

Pesticide Minor Use Program – the Process and Potential for Pesticide Registrations in Mustard

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Minor Use Pesticide

- **Definition:**
 - a pest control product for which the anticipated market return to the company is not sufficient to justify the costs to develop, register and market the product.
 - May be a minor crop or minor pest in major crop.



Pesticide Minor Use Registration

- URMULE
 - User Requested Minor Use Label Expansion
 - expansion of the label of a pesticide that is already registered in Canada on a major crop or crops.
 - eg. Muster herbicide in sunflower

Pesticide Minor Use Registration

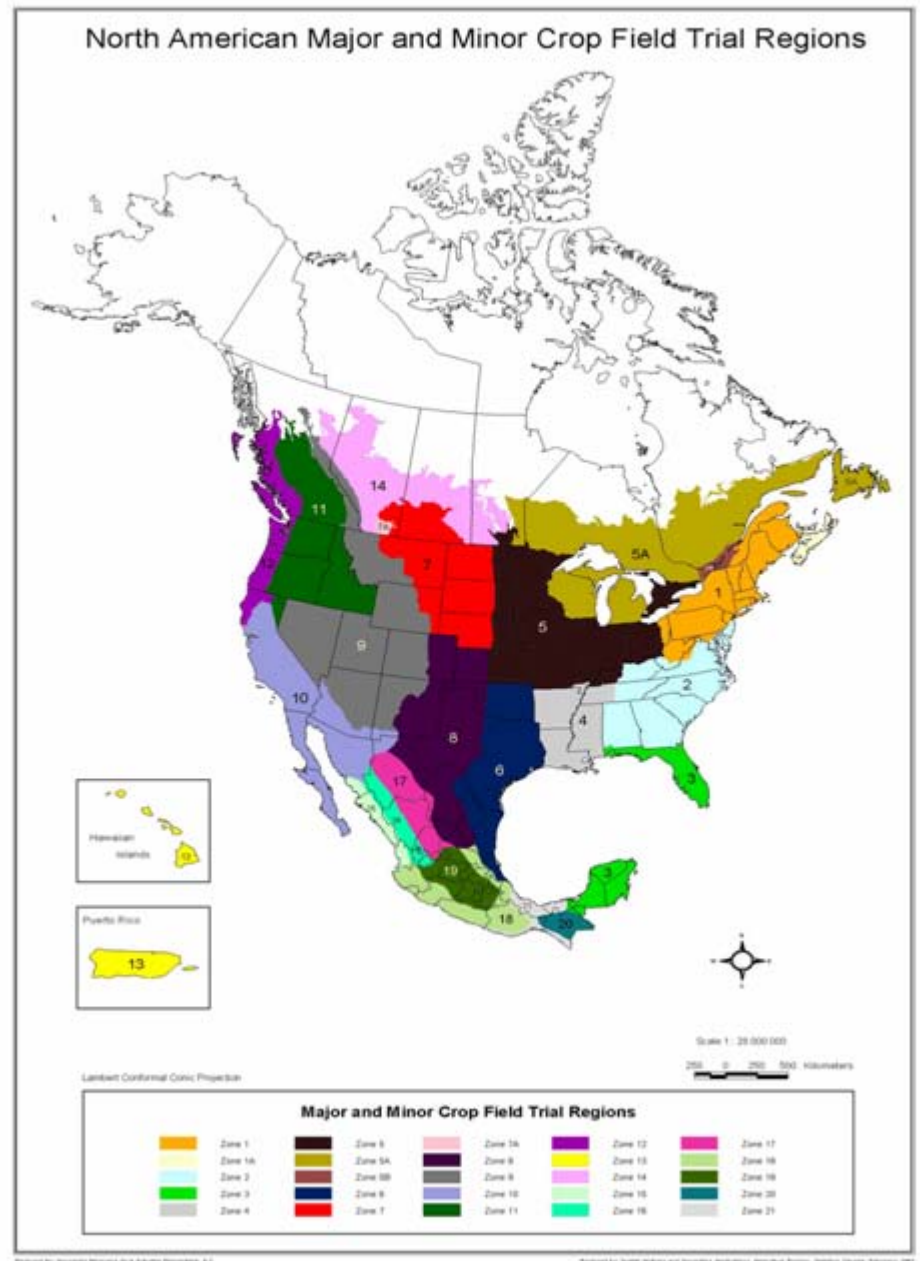
- URMUR
 - User Requested Minor Use Registration
 - allows for the registration of a pesticide that is not registered in Canada but is registered in an OECD country.
 - » Eg. Sulfentrazone herbicide in chickpea

