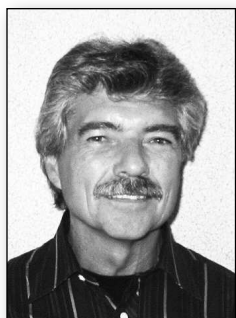


# MUSTARD GROWER

September 2006 Issue

## Chairman's Message

By: *Erroll Simington*



An early harvest seems to be the pattern for the province this fall. For those of us in the southwest corner, lack of precipitation and hoards of gophers have devastated our crops to almost nothing. This is a repeat of conditions experienced in 2005, so we had little stored moisture, and big populations of gophers at the beginning of the season. Across the province, it would appear that it will be an

average year for mustard growers.

As in previous years, the SMDC partnered with the Agriculture and Agri-Food Canada (AAFC) Research Station in Saskatoon to host a very successful Field Day on July 14. Approximately 40 producers, industry representatives and researchers attended. It would be great if more growers could plan to attend the 2007 Field Day and bring along a neighbor so more producers can benefit from the information and interaction. Thanks again to AAFC for their cooperation in making the day possible.

Many in the mustard industry believe we are at a crossroads. Statistics on our production, processing and export speak volumes about the current state of the global mustard industry, an industry which is on the cusp of huge potential. But we also face serious challenges too – stronger competition from growers in other parts of the world (some of whom may produce superior quality), coupled with transportation issues are just a few issues that must be addressed if we hope to hold our current status.

Recognizing these concerns, the SMDC and the Canadian Mustard Association outlined a strategy: "Mustard 21 – Leading Canada's Mustard Industry through the 21st Century" and have submitted a proposal to AAFC to further develop our industry.

Mustard 21 is an opportunity to protect Canada's investment in the mustard industry. Federal and Provincial Governments as well as industry have generously contributed research funding and infrastructure to create an industry that

is beginning to create new value added opportunities for Canada. A timely infusion of resources would help realize the full potential of this industry and create more economic opportunities for Canada and its mustard producers. We will continue to update you on the progress of this exciting new opportunity for our industry.

We are preparing for the annual election of directors this fall. There are two Board of Director positions open for election in October. Information about the election and how to obtain nomination forms are included on page 7 of this newsletter. It is important that growers take the time to fill in and return their ballot.

The date for our Annual General Meeting and information day is Wednesday, January 10, 2007 at the Saskatoon Inn. A complete agenda of the various groups who meet during Crop Production Week is available on page 8. The agenda for the SMDC meeting will be completed in October and can be found on our website: [www.saskmustard.com](http://www.saskmustard.com) or on [www.cropweek.com](http://www.cropweek.com). I hope to see many producers and industry people at our meeting and I will introduce the new Board of Directors for 2007.

In closing, I would like to welcome new SMDC Executive Director, Laurie Hayes to the Commission – read more about this on page 2 of this newsletter. ♣

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- **Testing of Mustard Condiment Varieties**
- **Mustard Harvest, Handling & Storage - Effects on Quality**
- **Election Info**
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**Saskatchewan Mustard Development Commission**

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Articles, opinions and comments expressed in this newsletter are not necessarily supported by the SMDC Board. Any inquiries or comments regarding the *Mustard Grower* may be directed to the above Mustard Development Commission address.

#### **The Saskatchewan Mustard Development Commission**

The Saskatchewan Mustard Development Commission (SMDC) was established in 2003 to represent the province's mustard growers. The SMDC vision is "Investing in the future for mustard grower profitability", and the SMDC mission is: "Growing the mustard industry for the benefit of growers through research, communication, and market development programs."

#### **2006 SMDC Board of Directors**

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## New Executive Director at Saskatchewan Mustard Development Commission



The Saskatchewan Mustard Development Commission (SMDC) is now led by newly appointed Executive Director Laurie Hayes.

Hayes has served as the Manager of the Conservation Learning Centre in Prince Albert for the past eight years and prior to that, held various positions in the agriculture industry. She is a graduate of the University of Saskatchewan with a Master of Science and a Bachelor of Science in Agriculture. Hayes originates from the Val Marie area where she was raised on a mixed farm.

"This is an exciting time to be joining the mustard industry with its many possibilities and vibrant future. I look forward to the opportunities and

challenges that this position will offer," says Hayes. "I remain committed to agriculture in Saskatchewan and this allows me to continue to contribute to the industry and remain involved with producers."

