>52 in</td>
<td>11768 plants/ac</td>
<td>4</td>
</tr>
<tr>
<td>Pioneer brand 6451</td>
<td>1366 lb/ac</td>
<td>26.0 bu/ac</td>
<td>45 in</td>
<td>13827 plants/ac</td>
<td>2</td>
</tr>
<tr>
<td>Interstate IS 4049</td>
<td>1287 lb/ac</td>
<td>27.0 bu/ac</td>
<td>52 in</td>
<td>13319 plants/ac</td>
<td>8</td>
</tr>
<tr>
<td>DEKALB DK3790</td>
<td>1246 lb/ac</td>
<td>26.9 bu/ac</td>
<td>47 in</td>
<td>13275 plants/ac</td>
<td>3</td>
</tr>
<tr>
<td>Pioneer brand 63A70</td>
<td>1235 lb/ac</td>
<td>25.6 bu/ac</td>
<td>48 in</td>
<td>12580 plants/ac</td>
<td>13</td>
</tr>
<tr>
<td>DEKALB DK3806</td>
<td>1095 lb/ac</td>
<td>24.5 bu/ac</td>
<td>47 in</td>
<td>14809 plants/ac</td>
<td>13</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>1558 lb/ac</strong></td>
<td><strong>26.3 bu/ac</strong></td>
<td><strong>49</strong> in</td>
<td><strong>13348 plants/ac</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>CV%</strong></td>
<td>27.9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>LSD(_{(0.05)})</strong></td>
<td>372</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\)Trial conducted on the Jason Shook farm; seeded 6/24 and harvested 10/20.

Table 3. 2-yr average dryland sunflower oil performance at Akron, 1998-99.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield Test Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triumph 562</td>
<td>1459 lb/ac</td>
</tr>
<tr>
<td>DEKALB DK3900</td>
<td>1452 lb/ac</td>
</tr>
<tr>
<td>DEKALB DK3875</td>
<td>1450 lb/ac</td>
</tr>
<tr>
<td>Pioneer brand 6338</td>
<td>1438 lb/ac</td>
</tr>
<tr>
<td>Cargill SF187</td>
<td>1410 lb/ac</td>
</tr>
<tr>
<td>Interstate IS 4049</td>
<td>1355 lb/ac</td>
</tr>
<tr>
<td>DEKALB DK3868</td>
<td>1333 lb/ac</td>
</tr>
<tr>
<td>Interstate Hysun 449</td>
<td>1275 lb/ac</td>
</tr>
<tr>
<td>Interstate IS 6767</td>
<td>1271 lb/ac</td>
</tr>
<tr>
<td>Pioneer brand XF379</td>
<td>1233 lb/ac</td>
</tr>
<tr>
<td>Cargill SF270</td>
<td>1220 lb/ac</td>
</tr>
<tr>
<td>Cargill SF260</td>
<td>1219 lb/ac</td>
</tr>
<tr>
<td>Pioneer brand 6451</td>
<td>1149 lb/ac</td>
</tr>
<tr>
<td>Cargill SF290NL</td>
<td>1088 lb/ac</td>
</tr>
<tr>
<td>DEKALB DK3806</td>
<td>1035 lb/ac</td>
</tr>
<tr>
<td>DEKALB DK3790</td>
<td>926 lb/ac</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>1270 lb/ac</strong></td>
</tr>
</tbody>
</table>

