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: Bethune - George Stahlecker; Cheyenne Wells - Dennis Campbell; Idalia- Jim Roberts; Julesburg - Richard Fryrear. We also acknowledge the participation of the Colorado Experiment Station at Akron (Central Great Plains Field Station). Triumph Seed Co., Inc. (P.O. Box 1050, Ralls TX 79357) contributed oil analyzes and Red River Commodities, Inc. (1320 East College Drive, Colby KS 67701) contributed seed-sizing analyzes for which we are grateful.
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Introduction

Sunflowers have become an important crop in northeastern Colorado. Sunflower acreage (mostly in Kit Carson, Cheyenne, and Yuma counties) rose from almost nothing in 1990 to a high of 115,000 acres in 1995. Confection and oil sunflowers are about equally important in terms of farm receipts. The growth in Colorado sunflower acreage signifies a shift away from the predominant winter wheat/fallow cropping system to a wheat/spring crop/fallow system. Colorado State University’s cropping systems research, innovative extension education in the Golden Plains Area, and commodity prices have influenced this swing toward sunflowers and other spring planted crops.

Hybrid seed is used to plant all sunflower acreage in Colorado at a cost of approximately $1.5 million. Many commercial hybrids are available to our producers. To help our sunflower growers make better hybrid decisions, CSU personnel evaluate commercial sunflower hybrids at different locations in northeastern Colorado. These trials are the only source of unbiased hybrid performance information for Colorado sunflower growers. Participation by the seed companies in the state trials is voluntary. Commercial companies were given the opportunity to enter one or more hybrids at any location. Reference to commercial companies or hybrids is made with the understanding that no discrimination is intended and no endorsement is implied by Colorado State University.

Colorado sunflower performance trials are planted annually at four dryland locations and one irrigated location. At each trial location there are separate trials for oil and for confection hybrids. In 1998, the four dryland locations were Akron, Idalia, Julesburg, and Cheyenne Wells. The irrigated location was Bethune. The 1998 data for the irrigated confection trial at Bethune is not included in this report due to low plant stands.

A randomized complete block design with four 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 10% moisture basis.

The 1998 Sunflower Season

Both sunflower head moth and banded head moth numbers were almost nonexistent this year compared to record levels in 1997. Sunflower seed weevil numbers also were lower in 1998, resulting in reduced control activities. Entomologists credit winter weather for reducing insect number during the 1998 growing season. Traditional “hot spots” for spotted sunflower stem weevil remained “hot” in 1998. Red leaf rust showed up again in 1998 but most oil types are showing continued resistance. New confection hybrids have incorporated rust resistance and only 1050 acres of rust susceptible varieties were sprayed with Folicur on the eastern Colorado plains in 1998. The growing season recorded warmer than normal temperatures and a later than normal killing frost. Above average precipitation at many locations allowed for above average dryland yields but oil contents were below average.

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.
Table 1. Cultural conditions for hybrid sunflowers testing in 1998

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<thead>
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<th>Soil Type</th>
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<th>Idalia</th>
<th>Julesburg</th>
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Table 2. Dryland sunflower oil performance at Akron in 1998

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Table 3. Average dryland sunflower oil performance at Akron, 1997-98

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{^1Trial conducted on the Central Great Plains Research Center; seeded 6/12 and harvested 10/14.}
Table 4. Irrigated sunflower oil performance at Bethune in 1998

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CV% 21.8

LSD_{0.05} 403.6

1Trial conducted on the George Stahlecker farm; seeded 5/20 and harvested 10/12.

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Table 5. Average irrigated sunflower oil performance at Bethune, 1997-98

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<th>Hybrid</th>
<th>Yield (lb/ac)</th>
<th>Test Weight (bu/ac)</th>
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### Table 6. Dryland sunflower oil performance at Cheyenne Wells in 1998

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<th>Plant Height</th>
<th>Density plants/ac</th>
<th>Lodging %</th>
<th>Oil %</th>
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<td>10437 plants/ac</td>
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<td>51 in</td>
<td>12587 plants/ac</td>
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<td>31.7</td>
</tr>
<tr>
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<td>53 in</td>
<td>12032 plants/ac</td>
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<td>14792 plants/ac</td>
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<td>15685 plants/ac</td>
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<td>53 in</td>
<td>14728 plants/ac</td>
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<tr>
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<td>12912 plants/ac</td>
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<td>14526 plants/ac</td>
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<td>33.5</td>
</tr>
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CV% 21.2
LSD (30) 238.8

1Trial conducted on the Dennis Campbell farm; seeded 6/24 and harvested 10/13.
Table 7. Dryland sunflower oil performance at Idalia in 1998

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<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>
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<sup>1</sup>Trial conducted on the Jim Roberts farm; seeded 6/12 and harvested 10/26.