Hayes is also the new Executive Director of the Saskatchewan Canola Development Commission (SCDC), and since SCDC has a contract to manage the Saskatchewan Mustard Development Commission, Hayes will take the role of Executive Director for both Commissions.

Kincaid producer and SMDC Chairman Erroll Simington believes Hayes will bring a wealth of experience to the position. "Laurie's diverse background will be very valuable in helping the Commission meet its objectives in the upcoming years. We look forward to having her in a leadership role working with the Board and staff," comments Simington. ♣

## Mustard Marketing Report

By: **Steve Foster, Saskatchewan Wheat Pool**

Since my last report back in early June we have seen an interesting growing season. From extreme heat in southern Saskatchewan to excessive rain in the east and numerous thunder/hail storms taking out some of the mustard crop.

When the growers finally made up their mind what they were going to grow, mustard acres took it on the chin so to speak with only 280,000 acres in Saskatchewan and 40,000 or so in southern Alberta. We are still working with the growers on yield and quality as samples are still coming in. Most of the quality is good but yields are all over the map.

In my estimation, barring no other weather issues, we should see 95,000 MT of production of all mustard types. With last year's carryover stocks (some of which was not good quality) we should have enough product to get through the demand. End use customer

demand is minimal at this time. Our strong Canadian dollar and the continuous increase in ocean freight have made buyers unsettled on their requirements.

At the time of this update, the status of the Eastern European crop is uncertain. Early indications show a poor quality crop. It's too early to tell what, if any, demand will come from that part of the world.

So, as far as prices moving up prior to January, I don't see it happening. Most of the nearby demand is booked. The next few months will be focused on taking delivery on production contracts from growers and getting a better handle on what type of crop we will have to work with. Once we have some of the unanswered questions above resolved, then and only then will we see what, if any, upside there will be in the mustard market. ♣

# Provincial Minor Use of Pesticide Field Research Program

By: **Doug Billett, Manager Production Technology,**  
**Crop Development Branch, Saskatchewan Agriculture and Food**

In 2001 the Agri-Food Innovation Fund (AFIF) entered into a contract with the Provincial Council of ADD Boards (PCAB) to administer \$330,000 for minor use of pesticide research. The contract is overseen by a steering committee consisting of 3 Saskatchewan Agriculture and Food representatives, 2 PCAB representatives and a representative from Agriculture and Agri-Food Canada. Each year the steering committee issues a request for proposals from research institutions to conduct minor use of pesticide field trials that will provide data to meet Saskatchewan's minor use priorities.

This year the steering committee provided funds for a number of field trials for 2006 and 2007. ♣

| CROP                      | PRODUCT                       | TARGET PEST             | TREATMENTS | LOCATIONS  |
|---------------------------|-------------------------------|-------------------------|------------|--|
| Potato 2006-01            | Insecticide screening         | Wireworm                | 6          | • University of Saskatchewan   |
| Lentil 2006-02            | imazethapyr                   | Broad leaf weeds        | 8          | • Crop Development Centre • Scott (WARC)<br>• Indian Head (IHARF)                              |
| Chickpea 2006-03          | imazethapyr                   | Broad leaf weeds        | 8          | • Crop Development Centre • Scott (WARC)<br>• Indian Head (IHARF)                              |
| Chickpea 2006-04          | sulfentrazone                 | Reduced rate            | 7          | • Crop Development Centre • Scott (WARC)<br>• Indian Head (IHARF) • Swift Current (Wheatlands) |
| Chickpea 2006-05          | sulfentrazone (fall)          | Broad leaf weeds        | 12         | • Scott (WARC)   |
| Chickpea 2006-06          | sulfentrazone + isoxaflutole0 | Broad leaf weeds        | 17         | • Crop Development Centre • Scott (WARC)   |
| Coriander/Caraway 2006-07 | azoxystrobin                  | label improvement       | 14         | • University of Saskatchewan   |
| Cumin 2006-08             | Fungicide screening           | disease                 | 7          | • University of Saskatchewan   |
| Alfalfa seed 2006-09      | Herbicide screening           | Canada thistle          | 12         | • Scott (WARC) • Indian Head (IHARF)   |
| Golden millet 2006-10     | Herbicide screening           | Weeds                   | 9          | • Scott (WARC) • Indian Head (IHARF)   |
| Hemp 2006-11              | Herbicide screening           | Weeds                   | 15         | • Crop Development Centre • Scott (WARC)   |
| Pumpkin 2006-12           | Fungicide screening           | sclerotinia             | 11         | • University of Saskatchewan   |
| <b>Mustard 2006-13</b>    | <b>Herbicide screening</b>    | <b>Broad leaf weeds</b> | <b>15</b>  | <b>• Crop Development Centre</b>   |