Minor Use Pesticide Program

- Operational since 2003
- Modeled after United States IR-4 program
- Harmonization with US EPA
- Scott Research Farm is study site for Prairies
 - Data required
 - Efficacy data
 - Crop Tolerance Data
 - Crop Residue Data (Good Laboratory Practices)

Innovative and Sustainable P
 La Lutte a

North American Crop Zones

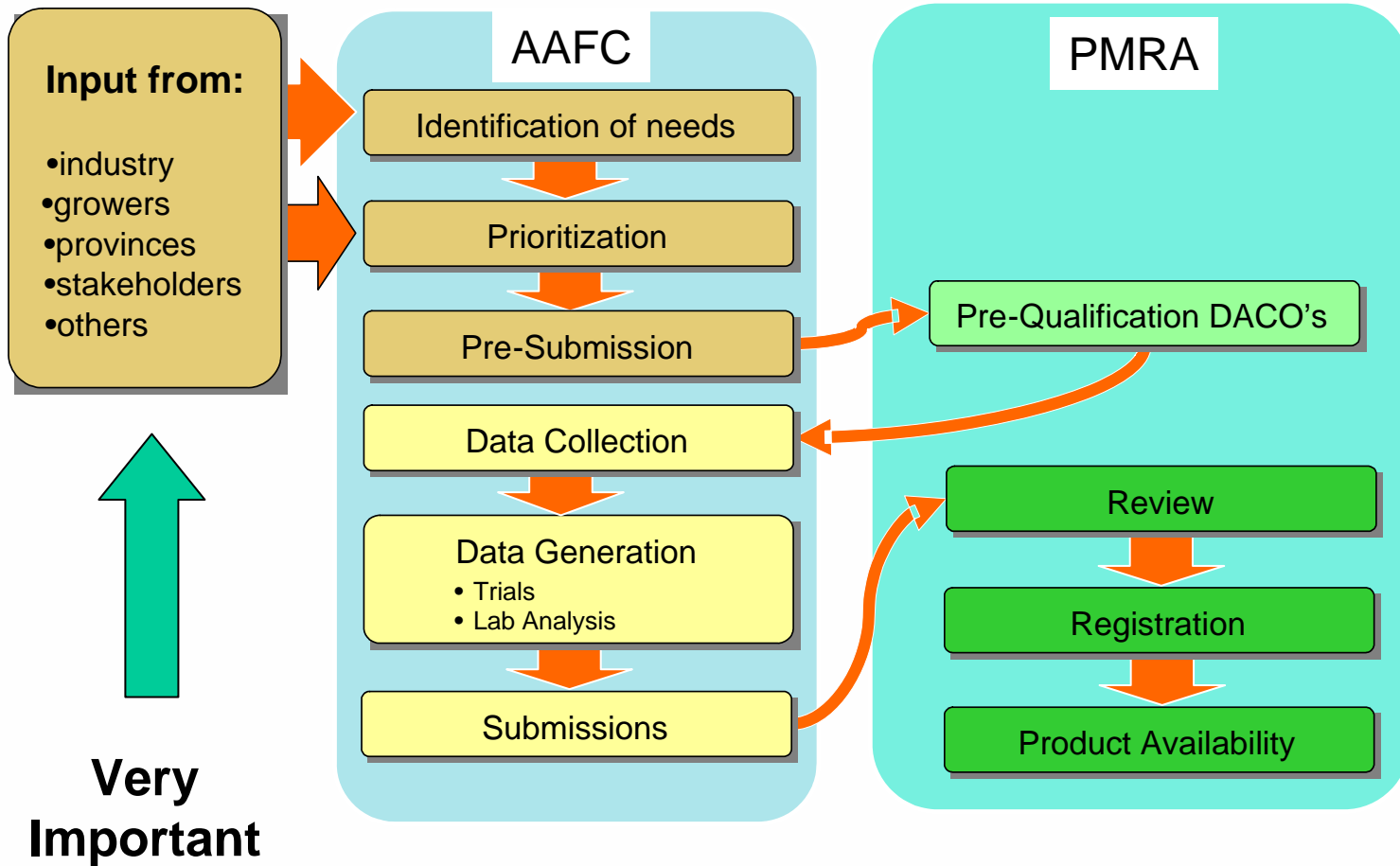


Ten AAFC Data Generating Sites

1. Agassiz (BC)
2. Summerland (BC)
3. Scott (SK)
4. Harrow (Greenhouse) (ON)
5. Harrow (Field Crops) (ON)
6. Delhi (ON)
7. Vineland (ON)
8. St. Jean (QC)
9. Bouctouche (NB)
10. Kentville (NS)

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Minor Use Priority Setting

- Annual meeting held in Ottawa in March
- Attended by Provincial Minor Use Coordinators, commodity groups, producer groups, and industry
- 10 weed, 10 insect, 10 disease, 5 regional
- 2007 meeting will set priorities for 2008

AFIF-PCAB Provincial Minor Use Program - Saskatchewan

- Funds are allocated by a Steering Committee of 2 PCAB members, 1 PFRA/AAFC and 3 SAFRR members
- Will not fund minor use projects that are designated a national priority under the Federal Minor Use Initiative
- Goal: obtain minor use registrations for Sask. Producers that have not been accepted as a National Priority

Pesticide Minor Use Program at Scott

What have we worked on?

