Potash as a Molluscicide

PNWER Saskatoon
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Outline

- Mussels Cost to Alberta from Mussels
- Why Potash?
- Registration Discussion
- Next steps & Questions
Photos make for better presentations.
Cost of doing nothing

GENERALISED INVASION CURVE SHOWING ACTIONS APPROPRIATE TO EACH STAGE

Australia Agriculture Victoria: Invasive Plants and Animals Policy Framework
What is at stake for Alberta?

• Alberta is the irrigation capital of Canada.
• About 704,000 ha of land is currently irrigated within the province, and this represents almost 70% of Canada’s total irrigation area.
• About 82% of Alberta’s irrigated area is in the 13 irrigation districts
Early Detection, Rapid Response

- Lead by the Alberta Support and Emergency Response Team (ASERT)
- Verify Reported Introduction
- Make Initial Notifications
- Activate a Response Management System
- Quarantine and Pathway Management
- Establish External Communications System
- Obtain and Organize Resources
- Determine Extent of Colonization
- Initiate Control Measures
- Implement Long-Term Monitoring
- Stand Down Incident and Evaluate Response
Aquatic Herbicides

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<thead>
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<th>United States</th>
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<tbody>
<tr>
<td>Copper</td>
<td>1950s</td>
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<tr>
<td>2,4-D amine</td>
<td>1959</td>
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<tr>
<td>2,4-D ester</td>
<td>1959</td>
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<td>Endothall</td>
<td>1960</td>
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<td>Diquat</td>
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<td>Peroxides</td>
<td>1980s</td>
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<td>Fluridone</td>
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<td>Glyphosate</td>
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<td>Triclopyr</td>
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<td>Carfentrazone</td>
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<td>Flumioxazin</td>
<td>2011</td>
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<td>Bispyribac-sodium</td>
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<td>Topramezone</td>
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<th>Canada</th>
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<td>Diquat</td>
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Imbalance of available pesticide products.
Why Potash?

- Cheaper than alternatives (e.g. Zequanox)
- Less environmental risk than alternatives (e.g. chlorine)
  - Still risks to native mussels and some aquatic species
- Limited risk to human health if used in proper concentrations
- Previous success in US/Canada
  - Millbrook Quarry, Virginia
  - Sister Grove, Texas
  - Lake Winnipeg, Manitoba
  - Christmas Lake, Minnesota
  - Lake Independence, Minnesota
It will work!!!
Neighbor literally has tons!

Pictures from Nutrien
Why is the AB Government Pursuing Registration?

- Limited ability for use of Federal emergency tools
- No chemical company interested (no market for potash as a mussel control agent in Alberta at this time)
- In the interest of public good and being prepared in the event of a mussel detection, Alberta sees the value in having a registered pesticide available
- Would allow use by other partnering jurisdictions
Registration Process

- Initial internal discussions in mid-2015
- Pre-submission Consultation to PMRA (Fall 2015) highlights:
  - Research:
    - Irrigation Pipeline application study (underway – lead by Ag and Forestry)
  - Registration:
    - Lakes/Rivers/Reservoirs
    - Irrigation Canals
    - Irrigation Pipelines
Registration Process

• Securing resources to gather information required for registration:
  – 200K grant to Innotech to conduct research and lead work to gather necessary information on control agents including Potash
  – Support from Intertek – a company that specializes in registration of products in both Canada and the US.
  – Securing support from a Saskatchewan supplier who could manufacture and provide product to the Government of Alberta
• Several literature studies and information gathered on:
  – Chemical information (including lab work associated with 5-batch analysis)***
  – Manufacturing information and process descriptions
  – Environmental fate
  – Toxicity
  – Storage & Use
Supply/Manufacturing Challenges

- Although Alberta will pursue a registration, we will not manufacture or directly supply product.
- Solution - Alberta to collaborate with the supplier/manufacturer to label at the distribution site and then ship/invoice to the purchaser (i.e. jurisdiction using the product) subject to the use label.
Process Challenges (Alberta Perspective)

• Expensive to complete all the necessary work required to complete a registration package
  – It takes a high degree of expertise to prepare these packages for registration – not often available in house/limited assistance

• Expensive registration fees
  – PMRA’s registration fees are in the tune of almost $100,000. This can be reduced/partially waived but costs for Alberta to register will still be in the tens of thousands.

• No streamlining of registration for products for the public good (i.e. AIS control agents)
  – Typical turnaround time from date of registration submission is 18 months.
Possible Solutions

• Look for negotiation with PMRA to discuss options for a more efficient registration process that reflects the unique situations AIS control products might present
• Continue to learn from the Potash registration in Alberta as to where efficiencies can be realized
• Proactively work to register more products that might be of benefit to potential AIS control
Next Steps

• Finalize last outstanding pieces in registration package
• Submit package for registration to PMRA
Questions?

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