**PROJECT TITLE:** Evaluation of Canola Quality Spring Brown Mustard under Dryland Conditions near Huntley, Montana. (Exp. 02BPT08).

**PROJECT LEADERS:**
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**OBJECTIVES:**
This initial investigation evaluates and compares spring planted brown mustard (*Brassica juncea*) and canola (*Brassica napus*) under dryland conditions in south central Montana. The five brown mustards planted in this study have been bred and selected to produce seed with canola quality oil characteristics rather than the properties associated with condiment mustard. This information should help determine if canola quality brown mustard is better adapted than conventional canola for production under the warmer and dryer climates of south central Montana.

**METHODS:**
The 2002 *Brassica* species performance trial test plots consisted of a 30-foot, 7-row plot with 6-inch row spacing. Seeding rates were 6.0 lb/ac for *B. juncea* and 6.5 lb/ac for *B. napus*. The trial was planted using a randomized complete block design with six replications. Three random *Brassica* plant heights were measured in inches from the soil surface to the top of the plant at maturity, in each plot and in all replications. All rows of each test plot were trimmed 60 inches and harvested using an experimental-plot combine. Recorded seed yields were adjusted to 10% grain moisture content, and are reported in pounds per acre.

**RESULTS and SUMMARY:**
Crop establishment, productivity and quality of *Brassica* species canola-quality mustard and a *Brassica napus* check are presented in Table 1. Seed yield averaged 65.9 lb/ac for the *B. juncea* entries and was 69.5 lb/ac for the *B. napus* check. Seed yield ranged from 99.6 lb/ac for ‘Amulet’ to 36.2 lb/ac for ‘Arid’. One other entry, ‘PC140’ (84.3 lb/ac), produced seed yield equal to that of the highest yielding entry.

**FUTURE PLANS:**
Plans for further evaluation of spring *Brassica* species evaluations under dryland conditions during 2003 at Southern Agricultural Research Center are uncertain.
Table 1. Performance and grain quality of five canola quality brown mustard cultivars and experimental lines established under dryland conditions near Huntley, Montana during 2002. (Exp. 02BPT08).

<table>
<thead>
<tr>
<th>Entry</th>
<th>Species</th>
<th>Grain Yield</th>
<th>Plant Height</th>
<th>Thousand Seed Weight</th>
<th>Oil Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>lb/ac</td>
<td>inches</td>
<td>g</td>
<td>%</td>
</tr>
<tr>
<td>Amulet</td>
<td>B. Juncea</td>
<td>99.6**</td>
<td>36.7</td>
<td>3.3</td>
<td>29.8</td>
</tr>
<tr>
<td>Arid</td>
<td>B. Juncea</td>
<td>36.2</td>
<td>37.2</td>
<td>3.4</td>
<td>31.7</td>
</tr>
<tr>
<td>Hyola 401 (check)</td>
<td>B. Napus</td>
<td>69.5</td>
<td>25.6</td>
<td>4.5</td>
<td>34.5</td>
</tr>
<tr>
<td>PC-138</td>
<td>B. Juncea</td>
<td>51.2</td>
<td>37.5</td>
<td>3.5</td>
<td>31.2</td>
</tr>
<tr>
<td>PC-140</td>
<td>B. Juncea</td>
<td>84.3*</td>
<td>35.1</td>
<td>3.4</td>
<td>31.1</td>
</tr>
<tr>
<td>PC-141</td>
<td>B. Juncea</td>
<td>58.4</td>
<td>35.7</td>
<td>3.5</td>
<td>31.2</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>66.5</td>
<td>34.6</td>
<td>3.6</td>
<td>31.6</td>
</tr>
</tbody>
</table>

LSD (p=0.01) 24.0 2.8 0.3 0.4

CV% 30.3 6.7 6.4 1.1

1/ Yields are on a “as is” moisture basis.

** Indicates highest yielding cultivar.

* Indicates cultivars yielding equal to highest yielding cultivar based on Fisher’s protected LSD (p=0.05).

Spring Brassica species Performance Trial (Exp. 02BPT08)

Planted: April 10, 2002
Harvested: July 23, 2002
Fertility: 18-46-00, 100 lb/a preplant incorporated, March 7, 2002
Herbicide: none
Insecticide: Sevin XLR, 1 qt, 4-6 leaves, May 28, 2002
Previous Crop: summer fallow
Precipitation: 4.69 inches