Regional Variety Trials in Sask

John Ippolito, Sask Ag

Presented to Saskatchewan Oat Development Commission
8 January 2012
Overview

• Saskatchewan Variety Performance Group (SVPG) and Saskatchewan Advisory Council on Grain Crops (SACGC) – regional oat trials in SK

• SCIC reports on seeded acres by variety

• Top 5 oat varieties (by SCIC) and some movers.
Overview of RVT

- **SVPG**
  - Conducts the regional trials to compare agronomic performance

- **SACGC**
  - Supervises collection, analysis and compiling the data

- **Varieties of Grain Crops 2013 (yellow book)**

- **Oats**
  - varieties tested
  - locations
Varieties of Grain Crops 2013

Crop Production Areas

The cropland of Saskatchewan has been divided into four areas based roughly on agro-climatic conditions. Crop yields can vary from area to area. In choosing a variety, producers will want to consider the yield data in combination with marketing and agronomic factors.

Area 1: Drought is a definite hazard and high winds are common. Sclerotia blight often occur in this area. Cereal rust may be a problem in the northeastern section.

Area 2: Drought and sawfly may be problems in the western and central sections of the area. Cereal rust may be a problem in the southern section.

Area 3: Sawfly can also be a problem. Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northern section.

Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest conditions are frequent problems.

Note About Dividing Lines: The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

Table of Contents
Cereal Crops
Wheat .................................................. 4
Winter Wheat ...................................... 5
Rye .................................................. 6
Triticale ............................................. 6
Malt Barley ......................................... 7
Feed and Food Barley .......................... 9
Oat .................................................. 10

Other Crops
Buckwheat, Canola, Cereal, Fenugreek, Safflower, Canaryseed ............................... 11

General Seed Facts ................................ 12

Pulse Crops
Lentil .................................................. 13
Field Pea ........................................... 14
Chickpea .......................................... 15
Soybean ........................................... 15
Dry Bean .......................................... 16
Faba Bean ......................................... 16

Oilseed Crops
Flax .................................................. 17
Sunflower .......................................... 17
Mustard ............................................ 18
Canola ............................................. 19

Cultivars
Breeding Institutions and Seed Distributors ......................................................... 22

Symbols Used in 2013 Seed Guide:
§ Variety may not be described in 2014
-- Insufficient test data to describe
© Plant Breeders’ Rights at time of printing
© Applied for PBR protection at time of printing

Abbreviations used:
Relative maturity: VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late
Resistance: VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor, n/a = not applicable
Seed size: S = Small, M = Medium, L = Large

The Information contained herein is provided by the Saskatchewan Advisory Council on Grain Crops. To reproduce this information in whole or in part, permission must be obtained from the council. Please contact Mitchell Japp, secretary, at (306) 787-4664.

2013 Seed Guide
Oats Tested in 2012

• CDC Dancer (check)
• Bradley
• CDC Seabiscuit
• CDC Big Brown
• CDC Nasser
• Souris
• Stride
• OT3054
• OT3056
Oat Locations for SVPG Trials
SCIC oat data

- Variety data based on 827,164 seeded acres insured with SCIC (accurate as of Nov 2, 2012)
- 15% of total acres reported as unknown variety, or left blank
- Varieties with less than 400 acres reported are not included.

<table>
<thead>
<tr>
<th>Variety Name</th>
<th>Seeded Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Morgan</td>
<td>306,604</td>
</tr>
<tr>
<td>CDC Dancer</td>
<td>97,882</td>
</tr>
<tr>
<td>Derby</td>
<td>55,544</td>
</tr>
<tr>
<td>CDC Orrin</td>
<td>49,460</td>
</tr>
<tr>
<td>Leggett</td>
<td>37,152</td>
</tr>
<tr>
<td>Triactor</td>
<td>27,536</td>
</tr>
<tr>
<td>SW Betania</td>
<td>24,420</td>
</tr>
<tr>
<td>Pinnacle</td>
<td>21,286</td>
</tr>
<tr>
<td>Calibre</td>
<td>12,745</td>
</tr>
<tr>
<td>Ronald</td>
<td>10,332</td>
</tr>
<tr>
<td>CDC Minstrel</td>
<td>3,696</td>
</tr>
<tr>
<td>Summit</td>
<td>3,585</td>
</tr>
</tbody>
</table>
Diseases of Oat