- Annual crops
 - Chickpea, bean, sunflower, lentil, flax, dill, caraway, buckwheat, sweet corn, sugar beet, coriander, caraway, lupin, fababean, cumin, mustard, hemp, potato and canaryseed.

- Perennial crops
 - Alfalfa, red clover for seed
 - Alfalfa – weed, disease, and insect control
 - Red clover – weed control (Pursuit)
 - Grasses for seed
 - Crested WG, Intermediate WG, Slender WG Smooth BG, Meadow BG, Tall Fescue, Timothy, Creeping Red Fescue, Perennial Ryegrass.

Minor Use Pesticide Program Output

- Nationally - 90 new pesticide uses, most in past year.
- Prairies – 16 new registrations on 38 different crop types
 - 17 others:
 - 5 are in submission phase
 - 4 are in the analytical phase
 - 4 are in the reporting

GLYPHOSATE PRE-HARVEST IN MUSTARD – Minor Use Priority 2005

- Field work has been conducted
- Project is now in the Analytical phase.
Submission to follow.

Herbicide Screening Project – Scott and Saskatoon 2006

– Yellow mustard

- Muster, Lontrel, Accord, and Sulfentrazone alone and in combination.
- Lontrel rates were low – looking at wild buckwheat control

– Oriental mustard

- Lontrel, Accord, and Sulfentrazone alone and in combination. Also included Muster in some combinations.

- Funding provided by Saskatchewan Mustard Development Commission and Provincial Minor Use Program

What is sulfentrazone?

- Trade name in US – Spartan
- Registered on tobacco and sunflower in United States
- Section 18 registration in North Dakota for control of wild buckwheat in chickpea and dry pea.
- Section 18 registration in North Dakota for control of kochia in flax.
- GROUP 14 –
 - Protoporphyrinogen Oxidase (PPO) Inhibitor
 - Enzyme is important in the production of chlorophyll