If you have any questions regarding the AFIF-PCAB Provincial Minor Use program please contact Doug Billett, Provincial Minor Use Coordinator, at 306-787-8061 or [dbillett@agr.gov.sk.ca](mailto:dbillett@agr.gov.sk.ca)

## Mustard Buyer's List

| Mustard Buyers                     | Address                           | City             | Prov.   | Postal Code | Telephone  | More Info  |
|------------------------------------|-----------------------------------|------------------|---------|-------------|--|--|
| Agricom International Inc          | 213-828 Harbourside Dr            | North Vancouver  | BC      | V7P 3R9     | 604-983-6922   |  |
| Besco Grain Ltd                    | 30 Railway Ave<br>PO Box 166      | Brunkild         | MB      | R0G 0E0     | 204-736-3570   |  |
| Demeter Agro                       | 2802 5th Ave N                    | Lethbridge       | AB      | T1H 0P1     | 800-661-1450   | <a href="mailto:demeter@agricoreunited.com">demeter@agricoreunited.com</a> |
| Diefenbaker Seed Processors        | PO Box 69                         | Elbow            | SK      | S0H 1J0     | 306-644-4704   |  |
| Finora Inc                         | 8427 160th St                     | Surrey           | BC      | V3S 3T9     | 604-597-5060   | <a href="mailto:finora@istar.ca">finora@istar.ca</a>                       |
| Grain Millers Canada Corp          | 1 Grain Millers Dr<br>PO Box 5040 | Yorkton          | SK      | S3N 3Z4     | 306-783-2931   |  |
| Lakeside Pulse & Special Crops Ltd | 665-167 Lombard Ave               | Winnipeg         | MB      | R3B 0V3     | 204-255-5550   |  |
| Montana Specialty Mills LLC        | 525 3rd St NW                     | Great Falls      | MT, USA | 59403       | 406-761-2338   |  |
| Parkland Pulse Grain Co            | PO Box 848                        | North Battleford | SK      | S9A 2Z3     | 306-445-4199   |  |
| Paterson Global Foods              | 22nd Floor 333 Main St            | Winnipeg         | MB      | R3X 4E2     | 204-956-2090   |  |
| S S Johnson Seeds Ltd              | PO Box 3000                       | Arborg           | MB      | R0C 0A0     | 204-376-5228   |  |
| Saskatchewan Wheat Pool Inc        | 2625 Victoria Ave                 | Regina           | SK      | S4T 7T9     | 306-569-4200   |  |
| Saskcan Pulse Trading Inc          | PO Box 30029                      | Regina           | SK      | S4N 7K9     | 306-525-4490   | <a href="mailto:trade@saskcan.com">trade@saskcan.com</a>                   |
| Shamrock Seeds Ltd                 | 1502-17th St W                    | Saskatoon        | SK      | S7M 4A4     | 306-249-4151   |  |
| Walker Seeds Ltd                   | PO Box 2890                       | Tisdale          | SK      | S0E 1T0     | 306-873-3777   | <a href="mailto:walker.seeds@sasktel.net">walker.seeds@sasktel.net</a>     |
| Western Grain Trade Ltd            | 9-2155 Airport Dr                 | Saskatoon        | SK      | S7L 6M5     | 306-657-3455 (Saskatoon);<br>306-445-4022 (North Battleford) | <a href="mailto:info@westerngrain.com">info@westerngrain.com</a>           |

# Testing of Condiment Mustard Varieties for Production in Canada

Contributed by: **Agriculture and Agri-Food Canada**

Each year individuals, organizations, companies and institutions involved in the development, production, processing and marketing of varieties of grain crops in western Canada, come together for discussions at an Annual Meeting. This group discusses which new breeding lines will be recommended for registration and production in Canada and provides this recommendation to the Variety Registration Office (VRO) of the Plant Products Division, Canadian Food Inspection Agency (CFIA). This process has been going on for many years, with meetings organized on a rotational basis between the provinces of Manitoba, Saskatchewan and Alberta. Over the years, the face of Canadian agriculture has changed dramatically and this collective group has evolved its testing procedures and organizational structure in response to these and other changes.