• Most recent available data: 2011

• Fusarium
  – Detected *Fusarium graminearum*, *F. poae*, *F. avenaceum* and *F. culmorum*.
  – Largely in NE Sask, but that’s where the oats are.
  – *F. poae* was most common by plate method. PCR detected *F. graminearum* and *F. poae* in all samples

• Stem rust
  – Environmental conditions were not favourable for stem rust in 2011.
Stem rust on oat
Crown rust on oat
AC Morgan

- 37% of insured oat acres with SCIC
- Yield ≥ CDC Dancer
- Maturity ≥ CDC Dancer
- Very good standability
- Susceptible to stem rust and crown rust.
- Distributor: SeCan
CDC Dancer

- Check variety in SVPG regional trials
- 12% of insured oat acres with SCIC
- Resistant to smut
- Slightly lower yield relative to other top varieties
- Good standability
- Medium for maturity (96 days)
- Distributor: FP Genetics / Cargill
Derby

• 7% of insured oat acres with SCIC
• Yield similar to CDC Dancer
• Medium maturity
• Good standability
• Susceptible to stem rust and crown rust. Moderately susceptible to smut.
• Distributor: Mastin Seeds
CDC Orrin

- 6% of insured oat acres with SCIC
- Yield > CDC Dancer
- Maturity ≥ CDC Dancer
- Good standability
- Resistant to smut. Susceptible to crown rust. Moderately susceptible to stem rust.
- Distributor: FP Genetics / Cargill
Leggett

- 4.5% of insured oat acres with SCIC
- Yield ≥ CDC Dancer
- Maturity > CDC Dancer
- Good standability.
- Resistant to crown rust and smut.
- Distributor: FP Genetics
CDC Minstrel

- 0.4% of insured oat acres with SCIC
- Yield > CDC Dancer
- Maturity > CDC Dancer
- Very good standability
- Moderately susceptible to crown rust, resistant to smut.
- Distributor: FP Genetics
Summit

- 0.4% of insured oat acres with SCIC
- Yield similar to CDC Dancer
- Medium for maturity
- Good standability
- Resistant to crown rust and smut
- Distributor: FP Genetics
Stride

- Not yet reported on SCIC stats.
- Yield > CDC Dancer
- Maturity > CDC Dancer
- Good standability
- Resistant to crown rust and smut
- Distributor: SeCan
Questions?

• Acknowledgments:
  – Mitchell Japp
  – Drs. Aaron Beattie and Jennifer Mitchell-Fetch
  – Sean Miller
  – Brad Champagne
  – Barry Lane
### Oat