Table 8. Average dryland sunflower oil performance at Idalia, 1997-98

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<th>Yield (lb/ac)</th>
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<td><strong>26.3</strong></td>
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Table 9. Dryland sunflower oil performance at Julesburg in 1998

<table>
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<tr>
<th>Hybrid</th>
<th>Yield (lb/ac)</th>
<th>Test Weight (bu/ac)</th>
<th>Plant Height (in)</th>
<th>Plant Density (plants/ac)</th>
<th>Lodging %</th>
<th>Oil %</th>
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<tr>
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<td>60</td>
<td>15307</td>
<td>0</td>
<td>34.6</td>
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<tr>
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<td>20.8</td>
<td>55</td>
<td>16432</td>
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<tr>
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<td>16973</td>
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<td>16786</td>
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<td>14931</td>
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<td>36.8</td>
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<td>61</td>
<td>15634</td>
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<td>33.3</td>
</tr>
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<td>Cargill SF290NL</td>
<td>1103</td>
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<td>51</td>
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<td><strong>53</strong></td>
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<td><strong>1</strong></td>
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CV% 21.5
LSD(30) 248.1

*Trial conducted on the Richard Fryrear farm; seeded 6/15 and harvested 10/27.*

Table 10. Average dryland sunflower oil performance at Julesburg, 1997-98

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield (lb/ac)</th>
<th>Test Weight (bu/ac)</th>
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</thead>
<tbody>
<tr>
<td>DEKALB DK3900</td>
<td>1685</td>
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<tr>
<td>DEKALB DK3790</td>
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<td>22.1</td>
</tr>
<tr>
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<td>1626</td>
<td>21.2</td>
</tr>
<tr>
<td>Pioneer brand 6451</td>
<td>1618</td>
<td>22.3</td>
</tr>
<tr>
<td>Interstate IS 6767</td>
<td>1606</td>
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<td>22.4</td>
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<td>1542</td>
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<tr>
<td>Average</td>
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<td><strong>22.0</strong></td>
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</table>
Table 11. Dryland sunflower confection performance at Akron in 1998

<table>
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<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>
</tr>
</thead>
<tbody>
<tr>
<td>Red River RRC 2211</td>
<td>1168</td>
<td>17.9</td>
<td>56</td>
<td>13366</td>
</tr>
<tr>
<td>Red River RRC 3531</td>
<td>1054</td>
<td>19.5</td>
<td>54</td>
<td>12068</td>
</tr>
<tr>
<td>Red River RRC 9490</td>
<td>1041</td>
<td>19.9</td>
<td>54</td>
<td>12197</td>
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<td>Triumph 520C</td>
<td>975</td>
<td>18.8</td>
<td>58</td>
<td>12330</td>
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<tr>
<td>Pioneer brand 6946</td>
<td>963</td>
<td>19.5</td>
<td>52</td>
<td>10957</td>
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<tr>
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<td>17.7</td>
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<td>13595</td>
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<td>12229</td>
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<td>50</td>
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<td>53</td>
<td>11387</td>
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<td>13119</td>
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<td><strong>54</strong></td>
<td><strong>12274</strong></td>
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Table 12. Average dryland sunflower confection performance at Akron, 1997-98

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield (lb/ac)</th>
</tr>
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<tbody>
<tr>
<td>Triumph 760C</td>
<td>1121</td>
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<td>Seeds 2000 Kodiak</td>
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<tr>
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<tr>
<td>Red River RRC 2331</td>
<td>1041</td>
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<tr>
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<td>1039</td>
</tr>
<tr>
<td>Red River RRC 3531</td>
<td>995</td>
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<tr>
<td>Triumph 520C</td>
<td>945</td>
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<tr>
<td>Red River RRC 2213</td>
<td>910</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>1027</strong></td>
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Table 13. Seed size of dryland sunflower confection performance at Akron in 1998