The first official testing of condiment mustard varieties or breeding lines adapted for western Canada began in approximately 1963, using the procedures of the Expert Committee on Grains. Forty-three years later, in 2006, the testing, evaluation and exchange of information relevant to the development of improved cultivars of condiment mustard still continues using procedures approved by the members of the Prairie Recommending Committee for Oilseeds. The table on the next page summarizes the data generated from seven years of testing varieties of the three types of condiment mustard produced in western Canada.

Yield is measured on seed harvested from field plots (approximately 80 ft<sup>2</sup> or 7.5 m<sup>2</sup> area) with each entry replicated four times to improve the accuracy of the observation on the breeding lines and varieties. Although the seeding rate is similar to that of a producer, the yield is determined on the seed harvested from maintained research plots. The actual kg/ha determination does not always represent the equivalent yield achieved in a producer's field. Therefore, the yield relative to the standard or check cultivar is presented.

Seed size is identified as an issue of concern during the milling of condiment mustard and is also important to producers in the cleaning of seed and seedling establishment. New methods are being developed to assess the uniformity of seed size, but for the summary table, seed weight of 1000 seeds is reported.

Fixed oil or oil content of the seed is a criteria for assessment of a condiment mustard breeding line or variety. *Sinapis alba*, or yellow mustard, is a low oil content crop compared to the *Brassica juncea* species producing the brown or oriental types of mustard. The mustard industry prefers this relatively low oil content of both species of condiment mustard for processing. The composition of the oil is kept at current levels of erucic acid and the other long-chain fatty acids, to give the desired quality of the mustard product (R.K. Downey and G. Rakow, Harvest of Gold).

Protein content is included in the evaluation of mustard lines and the data reflects the inverse relationship between protein oil and oil content. Protein content of the seed becomes relevant for the purposes of processing when the seed is used as an ingredient in prepared meats.

The hot principle defines the condiment mustard product. When crushed seed comes in contact with moisture, the glucosinolate hydrolyses to produce the "heat" sensation in the mouth (J.S. Hemingway, The Mustard Species: Condiment and Food Ingredient Use and Potential as Oilseed Crops). While there is genetic variation for glucosinolate content, the hot, arid, climate of the Canadian prairies enables producers to grow mustard seed with high levels of glucosinolates. The hot principle for the yellow mustard, *S. alba* is derived from a different glucosinolate from that of the *B. juncea* sources of mustard types. *Sinapis alba* contains predominantly 4-hydroxybenzyl glucosinolate (sinalbin) while *Brassica juncea* types of condiment mustard contain predominantly 2-propenyl (allyl) glucosinolate (sinigrin) which hydrolyses to produce a volatile oil with strong pungency.

Mucilage content was recently included in the evaluation of mustard varieties as an important (processing and quality of product) characteristic for certain preparations of mustard. In addition to the emulsifying and suspension properties of mucilage, it is reported that mucilage may also give mustard its superior drought resistance (Balke and Diosday, Food Research International, 33(5) 347-56, 2000).

Seed colour is measured to assess degree of yellowness or brownness, of the seed coat of yellow or oriental mustard, and brown mustard respectively. Using reflectance-based methodology, a higher the (negative) value indicates brighter yellow of the seed coat while the brown seed colour imparts values closer to 0 or 1.

Distinct green seed and chlorophyll content are also assessed during the evaluation of condiment mustard. The same arid prairie climate that may grow beautiful coloured seed with high glucosinolate content, does not always give producers dry conditions at harvest time and early frosts may "fix" the chlorophyll content. This results in less-than-desirable quality of mustard seed for the processors (taste, color, oil and protein content) but it also causes economic losses for the producers through dockage. Genetic variation exists for these two traits and developers of germplasm select against elevated levels of green seed.

Current varieties of yellow mustard are not significantly different from each other for the traits of height and maturity, however, there is slight variation among the varieties of *Brassica juncea*.

When reading the data in the summary table, statistical comparisons are made within the species of condiment mustard. Thus, comparisons are made between *S. alba* or yellow mustard entries and comparisons are made between *B. juncea*, oriental and brown mustard entries. S.E.D. is the standard error of the difference between the average (mean) values for the traits evaluated and is used to calculate the F-value to determine the level of differences between the lines tested. The notation "ns" indicates that these differences are not statistically significant. Station-years is a term used to indicate the number of locations where the testing was done (one field test site in one year, at one location equals one station-year).