#### Main Characteristics of Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Years Tested</th>
<th>Yield as % of CDC Dancer</th>
<th>Test Weight (g/0.5L)</th>
<th>% Hull</th>
<th>% Plump</th>
<th>Relative Maturity*</th>
<th>Resistance to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC Dancer</td>
<td>8</td>
<td>100</td>
<td>100</td>
<td>253</td>
<td>19.8</td>
<td>70</td>
<td>M</td>
</tr>
<tr>
<td>SW Betania</td>
<td>7</td>
<td>105</td>
<td>105</td>
<td>245</td>
<td>22.0</td>
<td>67</td>
<td>M</td>
</tr>
<tr>
<td>CDC Big Brown</td>
<td>5</td>
<td>107</td>
<td>107</td>
<td>256</td>
<td>20.4</td>
<td>71</td>
<td>L</td>
</tr>
<tr>
<td>CDC Boyer</td>
<td>8</td>
<td>99</td>
<td>100</td>
<td>232</td>
<td>23.3</td>
<td>71</td>
<td>M</td>
</tr>
<tr>
<td>Bradley</td>
<td>4</td>
<td>106</td>
<td>102</td>
<td>247</td>
<td>22.9</td>
<td>65</td>
<td>M</td>
</tr>
<tr>
<td>Derby</td>
<td>8</td>
<td>98</td>
<td>102</td>
<td>264</td>
<td>22.7</td>
<td>63</td>
<td>M</td>
</tr>
<tr>
<td>HiFi</td>
<td>6</td>
<td>99</td>
<td>97</td>
<td>253</td>
<td>22.4</td>
<td>55</td>
<td>M</td>
</tr>
<tr>
<td>Jordan</td>
<td>7</td>
<td>110</td>
<td>118</td>
<td>256</td>
<td>22.6</td>
<td>71</td>
<td>L</td>
</tr>
<tr>
<td>Leggett</td>
<td>6</td>
<td>102</td>
<td>103</td>
<td>248</td>
<td>25.2</td>
<td>47</td>
<td>E</td>
</tr>
<tr>
<td>Lu</td>
<td>8</td>
<td>102</td>
<td>103</td>
<td>248</td>
<td>25.2</td>
<td>47</td>
<td>E</td>
</tr>
<tr>
<td>CDC Minstral</td>
<td>7</td>
<td>106</td>
<td>107</td>
<td>245</td>
<td>21.0</td>
<td>75</td>
<td>L</td>
</tr>
<tr>
<td>AC Morgan</td>
<td>8</td>
<td>104</td>
<td>108</td>
<td>236</td>
<td>25.1</td>
<td>54</td>
<td>L</td>
</tr>
<tr>
<td>CDC Morrison</td>
<td>3</td>
<td>100</td>
<td>95</td>
<td>248</td>
<td>24.4</td>
<td>87</td>
<td>L</td>
</tr>
<tr>
<td>CDC Nasser</td>
<td>5</td>
<td>112</td>
<td>109</td>
<td>233</td>
<td>21.8</td>
<td>64</td>
<td>VL</td>
</tr>
<tr>
<td>CDC Orrin</td>
<td>8</td>
<td>108</td>
<td>109</td>
<td>253</td>
<td>23.2</td>
<td>74</td>
<td>L</td>
</tr>
<tr>
<td>Pinnacle</td>
<td>8</td>
<td>113</td>
<td>109</td>
<td>244</td>
<td>23.6</td>
<td>70</td>
<td>VL</td>
</tr>
<tr>
<td>Ronald</td>
<td>7</td>
<td>112</td>
<td>99</td>
<td>249</td>
<td>22.4</td>
<td>55</td>
<td>L</td>
</tr>
<tr>
<td>CDC Seabiscuit</td>
<td>6</td>
<td>111</td>
<td>106</td>
<td>240</td>
<td>20.3</td>
<td>73</td>
<td>L</td>
</tr>
<tr>
<td>Souris</td>
<td>6</td>
<td>109</td>
<td>105</td>
<td>253</td>
<td>21.5</td>
<td>58</td>
<td>M</td>
</tr>
<tr>
<td>Stride</td>
<td>4</td>
<td>110</td>
<td>111</td>
<td>255</td>
<td>22.9</td>
<td>65</td>
<td>L</td>
</tr>
<tr>
<td>Summit</td>
<td>6</td>
<td>101</td>
<td>102</td>
<td>256</td>
<td>21.6</td>
<td>67</td>
<td>M</td>
</tr>
<tr>
<td>Triactor</td>
<td>7</td>
<td>114</td>
<td>118</td>
<td>240</td>
<td>22.8</td>
<td>66</td>
<td>L</td>
</tr>
<tr>
<td>CDC Weaver</td>
<td>7</td>
<td>108</td>
<td>111</td>
<td>245</td>
<td>19.2</td>
<td>71</td>
<td>L</td>
</tr>
</tbody>
</table>

* Maturity Rating M = 96 days

### Additional Information

Although disease pressure is lower in eastern Saskatchewan than in Manitoba, crown rust races capable of attacking most varieties, except CDC Big Brown, HiFi, Leggett, CDC Morrison, Souris, Stride, Summit, and Triactor are increasing in southeast Saskatchewan. Early seeding will reduce the likelihood of severe infection.

