Outline

1. How do we fit in the “bigger picture – plant production continuum
2. Industry Sectors
3. Regulated products
4. Current Program Objectives and Activities
5. Initiatives – Ag Growth, modernization of the *Fertilizers Regulations*
6. Emerging Challenges
7. Regulation of biosolids
8. Regulation of Anaerobic Digestates
Enable and support **innovation** and ensure **safety, quality, and consistency** in plant production, to further the well-being of Canada's **people, environment, and economy.**
Regulated Products

Fertilizers and Supplements sold or imported into Canada are regulated under the authority of the federal Fertilizers Act administered by the Canadian Food Inspection Agency (CFIA).

**Fertilizer:** any substance or mixture of substances containing nitrogen, phosphorus, potassium or other essential plant food, manufactured, sold or represented for use as a plant nutrient.

**Supplement:** any substance or mixture of substances, other than a fertilizer, that is manufactured, sold or represented for use in the improvement of the physical condition of soils or to aid plant growth or crop yields.

- N, P, K fertilizers
- Micronutrients
- Lawn and garden products
- Fertilizer-Pesticides
- Chemical supplements
- Microbial supplements
- Composts
- Waste-derived materials including biosolids, anaerobic digestates
Program Objectives and Mandate

Regulatory authority:
• *Canadian Food Inspection Agency Act*
• *Health of Animals Regulations* (for Enhanced Feed Ban)
• *Fertilizers Act* and *Regulations*: equivalent to *Canadian Environmental Protection Act* (CEPA 1999 - Sch. II and IV).

Fertilizer regulation is a joint effort; other aspects of a product’s lifecycle (manufacture, transport, use and disposal) are regulated by the Provincial, Territorial and Municipal partners.

To ensure that fertilizers and supplements, imported into or sold in Canada, are safe for:
• humans
• plants
• animals
• the environment
Key Program Activities – Health and Safety

Direct
- Worker, handler, applicator, bystander

Indirect
- Feed, grazing land
- Food crop production (adsorption and absorption, plant uptake)
- Environment (soil, ground water, waterways)

Potential Chemical Contaminants
- Heavy metals
- Chlorinated organics
- Endocrine disruptors
- Pharmaceutical residues

Potential Microbial Contaminants
- Toxins
- Allergens
- Pathogens

Supplements

Carbon Dioxide (CO₂)

Fertilizers

Food and Feed safety

User and Bystander safety

Environmental health
Key Program Activities Continued:

2. Market Access
   • **Domestic**: Registration and marketplace monitoring
   • **Import Control**: Import inspections
   • **Exports**: Export certification

3. Consumer Protection
   • **Label reviews**: Adequate safety information including precautionary statements to protect the consumer.
   • **Guaranteed analysis**: Determines safe and sustainable product application (rate, frequency, target crop)
   • **Product inspection**: Marketplace monitoring of regulated products - label reviews, verification of registration, and sampling/testing for contaminants.

4. Other Activities
   • International Standard setting
   • Stakeholder engagement
   • OGD and FPT cooperation
   • Regulatory research and oversight
**Ag Growth Act – immediate authorities**

- Export certification
- Prohibition of sale of products subject to recall
- **Powers of inspectors:**
  - Preventing non-compliance (work with regulated party to bring the product back into compliance)
  - Removal of goods for the purpose of examination, testing or taking samples
  - Requiring the provision of documents, information or samples
  - Providing for the release of a seized article – goods must be released if brought back into compliance
  - **Removal or destruction of unlawful imports**
  - Limitation on liability – Her Majesty
  - Updates to offence provisions – failing to do something that was ordered by an inspector is now an offence
  - Limitation period – summary conviction or violation
  - timeframe (2 years)
Regulations making authorities

Incorporation by reference
- Allows updates without a regulatory amendment process
- Does not address the content of incorporated documents – only a mechanism for update

Licensing of facilities
- Could be used in lieu of registration for certain product types
- Focusses on process
- Implementation would require extensive stakeholder consultation to determine:
  » applicable sectors and products
  » license requirements etc.

Record keeping
- Allows the CFIA to require that regulated parties keep records - Provides flexibility in achieving compliance
Environmental protection authorities

*Fertilizers Act:*

3.1 No person shall manufacture, sell, import or export in contravention of the regulations any fertilizer or supplement that presents a risk of harm to human, animal or plant health or the environment.

4 No person shall sell any fertilizer or supplement that contains destructive ingredients or properties harmful to plant growth when used according to the directions that accompany the fertilizer or supplement or that appear on the label of the package in which the fertilizer or supplement is contained.