**Table: Seven Year Performance 1999-2005 Condiment Mustard**

|                      | Yield   | Seed Weight       | Fixed Oil              | Protein      | Hot Principle <sup>2</sup> | Mucilage              | Seed Colour | Distinct Green | Chlorophyll         | Height  | Maturity |
|----------------------|---------|-------------------|------------------------|--------------|----------------------------|-----------------------|-------------|----------------|---------------------|---------|----------|
|                      | kg/ha   | % ch <sup>1</sup> | g 1000 <sup>-1</sup> s | % whole seed | GSL                        | cS*ml g <sup>-1</sup> | WIE313      | %              | mg kg <sup>-1</sup> | cm      | Days     |
| AC Pennant chk       | 1880    | 100.0             | 5.802                  | 29.58        | 35.05                      | 158.8                 | 33.8        | -32.87         | 0.56                | 1.71    | 93       |
| Ace                  | 1860    | 99.2              | 5.640‡                 | 29.20†       | 35.74‡                     | 159.0                 | 38.8‡       | -34.08‡        | 0.65                | 2.23    | 99       |
| AC Base              | 1880    | 100.2             | 5.998‡                 | 29.37†       | 35.10                      | 157.0                 | 31.7‡       | -31.94‡        | 0.48                | 1.91    | 97       |
| Tilney               | 1780    | 94.9              | 5.874                  | 23.29‡       | 35.69‡                     | 152.0‡                | 37.8‡       | -33.33‡        | 0.52                | 2.53‡   | 94       |
| Viscount             | 1760    | 93.9              | 5.335‡                 | 29.22‡       | 35.90‡                     | 157.2                 | 41.0‡       | -33.58‡        | 0.49                | 1.90    | 99       |
| Andante              | 1880    | 100.2             | 6.195‡                 | 28.35‡       | 36.07‡                     | 157.7                 | 41.6‡       | -31.85‡        | 0.69                | 2.54‡   | 98       |
| S.E.D.               | 190     | -                 | 0.039                  | 0.09         | 0.11                       | 1.6                   | 0.6         | 0.15           | 0.11                | 0.27    | 3        |
| F-value              | 0.5 ns  | -                 | 113.6                  | 44.9         | 26.7                       | 4.8                   | 74.1        | 70.6           | 1.2 ns              | 3.4     | 1.7 ns   |
| # station yrs        | 66      | -                 | 50                     | 50           | 50                         | 49                    | 49          | 50             | 50                  | 48      | 68       |
| N (#means)           | 396     | -                 | 300                    | 300          | 300                        | 294                   | 294         | 300            | 300                 | 289     | 408      |
| Cutlass chk          | 2270    | 100.0             | 2.738                  | 41.71        | 29.35                      | 10.65                 | -           | -37.6          | 0.65                | 2.7     | 111      |
| Forge                | 2220    | 97.8              | 2.510‡                 | 39.14‡       | 30.17‡                     | 11.37‡                | -           | -33.2‡         | 0.67                | 3.2     | 122‡     |
| AC Vulcan            | 2220    | 97.8              | 2.803†                 | 41.23‡       | 29.73‡                     | 11.67‡                | -           | -38.1          | 0.72                | 3.0     | 113      |
| Duchess              | 2110    | 102.5             | 2.715                  | 38.77        | 28.86                      | 8.90                  | -           | -1.3           | 0.78                | 5.9     | 111      |
| Cm.Brown chk         | 2060    | 100.0             | 2.635‡                 | 38.69        | 28.92                      | 8.81                  | -           | -1.2           | 0.74                | 5.2     | 109      |
| J97-149 <sup>3</sup> | 2150    | 104.3             | 2.975‡                 | 37.33‡       | 29.84‡                     | 9.40‡                 | -           | -1.0           | 0.59                | 4.9     | 114†     |
| S.E.D.               | 120     | -                 | 0.025                  | 0.12         | 0.13                       | 0.10                  | -           | 0.5            | 0.09                | 0.4     | 2        |
| F-value              | 0.87 ns | -                 | 76.3                   | 394.8        | 33.51                      | 347.23                |             | 2884.6         | 1.10 ns             | 21.8 ns | 7.2      |
| # station yrs        | 63      | -                 | 49                     | 49           | 49                         | 49                    |             | 49             | 49                  | 47      | 69       |
| N (#means)           | 378     | -                 | 294                    | 294          | 294                        | 294                   | -           | 294            | 294                 | 276     | 402      |

1. AC Pennant check for yellow mustard, Cutlass check for oriental mustard, Commercial brown check for brown mustard.
2. Hydroxybenzyl glucosinolate for yellow mustard, Volatile Oil – allyl glucosinolate for oriental and brown.
3. J97-149 was registered by the Variety Registration Office of the Canadian Food Inspection Agency under the name, "Centennial Brown" on March 14, 2006.