26.1
Table 4. Dryland sunflower oil performance at Cheyenne Wells in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
<th>Plant Height</th>
<th>Density</th>
<th>Lodging</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
<td>in</td>
<td>plants/ac</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Triumph 562</td>
<td>1762</td>
<td>26.6</td>
<td>59</td>
<td>13566</td>
<td>0</td>
<td>41.2</td>
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<tr>
<td>Interstate ST 2126</td>
<td>1694</td>
<td>26.4</td>
<td>57</td>
<td>14463</td>
<td>2</td>
<td>41.1</td>
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<tr>
<td>Novartis NK brand 278</td>
<td>1604</td>
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<td>51</td>
<td>13714</td>
<td>3</td>
<td>40.2</td>
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<tr>
<td>Mycogen 8372</td>
<td>1507</td>
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<td>51</td>
<td>15145</td>
<td>1</td>
<td>40.3</td>
</tr>
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<td>Pioneer brand 6451</td>
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<td>51</td>
<td>14315</td>
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<td>Interstate IS 4049</td>
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<td>55</td>
<td>12342</td>
<td>0</td>
<td>42.1</td>
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<td>52</td>
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<td>13298</td>
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<td>39.7</td>
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<td>60</td>
<td>12230</td>
<td>3</td>
<td>40.2</td>
</tr>
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<td>25.7</td>
<td>52</td>
<td>14623</td>
<td>0</td>
<td>42.7</td>
</tr>
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<td>Interstate ST 971136 NS</td>
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<td>26.5</td>
<td>53</td>
<td>13215</td>
<td>2</td>
<td>41.0</td>
</tr>
<tr>
<td>Triumph 540</td>
<td>1359</td>
<td>25.5</td>
<td>51</td>
<td>13026</td>
<td>4</td>
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<td>59</td>
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<td>40.9</td>
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<td>41.7</td>
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<tr>
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<td>57</td>
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<tr>
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<td>47</td>
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<td><strong>53</strong></td>
<td><strong>13631</strong></td>
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<td><strong>41.0</strong></td>
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</table>

**CV%** 24.8

LSD<sub>0.05</sub> 275

Trial conducted on the Dennis Campbell farm; seeded 6/8 and harvested 10/19.

Table 5. 2-yr average dryland sunflower oil performance at Cheyenne Wells, 1998-99.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
</tr>
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<tbody>
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<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
</tr>
<tr>
<td>Triumph 562</td>
<td>1648</td>
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</tr>
<tr>
<td>Novartis NK brand 278</td>
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</tr>
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<td>1454</td>
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</tr>
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<td>Cargill SF270</td>
<td>1439</td>
<td>25.7</td>
</tr>
<tr>
<td>Kaystar 9501</td>
<td>1416</td>
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</tr>
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<td>1374</td>
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</tr>
<tr>
<td>Cargill SF290NL</td>
<td>1374</td>
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</tr>
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</tr>
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</tr>
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<td>1321</td>
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</tr>
<tr>
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<td>1304</td>
<td>24.6</td>
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<tr>
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<td>1259</td>
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<tr>
<td>Pioneer brand 6300</td>
<td>1252</td>
<td>25.6</td>
</tr>
<tr>
<td>Pioneer brand 63A51(HO)</td>
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<td>25.1</td>
</tr>
<tr>
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<tr>
<td>DEKALB DK3868</td>
<td>1083</td>
<td>25.5</td>
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</tbody>
</table>

**Average** 1338 25.6
Table 6. Dryland sunflower oil performance at Wray in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield lb/ac</th>
<th>Test Weight bu/ac</th>
<th>Plant Height in</th>
<th>Density plants/ac</th>
<th>Lodging %</th>
<th>Oil %</th>
</tr>
</thead>
<tbody>
<tr>
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<td>56</td>
<td>13885</td>
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<td>56</td>
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<td>48.8</td>
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<td>45</td>
<td>13431</td>
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<td>55</td>
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<td>47</td>
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<td>48</td>
<td>13110</td>
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<td>14157</td>
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<td>48.6</td>
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<td><strong>29.9</strong></td>
<td><strong>53</strong></td>
<td><strong>13353</strong></td>
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<td><strong>49.6</strong></td>
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<sup>Trial conducted on the Jim Roberts farm; seeded 6/4 and harvested 10/18.</sup>
Table 7. Dryland sunflower confection performance at Akron\(^1\) in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
<th>Plant Height</th>
<th>Density plants/ac</th>
<th>Lodging %</th>
</tr>
</thead>
<tbody>
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<td>Red River RRC 2413</td>
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<td>14246</td>
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<td>49</td>
<td>12700</td>
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</tr>
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<td>Red River RRC EX2582</td>
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<td>10983</td>
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<td>1825</td>
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<td>12924</td>
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<td>12655</td>
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<td>12838</td>
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<td>9746</td>
<td>20</td>
</tr>
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<td>10139</td>
<td>20</td>
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<td>8588</td>
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<td>12139</td>
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</table>

\(^1\) Trial conducted on the Jason Shook farm; seeded 6/24 and harvested 10/20.