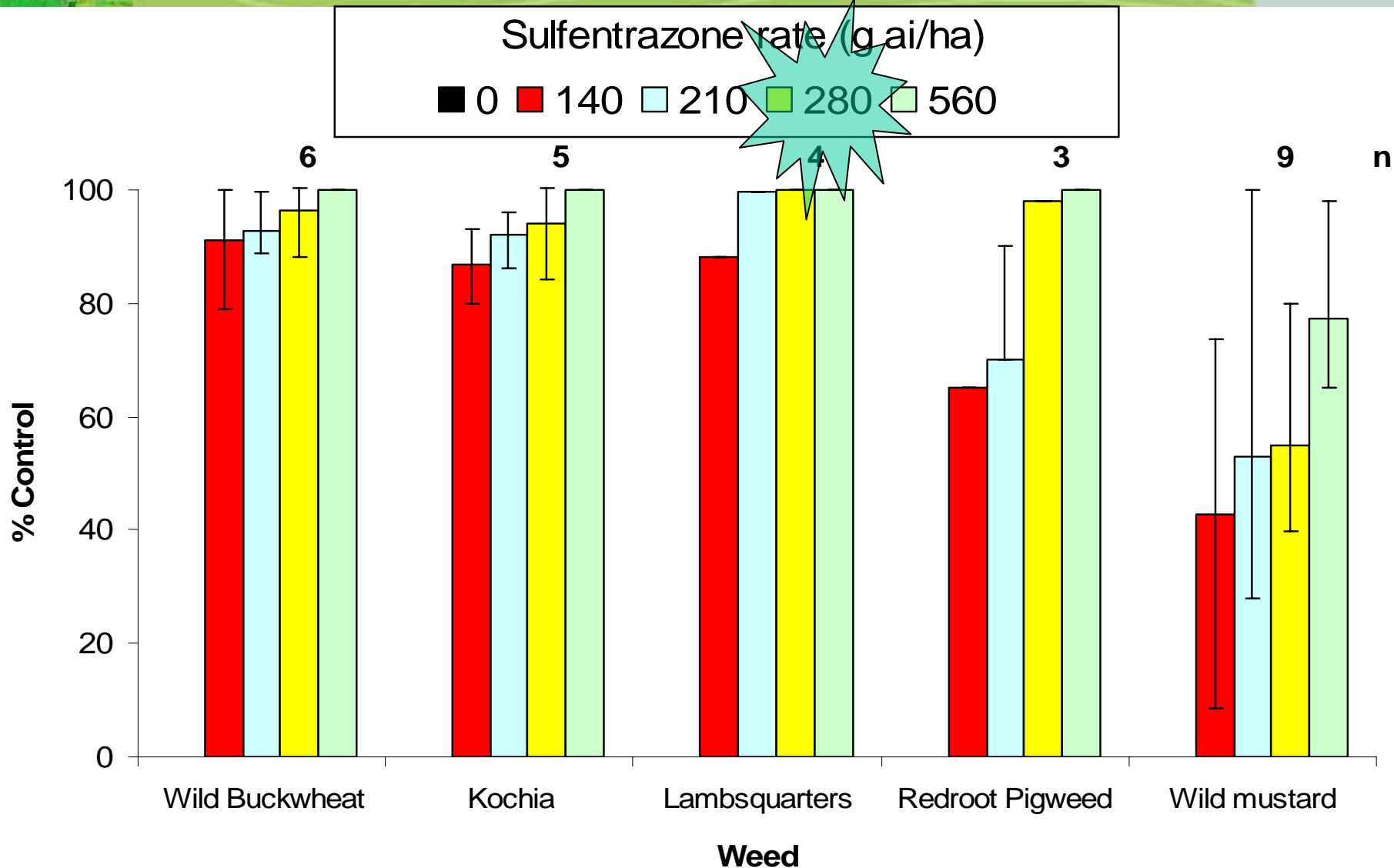
PPO inhibitors

- **Peroxidation of lipids in cell membrane**
 - Get cell leakage
- **Therefore, first symptoms are water soaked lesions followed by necrosis of these lesions**



Sulfentrazone

- **Soil applied – can be tank-mixed with glyphosate at pre-seed or pre-emergence;**
- **Screened for tolerance in chickpea, lentil, dry bean, lupin, and fababean. Also sunflower, flax, and alfalfa seed.**



Effect of sulfentrazone rate on control of broadleaf weeds in chickpea. Error bars represent the range of control values. n=number of site-years of data collection from 2002-2005

Preliminary Results

- Scott received hail the long weekend in August – no yield data; however, visual tolerance data was collected.
- Saskatoon was able to collect both tolerance and yield data.

Preliminary Results – Yellow Mustard

– Lontrel

- Acceptable injury ratings at both sites and no yield reduction at Saskatoon;
- 2007 – investigate Canada thistle rate

– Muster

- Unacceptable injury ratings at Saskatoon and 13% yield reduction at 2X rate.
- Investigate later application? Later than 5-leaf stage?

– Accord

- Acceptable injury and no yield reduction
- However, only controls green foxtail and cleavers. Need to investigate if it provides some synergy of weed control for other products.

Preliminary Results - Saskatoon

- Yellow Mustard

- Sulfentrazone

- Highest rate reduced plant stand at Scott
 - At Saskatoon, acceptable injury ratings and no yield reduction
 - Would suppress, perhaps control kochia and wild buckwheat at rates tested
 - Investigating synergism with trifluralin or ethafluralin for kochia and wild buckwheat control.

Preliminary Results – Oriental Mustard - Saskatoon

– Lontrel

- Unacceptable injury at Saskatoon and 40% yield reduction at highest rate tested;
- Will not pursue further work with this product on Oriental mustard
- Muster / Lontrel tank-mix unacceptable as well.

– Accord

- Acceptable injury and no yield reduction

– Sulfentrazone

- Scott – unacceptable injury at highest rate;
- Saskatoon - Acceptable injury and no yield reduction
- Investigate time of application. Pre-seed may be less injurious than post-seed.

Future

- Will continue to screen herbicides
 - Don't expect miracles
- Important for Sask Mustard Growers to communicate minor use priorities to Provincial Minor Use Coordinator.

ACKNOWLEDGEMENTS

PESTICIDE RISK REDUCTION PROGRAM

SASKATCHEWAN PROVINCIAL MINOR USE PROGRAM

SASKATCHEWAN PULSE GROWERS

MARK GOODWIN, PULSE CANADA

DOUG BILLETT AND RAY MCVICAR, SAF



Pest Management Centre
Le Centre de la lutte antiparasitaire

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The banner features a green background with a subtle grid pattern. On the left, there is a vertical strip with a photograph of a field. On the right, there is a photograph of a striped beetle. At the bottom left, there is a photograph of green apples on a branch. The text is centered in a dark green font.



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