Means Estimate of difference relative to appropriate check: ‡ highly significant  $Pr > t = < 0.01$  † significant  $Pr > t = < 0.05$ , ns = not significant F-value

Prepared for the Co-operative Mustard Test, 2005 Annual Report for the Oilseeds Subcommittee of the Prairie Registration and Recommending Committee for Grains.



## Mustard Harvest, Handling and Storage: The Effects on Quality

As a mustard producer, the care you take in the harvest, handling and storage of your crop will seriously affect quality. Quality, in many cases, is as important as yield when considering net return. Mustard processors and buyers have strict quality requirements for several factors, many of which you can control to some degree.

### Mustard quality

Canadian Grain Commission has established standards for mustard quality. In order to produce a high quality crop, mustard producers need to understand the factors that can lead to downgrading a mustard crop. The following tables outline these factors and their associated tolerance levels.

**Table 1 Domestic yellow mustard seed: primary and export grade determinants**

| Grade Name   | Standard of Quality  |             |                        |                                    |           | Damage (%)        |                  |                          |        |
|--------------|--|-------------|------------------------|------------------------------------|-----------|-------------------|------------------|--------------------------|--------|
|              | Degree of Soundness  |             |                        |                                    |           | Other Classes (%) | Distinctly Green | Heated                   | Total  |
| No. 1 Canada | Reasonably well-matured, sweet, good natural colour  |             |                        |                                    |           | 0.5               | 1.5              | 0.1                      | 1.5    |
| No. 2 Canada | Fairly well-matured, sweet, reasonably natural colour  |             |                        |                                    |           | 2.0               | 1.5              | 0.2                      | 3.0    |
| No. 3 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |             |                        |                                    |           | 5.0               | 3.5              | 0.5                      | 5.0    |
| No. 4 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |             |                        |                                    |           | 10.0              | 3.5              | 1.0                      | 10.0   |
| Grade Name   | Conspicuous inseparable seeds  |             |                        |                                    |           | Other (%)         |                  |                          |        |
|              | Distinctly detrimental (%)   |             |                        |                                    | Total (%) |                   |                  |                          |        |
|              | Cow<br>cockle  | Sclerotinia | Wild mustard<br>Canola | Total<br>distinctly<br>detrimental |           | Ergot             | Excreta*         | Soft<br>earth<br>pellets | Stones |
|              | No. 1 Canada   | 0.1         | 0.1                    | 0.1                                |           | 0.1               | 0.3              | 0.05                     | 1K     |
| No. 2 Canada | 0.2  | 0.2         | 0.2                    | 0.2                                | 0.5       | 0.05              | 1K               | 0.2                      | 0.05   |
| No. 3 Canada | 0.3  | 0.3         | 0.3                    | 0.3                                | 0.7       | 0.05              | 1K               | 0.3                      | 0.05   |
| No. 4 Canada | 1.0  | 1.0         | 1.0                    | 1.0                                | 3.0       | 0.05              | 0.005            | 1.0                      | 0.10   |

\* Number of kernel-sized pieces in 500 g

Source: Canadian Grain Commission

**Table 2 Domestic brown mustard seed: primary and export grade determinants**

| Grade Name   | Standard of Quality  |                               |             |                     |                              | Damage (%)       |           |       |      |      |
|--------------|--|-------------------------------|-------------|---------------------|------------------------------|------------------|-----------|-------|------|------|
|              | Degree of Soundness  |                               |             |                     | Other Classes (%)            | Distinctly Green | Heated    | Total |      |      |
| No. 1 Canada | Reasonably well-matured, sweet, good natural colour  |                               |             |                     | 0.5                          | 1.5              | 0.1       | 1.5   |      |      |
| No. 2 Canada | Fairly well-matured, sweet, reasonably natural colour  |                               |             |                     | 2.0                          | 2.0              | 0.2       | 3.0   |      |      |
| No. 3 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |                               |             |                     | 5.0                          | 3.5              | 0.5       | 5.0   |      |      |
| No. 4 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |                               |             |                     | 10.0                         | 3.5              | 1.0       | 10.0  |      |      |
| Grade Name   | Inconspicuous admixture (%)  | Conspicuous inseparable seeds |             |                     |                              |                  | Other (%) |       |      |      |
|              |  | Distinctly detrimental (%)    |             |                     |                              | Total (%)        |           |       |      |      |
|              |  | Cow cockle                    | Sclerotinia | Wild mustard canola | Total distinctly detrimental |                  |           |       |      |      |
|              |  |                               |             |                     | Soft earth pellets           |                  | Stones    |       |      |      |
| No. 1 Canada | 1.0  | 0.1                           | 0.1         | 0.1                 | 0.1                          | 0.3              | 0.05      | 1K    | 0.01 | 0.05 |
| No. 2 Canada | 1.0  | 0.2                           | 0.2         | 0.2                 | 0.2                          | 0.5              | 0.05      | 1K    | 0.2  | 0.05 |
| No. 3 Canada | 1.0  | 0.3                           | 0.3         | 0.3                 | 0.3                          | 0.7              | 0.05      | 1K    | 0.3  | 0.05 |
| No. 4 Canada | 1.0  | 1.0                           | 1.0         | 1.0                 | 1.0                          | 3.0              | 0.05      | 0.005 | 1.0  | 0.10 |