Table 8. 2-yr average dryland sunflower confection performance at Akron, 1998-99.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red River RRC 2413</td>
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<td>19.4</td>
</tr>
<tr>
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<td>1280</td>
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<tr>
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<td>1277</td>
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<td>Red River RRC 2331</td>
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<td>Royal Hybrid 2373</td>
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<td>1032</td>
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<tr>
<td>Average</td>
<td>1266</td>
<td><strong>19.3</strong></td>
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</table>

Table 9. Seed size of dryland sunflower confection performance at Akron in 1999, percent by size.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>22/64 To 20/64</th>
<th>20/64 To 18/64</th>
<th>18/64 To 16/64</th>
<th>16/64 To 14/64</th>
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<tr>
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<td>43.3</td>
<td>31.4</td>
<td>16.8</td>
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<td>13.4</td>
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<td>43.7</td>
<td>22.4</td>
<td>7.4</td>
<td>2.8</td>
</tr>
<tr>
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<td>32.7</td>
<td>35.6</td>
<td>21.1</td>
<td>7.9</td>
<td>2.7</td>
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<td>32.3</td>
<td>14.8</td>
<td>3.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Red River RRC 2413</td>
<td>38.4</td>
<td>33.6</td>
<td>17.5</td>
<td>7.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Red River RRC 2331</td>
<td>26.0</td>
<td>30.4</td>
<td>23.8</td>
<td>10.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Red River RRC 2412</td>
<td>54.2</td>
<td>21.5</td>
<td>13.0</td>
<td>7.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Red River RRC 9490</td>
<td>30.9</td>
<td>33.8</td>
<td>18.8</td>
<td>9.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Royal Hybrid 2373</td>
<td>46.9</td>
<td>29.6</td>
<td>14.8</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Royal Hybrid 2073</td>
<td>60.9</td>
<td>25.0</td>
<td>9.4</td>
<td>2.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Seeds 2000 Kodiak</td>
<td>36.4</td>
<td>23.1</td>
<td>24.4</td>
<td>12.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Sigco Sun SS-62</td>
<td>33.7</td>
<td>31.7</td>
<td>22.2</td>
<td>9.2</td>
<td>3.2</td>
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<tr>
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<td>36.1</td>
<td>18.0</td>
<td>7.0</td>
<td>1.2</td>
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<tr>
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<td>38.8</td>
<td>32.7</td>
<td>15.9</td>
<td>7.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Triumph 766 CRT</td>
<td>43.5</td>
<td>29.8</td>
<td>17.8</td>
<td>6.2</td>
<td>2.7</td>
</tr>
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</table>
Table 10. Dryland sunflower confection performance at Cheyenne Wells¹ in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
<th>Plant Height</th>
<th>Density</th>
<th>Lodging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
<td>in</td>
<td>plants/ac</td>
<td>%</td>
</tr>
<tr>
<td>Interstate IS 8048</td>
<td>1637</td>
<td>21.0</td>
<td>53</td>
<td>11760</td>
<td>1</td>
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<tr>
<td>Triumph 765C</td>
<td>1505</td>
<td>20.6</td>
<td>51</td>
<td>12878</td>
<td>2</td>
</tr>
<tr>
<td>Pioneer brand XF981</td>
<td>1326</td>
<td>20.9</td>
<td>57</td>
<td>12772</td>
<td>2</td>
</tr>
<tr>
<td>Triumph 766 CRT</td>
<td>1299</td>
<td>20.4</td>
<td>55</td>
<td>12306</td>
<td>3</td>
</tr>
<tr>
<td>Pioneer brand DE-1998</td>
<td>1261</td>
<td>21.5</td>
<td>49</td>
<td>12675</td>
<td>0</td>
</tr>
<tr>
<td>Average</td>
<td>1406</td>
<td>20.9</td>
<td>53</td>
<td>12478</td>
<td>1</td>
</tr>
<tr>
<td>CV%</td>
<td>18.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSD&lt;sub&gt;(0.30)&lt;/sub&gt;</td>
<td>231</td>
<td></td>
<td></td>
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</tbody>
</table>