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>To 20/64</th>
<th>To 18/64</th>
<th>To 16/64</th>
<th>To 14/64</th>
</tr>
</thead>
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<tr>
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<td>33.6</td>
<td>30.4</td>
<td>14.6</td>
<td>10.8</td>
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<td>Pioneer brand 6946</td>
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<td>25.6</td>
<td>41.7</td>
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<td>7.9</td>
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<td>29.4</td>
<td>19.3</td>
<td>10.0</td>
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<tr>
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<td>4.8</td>
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<td>27.9</td>
<td>17.5</td>
<td>9.9</td>
</tr>
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<td>31.5</td>
<td>31.4</td>
<td>16.9</td>
<td>8.1</td>
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<td>33.1</td>
<td>28.3</td>
<td>12.4</td>
<td>6.7</td>
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<td>26.4</td>
<td>33.9</td>
<td>18.6</td>
<td>12.7</td>
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</table>

1Trial conducted on the Central Great Plains Research Center; seeded 6/12 and harvested 10/14.
Table 14. Dryland sunflower confection performance at Cheyenne Wells in 1998

<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>
</tr>
</thead>
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<td>9799</td>
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<td><strong>9525</strong></td>
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1Trial conducted on the Dennis Campbell farm; seeded 6/24 and harvested 10/13.

Table 15. Seed size of dryland sunflower confection performance at Cheyenne Wells in 1998

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>To 20/64</th>
<th>To 18/64</th>
<th>To 16/64</th>
<th>To 14/64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioneer brand 63C71</td>
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<td>20.9</td>
<td>7.6</td>
<td>3.8</td>
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<td>34.1</td>
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<td>3.6</td>
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<tr>
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<td>33.6</td>
<td>32.0</td>
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<td>25.1</td>
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<td>7.6</td>
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<td>30.4</td>
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<td>9.9</td>
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</table>
Table 16. Dryland sunflower confection performance at Idalia in 1998

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield lb/ac</th>
<th>Test Weight bu/ac</th>
<th>Plant Height in</th>
<th>Plants/ac</th>
<th>Lodging %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triumph 760C</td>
<td>2221</td>
<td>19.7</td>
<td>70</td>
<td>9273</td>
<td>4</td>
</tr>
<tr>
<td>Interstate IS EXP49097</td>
<td>2127</td>
<td>20.2</td>
<td>64</td>
<td>10322</td>
<td>1</td>
</tr>
<tr>
<td>Pioneer brand EXP-1998</td>
<td>2059</td>
<td>20.0</td>
<td>63</td>
<td>10753</td>
<td>1</td>
</tr>
<tr>
<td>Triumph 520C</td>
<td>1970</td>
<td>19.2</td>
<td>67</td>
<td>12060</td>
<td>5</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>1869</td>
<td>19.9</td>
<td>67</td>
<td>10919</td>
<td>4</td>
</tr>
<tr>
<td>Pioneer brand 63C71</td>
<td>1835</td>
<td>19.1</td>
<td>62</td>
<td>10554</td>
<td>1</td>
</tr>
<tr>
<td>Seeds 2000 Kodiak</td>
<td>1776</td>
<td>19.6</td>
<td>66</td>
<td>11529</td>
<td>5</td>
</tr>
<tr>
<td>Pioneer brand 6946</td>
<td>1617</td>
<td>19.1</td>
<td>64</td>
<td>10508</td>
<td>1</td>
</tr>
<tr>
<td>Mycogen 9490</td>
<td>1384</td>
<td>20.0</td>
<td>66</td>
<td>12043</td>
<td>2</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>1873</strong></td>
<td><strong>19.7</strong></td>
<td><strong>66</strong></td>
<td><strong>10885</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>CV%</td>
<td>16.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSD (.30)</td>
<td>265.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1Trial conducted on the Jim Roberts farm; seeded 6/12 and harvested 10/26.

Table 18. Seed size of dryland sunflower confection performance at Idalia in 1998