\* Number of kernel-sized pieces in 500 g

Source: Canadian Grain Commission

**Table 3 Domestic oriental mustard seed: primary and export grade determinants**

| Grade Name   | Standard of Quality  |                               |             |                     |                              | Damage (%)        |                  |          |                    |        |
|--------------|--|-------------------------------|-------------|---------------------|------------------------------|-------------------|------------------|----------|--------------------|--------|
|              | Degree of Soundness  |                               |             |                     |                              | Other Classes (%) | Distinctly Green | Heated   | Total              |        |
| No. 1 Canada | Reasonably well-matured, sweet, good natural colour  |                               |             |                     |                              | 0.5               | 1.5              | 0.1      | 1.5                |        |
| No. 2 Canada | Fairly well-matured, sweet, reasonably natural colour  |                               |             |                     |                              | 2.0               | 1.5              | 0.2      | 3.0                |        |
| No. 3 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |                               |             |                     |                              | 5.0               | 3.5              | 0.5      | 5.0                |        |
| No. 4 Canada | May have the natural odour associated with low quality seed, not any odour that would indicate serious deterioration |                               |             |                     |                              | 10.0              | 3.5              | 1.0      | 10.0               |        |
| Grade Name   | Inconspicuous admixture (%)  | Conspicuous inseparable seeds |             |                     |                              |                   | Other (%)        |          |                    |        |
|              |  | Distinctly detrimental (%)    |             |                     |                              | Total (%)         |                  |          |                    |        |
|              |  | Cow cockle                    | Sclerotinia | Wild mustard canola | Total distinctly detrimental |                   | Ergot            | Excreta* | Soft earth pellets | Stones |
| No. 1 Canada | 0.5  | 0.1                           | 0.1         | 0.1                 | 0.1                          | 0.3               | 0.05             | 1K       | 0.01               | 0.05   |
| No. 2 Canada | 1.0  | 0.2                           | 0.2         | 0.2                 | 0.2                          | 0.5               | 0.05             | 1K       | 0.2                | 0.05   |
| No. 3 Canada | 1.0  | 0.3                           | 0.3         | 0.3                 | 0.3                          | 0.7               | 0.05             | 1K       | 0.3                | 0.05   |
| No. 4 Canada | 1.0  | 1.0                           | 1.0         | 1.0                 | 1.0                          | 3.0               | 0.05             | 0.005    | 1.0                | 0.10   |

\* Number of kernel-sized pieces in 500 g

Source: Canadian Grain Commission

## Notes on specific quality factors

### Green seed

All immature mustard seed contains the green pigment, chlorophyll, which can impart an off colour on finished products. With the right environmental conditions, chlorophyll will dissipate before harvest, but not after. Three enzymes remove chlorophyll from the seed as part of the natural maturing process. These enzymes are active only if the moisture level of the seed is above 20 per cent, and the ambient temperature is above 5°C. Frost prior to harvest or severe heat after swathing can both destroy the enzymes and result in the green colour being “locked” in the seed. Green seed will not diminish in the bin; in order for it to reduce, seed must be in either the window or the standing plant.

### Heated seed

Excess moisture and/or high temperature in stored mustard seed may lead to heating. Mustard must be stored with lower moisture content than cereal grains because of mustard's high oil content. The high oil content means that any moisture in the seed is concentrated in the meal fraction. As an overall percentage, the moisture content can appear low but may cause problems because it is concentrated in only half of the seed. Mustard intended for long-term storage should be kept at less than nine per cent moisture and less than 18°C. This moisture and temperature regimen inhibits mould growth, insect feeding and general seed deterioration. After binning, mustard will go through a sweating period caused by respiration. Mustard seed is alive and, like all living organisms, it respire or takes in oxygen and releases carbon dioxide. This process generates heat and moisture, and generally elevates the moisture content of the newly binned mustard seed by one per cent.