¹Trial conducted on the Dennis Campbell farm; seeded 6/8 and harvested 10/19.

Table 11. 2-yr average dryland sunflower confection performance at Cheyenne Wells, 1998-99.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>1329</td>
<td>19.4</td>
</tr>
<tr>
<td>Pioneer brand DE-1998</td>
<td>1017</td>
<td>20.1</td>
</tr>
<tr>
<td>Average</td>
<td>1197</td>
<td>19.4</td>
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</table>

Table 12. Seed size of dryland sunflower confection performance at Cheyenne Wells in 1999, percent by size.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>20/64</th>
<th>18/64</th>
<th>16/64</th>
<th>14/64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate IS 8048</td>
<td>23.6</td>
<td>28.6</td>
<td>21.2</td>
<td>11.6</td>
<td>15.0</td>
</tr>
<tr>
<td>Pioneer brand XF981</td>
<td>18.9</td>
<td>34.5</td>
<td>29.5</td>
<td>8.1</td>
<td>9.0</td>
</tr>
<tr>
<td>Pioneer brand DE-1998</td>
<td>13.0</td>
<td>32.1</td>
<td>28.9</td>
<td>18.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>19.5</td>
<td>31.6</td>
<td>25.5</td>
<td>12.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Triumph 766 CRT</td>
<td>10.3</td>
<td>29.8</td>
<td>20.0</td>
<td>30.2</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Table 13. Dryland sunflower confection performance at Wray¹ in 1999.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
<th>Plant Height</th>
<th>Density</th>
<th>Lodging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
<td>in</td>
<td>plants/ac</td>
<td>%</td>
</tr>
<tr>
<td>Seeds 2000 Kodiak</td>
<td>2053</td>
<td>23.3</td>
<td>59</td>
<td>11146</td>
<td>6</td>
</tr>
<tr>
<td>Pioneer brand XF981</td>
<td>2048</td>
<td>22.4</td>
<td>53</td>
<td>10437</td>
<td>29</td>
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<tr>
<td>Triumph 765C</td>
<td>2027</td>
<td>23.7</td>
<td>58</td>
<td>10847</td>
<td>10</td>
</tr>
<tr>
<td>Triumph 766 CRT</td>
<td>1865</td>
<td>22.7</td>
<td>52</td>
<td>10735</td>
<td>12</td>
</tr>
<tr>
<td>Interstate IS 8048</td>
<td>1580</td>
<td>24.6</td>
<td>59</td>
<td>10702</td>
<td>11</td>
</tr>
<tr>
<td>Pioneer brand DE-1998</td>
<td>1154</td>
<td>23.7</td>
<td>51</td>
<td>11682</td>
<td>24</td>
</tr>
<tr>
<td>Average</td>
<td>1788</td>
<td>23.4</td>
<td>56</td>
<td>10925</td>
<td>15</td>
</tr>
<tr>
<td>CV%</td>
<td>19.4</td>
<td></td>
<td></td>
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<tr>
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<td>391</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

¹Trial conducted on the Jim Roberts farm; seeded 6/4 and harvested 10/18.

Table 14. Seed size of dryland sunflower confection performance at Wray in 1999, percent by size.