*Fertilizers Regulations:*

- 11 (1) A fertilizer or supplement shall not contain
- (a) any substance in quantities likely to be generally detrimental or seriously injurious to vegetation (except weeds), domestic animals, public health or the environment when used according to directions;
- (b) any substance that would, when applied in amounts commonly used or as specified in the directions for use leave in the tissues of a plant a residue of a poisonous or harmful substance …

- (3) A fertilizer shall not contain plant nutrients that are present at toxic levels if the fertilizer is used at recommended rates.
Regulatory deficiencies

Outdated regulatory framework

- Outdated definitions and compositional criteria (Schedule II)
- Lack of clarity in exemptions
- Oversight not aligned with risk profile of the product ➔ safe products with well established history of use are subject to registration (delays to market)
- Inconsistencies in how “like” products are regulated (imports vs. domestic, farm vs. home and garden uses)
- Registration period
- Prescriptive requirements
- Lack of clear path to market for fertilizer-pesticides and supplement-pesticides
- Not in compliance with the Official Languages Act
Modernization of the *Fertilizers Regulations*

- In 2011, the Canadian Food Inspection Agency (CFIA) initiated a review of its regulatory frameworks to improve consistency, reduce complexity and strengthen environmental protection.

- Modernization of the *Fertilizers Regulations* is expected to increase responsiveness to industry changes, address gaps, weaknesses and inconsistencies, and provide clarity and flexibility to assist regulated parties in fulfilling their obligations.

- The original regulatory modernization proposal was developed in consultation with the stake-holder community, namely the Canadian Fertilizer Products Forum (CFPF).

- The initial proposal: “Proposed Changes to Fertilizer Program Administration in Canada” was published on the CFIA website in July, 2013 for a 60 day public consultation.
Course correction

• Though stakeholders were generally supportive, a few industry members expressed concerns in the summer of 2015 over certain elements of the regulatory proposal.

• The proposal was adjusted through use of new record keeping authorities (*Agricultural Growth Act* - February, 2015), alleviating some of the incremental costs and key irritants identified.

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<tr>
<th>Initial Proposal</th>
<th>Modified Proposal</th>
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| **Marketplace label** must identify ingredients and their sources to qualify the product ‘s exempt status (including registration numbers). | **Option to either:**
1) information on marketplace label
2) prepare and maintain records containing this information and provide to CFIA as required |

• The CFIA is now targeting December 2017 for *Canada Gazette I* publication
Emerging challenges

- Competitive pressures and the rising cost of primary fertilizer materials are driving manufacturers to diversify their supply chains introducing new hazards:
  - Recycled materials and industrial by-products
  - Elevated heavy metals, dioxin and furans, radioactive compounds
  - Foreign sources - low cost inputs
  - Nutrient pollution (eutrophication, water shed contamination, run-off, leaching)
  - Climate change adaptation and environmental sustainability of fertilizer use
  - Enhanced Efficiency Fertilizers, Controlled Release, Nitrogen Stabilizers
  - Emerging technologies – genetic modification, nanotechnology
  - Increasing complexity of formulations (multiple active ingredients)
  - Increasing interest in “natural” alternatives to chemical fertilization
Municipal Biosolids – benefits and risks

- Waste diversion pressures – provincial and municipal bans on landfilling organics
- Use of human waste (biosolids) as fertilizers and soil conditioners on agricultural lands
- Applicability and relevance of current safety standards

Benefits:
- Organic Matter
- Nutrients (N, P, K)
- Lesser nutrients
- Waste diversion
- Augmentation of fertilization regimes
- Slow release of nutrients

Potential contaminants:
- Heavy metals
- Persistent Organic Pollutants
- Dioxins and furan-like compounds
- Pharmaceutical residues
- Nanomaterials
- Pathogens
  - Bacteria
  - Viruses
  - Helminths
- Antimicrobial Resistance
- Physical contaminants
- Odour

Effective and Proper managements is essential!
Regulation of municipal biosolids under the Fertilizers Act

• Municipal biosolids – Processed Sewage are defined in Sch II as: *Products made from sewage, freed from grit and coarse solids, that are dried, ground and screened (Specify grade.)*

• Can be represented as a fertilizer (guarantee nutrients) or a fertilizer AND a supplement (guarantee organic matter)

• Currently exempt from registration and pre-market assessment

• Must meet all the prescribed safety (metal, pathogen, and dioxin and furan standards)

• Regulated by the CFIA only when SOLD or Imported
• Proposed to continue to appear on the “List of Materials” – revised definition
Anaerobic Digestates

Requires registration under the Fertilizers Act and Regulations

LITERATURE REVIEW - Growing pressures to divert organic waste from landfills

Purpose:

• Describe AD technology, summarize the process parameters and procedures employed to reduce the presence of contaminants of concern

• Summarize the Canadian Provincial regulations governing the use of digestate and compare them to international standards, norms and practices

• Identify the potential benefits and risks associated with digestates
  • Chemical, biological and physical contaminants
  • Identify environmental risks
  • Summarise economic, social and environmental benefits when properly managed

• Describe potential measures to mitigate risks to human, plant, animal health and the environment

In order to design the most appropriate regulatory controls and approaches
Questions

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