# SMDC Election

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Nominations are being accepted for two directors of the Saskatchewan Mustard Development Commission.

The SMDC was constituted by the Saskatchewan Agri-Food Act on October 3, 2003. The SMDC board consists of six elected directors who, as representatives of all Saskatchewan mustard producers, direct the operations and programs of the SMDC. Directors are not paid a salary, however, they do receive a per diem for the actual days spent on SMDC business. Expenses are also reimbursed.

Each director is expected to attend regular meetings of the board, (approximately 4 per year) and contribute time to the SMDC. Directors are also called upon to represent the SMDC at meetings and major conferences that impact the mustard industry. The total time commitment required of a director is approximately 15-20 days per year.

## Registered Producers

To stand for office, nominate or vote, the person must be a registered producer with the SMDC. A registered producer is any producer who has had a Saskatchewan mustard check-off deducted since August 1, 2004. All producers selling Saskatchewan grown mustard are automatically registered with the SMDC.

A registered producer who is a corporation, partnership, association, society, or any individual carrying on business under a corporate name, trade name, farm name or other designation, is entitled to vote and to hold office through a designed representative who has been appointed in writing.

## Nominations

Any registered producer may be nominated for election as a director of the SMDC. Every nomination must be:

- sent to the Returning Officer as specified on the nomination form by noon October 27, 2006
- signed by 5 or more registered producers, and,
- accompanied by the written consent of the registered producer being nominated for the position of director.
- a registered producer is not eligible to be nominated as a director if he or she has requested or received a refund of the check-off since August 1, 2004.

Nomination forms are available from the SMDC office (Phone: 975-6629, Fax: 975-0136). It is important for each nominee to fill in the biographical information. This information will be enclosed with the ballot at the time of election. Producers signing the nomination forms must be registered with the SMDC.

## Election

An election (if required) will be by mail ballot with election results announced at the Annual General Meeting in Saskatoon, SK, January 10, 2007.

## Important Dates to Remember

**October 27, 2006 • Nominations close 12:00 noon**

**November 16, 2006 • Ballots will be mailed to registered producers**

**December 8, 2006 • Last day for ballots to be received**

**January 10, 2007 • Annual Meeting**

# Saskatchewan Crop Production Week, January 8 – 13, 2007

## Plan now to attend!

Location: Saskatoon Inn – Saskatoon, Saskatchewan

All farmers and agri-business welcome

## January 8 – 13

|                       |  |
|-----------------------|--|
| Monday, January 8     | Saskatchewan Flax Development Commission – <i>Saskatoon Inn</i><br>Saskatchewan Pulse Growers – <i>Saskatoon Inn/Prairieland Park</i>  |
| Tuesday, January 9    | Saskatchewan Pulse Growers – <i>Saskatoon Inn/Prairieland Park</i><br>Saskatchewan Oat Development Commission – <i>Saskatoon Inn</i><br>Saskatchewan Seed Growers Association – <i>Saskatoon Inn</i>   |
| Wednesday, January 10 | Saskatchewan Seed Growers Association – <i>Saskatoon Inn</i><br><b>Saskatchewan Mustard Development Commission – <i>Saskatoon Inn</i></b><br>Canaryseed Association of Canada – <i>Saskatoon Inn</i><br>Canola Days: Saskatchewan Canola Development Commission – <i>Saskatoon Inn</i> |

## Special Session: **Producer Investment in Biofuel Production** **7:30 pm – *Saskatoon Inn***

|                      |   |
|----------------------|---|
| Thursday, January 11 | Canola Days: Saskatchewan Canola Growers Association – <i>Saskatoon Inn</i><br>Saskatchewan Herb & Spice Association – <i>Heritage Inn</i>                              |
| Friday, January 12   | Saskatchewan Fruit Growers Association – <i>Heritage Inn</i><br>Canadian Wheat Board – <i>Saskatoon Inn</i><br>Saskatchewan Ag Grads Association – <i>Saskatoon Inn</i> |
| Saturday, January 13 | Saskatchewan Ag Grads Association – <i>Saskatoon Inn</i>  |

For more information: check out the website at [www.cropweek.com](http://www.cropweek.com)