#### Feed Oat

CDC SO-I and CDC Nasser are specialty feed oat varieties with higher digestible energy for cattle.

#### Forage Oat

CDC Baler, CDC Haymaker and Murphy are forage oat varieties available for annual forage production in Saskatchewan.

#### Hulless Oat

Bullion, AC Gwen, and Lee Williams are hulless varieties available for production in Saskatchewan. The hull is part of normal oat yield, but hulless types yield less. They are difficult to handle and store and should be stored at less than 12 per cent moisture.

#### False Wild Oats or Fatuoids

False wild oats, or fatuoids, are off-types within common oat fields that have an appearance similar to wild oat, most noticeably, a prominent, dark awn and increased hairiness at the base of each floret. They are thought to result from the infrequent cross-pollination between common oat (Avena sativa) and true wild oat (Avena fatua). As such, their presence will likely be observed more often in fields planted from farm-saved seed. They have been reported within fields of common oat at rates up to 1 per cent and occur within all oat varieties.
## Summary of Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield as % of CDC Dancer</th>
<th>Maturity</th>
<th>Lodging</th>
<th>Stem Rust</th>
<th>Crown Rust</th>
<th>Smut</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC Dancer</td>
<td>100 100</td>
<td>M</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>VG</td>
</tr>
<tr>
<td>SW Betania</td>
<td>105 105</td>
<td>M</td>
<td>G</td>
<td>VP</td>
<td>P</td>
<td>G</td>
</tr>
<tr>
<td>Derby</td>
<td>98 102</td>
<td>M</td>
<td>G</td>
<td>VP</td>
<td>VP</td>
<td>P</td>
</tr>
<tr>
<td>Legget</td>
<td>103 104</td>
<td>L</td>
<td>G</td>
<td>F</td>
<td>VG</td>
<td>VG</td>
</tr>
<tr>
<td>CDC Minstrel</td>
<td>106 107</td>
<td>L</td>
<td>VG</td>
<td>F</td>
<td>P</td>
<td>VG</td>
</tr>
<tr>
<td>AC Morgan</td>
<td>104 108</td>
<td>L</td>
<td>VG</td>
<td>VP</td>
<td>VP</td>
<td>F</td>
</tr>
<tr>
<td>CDC Orrin</td>
<td>108 109</td>
<td>L</td>
<td>G</td>
<td>P</td>
<td>VP</td>
<td>VG</td>
</tr>
<tr>
<td>Stride</td>
<td>110 111</td>
<td>L</td>
<td>G</td>
<td>F</td>
<td>VG</td>
<td>VG</td>
</tr>
<tr>
<td>Summit</td>
<td>101 102</td>
<td>M</td>
<td>G</td>
<td>F</td>
<td>VG</td>
<td>VG</td>
</tr>
<tr>
<td>Triactor</td>
<td>114 118</td>
<td>L</td>
<td>G</td>
<td>VP</td>
<td>G</td>
<td>F</td>
</tr>
</tbody>
</table>

---

**Resistance to:**

- **Yield as %**
- **Maturity**
- **Lodging**
- **Stem Rust**
- **Crown Rust**
- **Smut**
Triactor

- 3% of insured oat acres with SCIC
- Yield > CDC Dancer
- Maturity > CDC Dancer
- Good standability
- Moderately resistant to crown rust.
- Susceptible to stem rust.
- Distributor: Canterra
SW Betania

- 3% of insured oat acres with SCIC
- Yield ≥ CDC Dancer
- Medium maturity
- Good standability
- Susceptible to stem rust, moderately susceptible to crown rust
- Moderately resistant to smut
- Distributor: Viterra