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>20/64</th>
<th>18/64</th>
<th>16/64</th>
<th>14/64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate IS 8048</td>
<td>15.4</td>
<td>32.4</td>
<td>36.0</td>
<td>12.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Pioneer brand DE-1998</td>
<td>14.4</td>
<td>28.7</td>
<td>38.9</td>
<td>14.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Pioneer brand XF981</td>
<td>27.2</td>
<td>36.9</td>
<td>25.1</td>
<td>7.8</td>
<td>3.0</td>
</tr>
<tr>
<td>Seeds 2000 Kodiak</td>
<td>28.5</td>
<td>30.7</td>
<td>16.4</td>
<td>20.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>24.6</td>
<td>32.1</td>
<td>26.2</td>
<td>10.0</td>
<td>7.1</td>
</tr>
</tbody>
</table>
Seed Company Entrants in the 1999 Colorado Sunflower Performance Trials

<table>
<thead>
<tr>
<th>BRAND/HYBRID ENTRANT</th>
<th>ADDRESS</th>
<th>TELEPHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asgrow Monsanto</td>
<td>3100 Sycamore Rd., Dekalb, IL 60115</td>
<td>(815) 758-3461</td>
</tr>
<tr>
<td>Cargill Cargill Hybrid Seeds</td>
<td>1401 41st Street NW, Fargo, ND 58102</td>
<td>(701) 282-8787</td>
</tr>
<tr>
<td>DEKALB Monsanto</td>
<td>3100 Sycamore Rd., Dekalb, IL 60115</td>
<td>(815) 758-3461</td>
</tr>
<tr>
<td>Interstate Seed</td>
<td>PO Box 338, West Fargo, ND 58078</td>
<td>(701) 282-3373</td>
</tr>
<tr>
<td>Kaystar Kaystar Seed</td>
<td>PO Box 947, Huron, SD 57350</td>
<td>(605) 352-8791</td>
</tr>
<tr>
<td>Mycogen Mycogen Seeds</td>
<td>1340 Corp. Center Curve, Eagan, MN 55121-1233</td>
<td>(800) 380-7282</td>
</tr>
<tr>
<td>Northrup King Novartis Seeds</td>
<td>103 W. Chestnut St., Ste. 306, Garden City, KS 67846</td>
<td>(316) 275-9697</td>
</tr>
<tr>
<td>Pioneer Pioneer Hi-Bred Int’l., Inc.</td>
<td>210 Gateway Mall Ste.-300, Lincoln, NE 68505-2449</td>
<td>(402) 467-5458</td>
</tr>
<tr>
<td>Red River Red River Commodities, Inc.</td>
<td>1320 East College Drive, Colby, KS 67701</td>
<td>(785) 462-3911</td>
</tr>
<tr>
<td>Royal Hybrids Agway, Inc.</td>
<td>314 3rd Street, Grandin, ND 58038</td>
<td>(701) 484-5313</td>
</tr>
<tr>
<td>SEEDS 2000 SEEDS 2000</td>
<td>PO Box 101, Breckenridge, MN 56520</td>
<td>(218) 643-2410</td>
</tr>
<tr>
<td>SIGCO SIGCO Sun Products, Inc.</td>
<td>PO Box 331, Breckenridge, MN 56520</td>
<td>(218) 643-8467</td>
</tr>
<tr>
<td>Triumph Triumph Seed Co., Inc.</td>
<td>PO Box 1050, Ralls, TX 79357</td>
<td>(806) 253-2584</td>
</tr>
</tbody>
</table>

Entry Forms for 2000 Trials
Entry forms for 2000 trials may be obtained from the Department of Soil and Crop Sciences, Colorado State University, Cynthia Johnson, C-4 Plant Science Building, Fort Collins, CO 80523-1170; Telephone (970) 491-1914; Fax (970) 491-2758; e-mail cjohnson@agsci.colostate.edu or web site http://www.colostate.edu/Depts/SoilCrop/extension/CropVar/index.html.

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http://www.colostate.edu/Depts/SoilCrop/extension/CropVar/index.html
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