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Above 22/64</th>
<th>To 20/64</th>
<th>To 18/64</th>
<th>To 16/64</th>
<th>To 14/64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate IS EXP49097</td>
<td>57.7</td>
<td>27.6</td>
<td>10.8</td>
<td>3.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Mycogen 9490</td>
<td>13.4</td>
<td>29.9</td>
<td>27.9</td>
<td>21.4</td>
<td>7.4</td>
</tr>
<tr>
<td>Pioneer brand 63C71</td>
<td>46.0</td>
<td>30.6</td>
<td>13.9</td>
<td>6.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Pioneer brand 6946</td>
<td>34.3</td>
<td>32.9</td>
<td>20.9</td>
<td>8.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Pioneer brand EXP DE-1998</td>
<td>46.4</td>
<td>40.5</td>
<td>9.6</td>
<td>2.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Seeds 2000 Kodiak</td>
<td>26.8</td>
<td>36.0</td>
<td>24.5</td>
<td>9.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Triumph 520C</td>
<td>37.2</td>
<td>40.1</td>
<td>14.6</td>
<td>5.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Triumph 760C</td>
<td>40.0</td>
<td>35.7</td>
<td>16.4</td>
<td>5.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>35.3</td>
<td>38.6</td>
<td>17.7</td>
<td>5.7</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Table 19. Dryland sunflower confection performance at Julesburg in 1998

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Yield</th>
<th>Test Weight</th>
<th>Plant Height</th>
<th>Density</th>
<th>Lodging</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>lb/ac</td>
<td>bu/ac</td>
<td>in</td>
<td>plants/ac</td>
<td>%</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>1461</td>
<td>16.7</td>
<td>61</td>
<td>13434</td>
<td>2</td>
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<tr>
<td>Interstate IS EXP49097</td>
<td>1364</td>
<td>16.2</td>
<td>59</td>
<td>13608</td>
<td>1</td>
</tr>
<tr>
<td>Red River RRC 2331</td>
<td>1342</td>
<td>17.8</td>
<td>60</td>
<td>14137</td>
<td>0</td>
</tr>
<tr>
<td>Red River RRC 3531</td>
<td>1310</td>
<td>16.2</td>
<td>54</td>
<td>13159</td>
<td>0</td>
</tr>
<tr>
<td>Red River RRC 2213</td>
<td>1307</td>
<td>16.1</td>
<td>57</td>
<td>14992</td>
<td>2</td>
</tr>
<tr>
<td>Red River RRC EX2413</td>
<td>1274</td>
<td>17.4</td>
<td>58</td>
<td>12960</td>
<td>1</td>
</tr>
<tr>
<td>Triumph 520C</td>
<td>1251</td>
<td>16.7</td>
<td>61</td>
<td>13657</td>
<td>1</td>
</tr>
<tr>
<td>Triumph 760C</td>
<td>1224</td>
<td>16.6</td>
<td>58</td>
<td>13098</td>
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<td>Pioneer brand 63C71</td>
<td>1197</td>
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<tr>
<td>Pioneer brand EXP DE-1998</td>
<td>1145</td>
<td>17.1</td>
<td>58</td>
<td>13909</td>
<td>1</td>
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<tr>
<td>Red River RRC 2211</td>
<td>1121</td>
<td>16.1</td>
<td>61</td>
<td>14587</td>
<td>1</td>
</tr>
<tr>
<td>Red River RRC 9490</td>
<td>1065</td>
<td>16.3</td>
<td>60</td>
<td>14658</td>
<td>0</td>
</tr>
<tr>
<td>Pioneer brand 6946</td>
<td>1013</td>
<td>17.0</td>
<td>57</td>
<td>13959</td>
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</tr>
<tr>
<td>Average</td>
<td>1237</td>
<td>16.7</td>
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<td>13860</td>
<td>1</td>
</tr>
<tr>
<td>CV%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSD (.30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>205.7</td>
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</table>

1Trial conducted on the Richard Fryrear farm; seeded 6/15 and harvested 10/27.

Table 20. Average dryland sunflower confection performance at Julesburg, 1997-98

<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>Red River RRC 2331</td>
<td>1354</td>
<td>17.4</td>
</tr>
<tr>
<td>Red River RRC 3531</td>
<td>1299</td>
<td>16.3</td>
</tr>
<tr>
<td>Red River RRC 2211</td>
<td>1234</td>
<td>16.0</td>
</tr>
<tr>
<td>Red River RRC 2213</td>
<td>1228</td>
<td>16.0</td>
</tr>
<tr>
<td>Average</td>
<td>1289</td>
<td>16.4</td>
</tr>
</tbody>
</table>

Table 21. Seed size of dryland sunflower confection performance at Julesburg in 1998

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate IS EXP49097</td>
<td>43.6</td>
<td>26.1</td>
<td>17.9</td>
<td>8.6</td>
<td>3.8</td>
</tr>
<tr>
<td>Pioneer brand 63C71</td>
<td>30.0</td>
<td>28.2</td>
<td>25.5</td>
<td>10.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Pioneer brand 6946</td>
<td>19.1</td>
<td>30.3</td>
<td>26.5</td>
<td>17.6</td>
<td>6.5</td>
</tr>
<tr>
<td>Pioneer brand EXP DE-1998</td>
<td>33.8</td>
<td>29.2</td>
<td>26.0</td>
<td>7.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Red River RRC 2211</td>
<td>22.9</td>
<td>33.8</td>
<td>23.4</td>
<td>11.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Red River RRC 2213</td>
<td>43.3</td>
<td>24.9</td>
<td>16.5</td>
<td>9.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Red River RRC 2331</td>
<td>24.6</td>
<td>27.1</td>
<td>20.6</td>
<td>14.4</td>
<td>13.3</td>
</tr>
<tr>
<td>Red River RRC 3531</td>
<td>40.0</td>
<td>27.8</td>
<td>20.4</td>
<td>7.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Red River RRC 9490</td>
<td>24.4</td>
<td>28.8</td>
<td>23.4</td>
<td>15.4</td>
<td>8.0</td>
</tr>
<tr>
<td>Red River RRC EX2413</td>
<td>36.4</td>
<td>30.8</td>
<td>17.8</td>
<td>10.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Triumph 520C</td>
<td>32.4</td>
<td>27.8</td>
<td>26.4</td>
<td>10.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Triumph 760C</td>
<td>38.5</td>
<td>25.4</td>
<td>21.2</td>
<td>9.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Triumph 765C</td>
<td>46.4</td>
<td>33.6</td>
<td>13.6</td>
<td>5.0</td>
<td>1.4</td>
</tr>
</tbody>
</table>
### Seed Company Entrants in the 1998 Colorado Sunflower Performance Trials

<table>
<thead>
<tr>
<th>BRAND/HYBRID ENTRANT</th>
<th>ADDRESS</th>
<th>TELEPHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Hybrids</td>
<td>Agway, Inc.</td>
<td>PO Box 169, Grandin, ND 58038</td>
</tr>
<tr>
<td>Cargill</td>
<td>Cargill Hybrid Seeds</td>
<td>1401 41st Street NW, Fargo, ND 58102</td>
</tr>
<tr>
<td>DEKALB</td>
<td>DEKALB Genetics Corp.</td>
<td>3100 Sycamore Rd., DeKalb, IL 60115</td>
</tr>
<tr>
<td>Interstate</td>
<td>Interstate Payco Seed Co.</td>
<td>1215 Prairie Pkwy, PO Box 338, West Fargo, ND 58078</td>
</tr>
<tr>
<td>Kaystar</td>
<td>Kaystar Seed</td>
<td>702 3rd Street SW, PO Box 947, Huron, SD 57350</td>
</tr>
<tr>
<td>Mycogen</td>
<td>Mycogen Seeds</td>
<td>1340 Corporate Center Curve, St. Paul, MN 55121-1428</td>
</tr>
<tr>
<td>Northrup King</td>
<td>Novartis Seeds</td>
<td>Box 959, Minneapolis, MN 55440</td>
</tr>
<tr>
<td>Pioneer</td>
<td>Pioneer Hi-Bred Int’l., Inc.</td>
<td>210 Gateway Mall Suite-300, Lincoln, NE 68505-2449</td>
</tr>
<tr>
<td>Pioneer</td>
<td>Pioneer Hi-Bred Int’l., Inc.</td>
<td>1616 S. Kentucky, Suite C-150, Amarillo, TX 79102</td>
</tr>
<tr>
<td>Red River</td>
<td>Red River Commodities, Inc.</td>
<td>1320 East College Drive, Colby, KS 67701</td>
</tr>
<tr>
<td>SEEDS 2000</td>
<td>SEEDS 2000</td>
<td>Box 101, Breckenridge, MN 56520</td>
</tr>
<tr>
<td>SIGCO</td>
<td>SIGCO Sun Products, Inc.</td>
<td>90 North 8th St., PO Box 331, Breckenridge, MN 56520</td>
</tr>
<tr>
<td>Triumph</td>
<td>Triumph Seed Co., Inc.</td>
<td>PO Box 1050, Hwy 62 Bypass, Ralls, TX 79357</td>
</tr>
</tbody>
</table>

### Entry Forms for 1999 Trials

Entry forms for 1999 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.

### Additional Copy Request

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