

# Treated seed regulations in Québec

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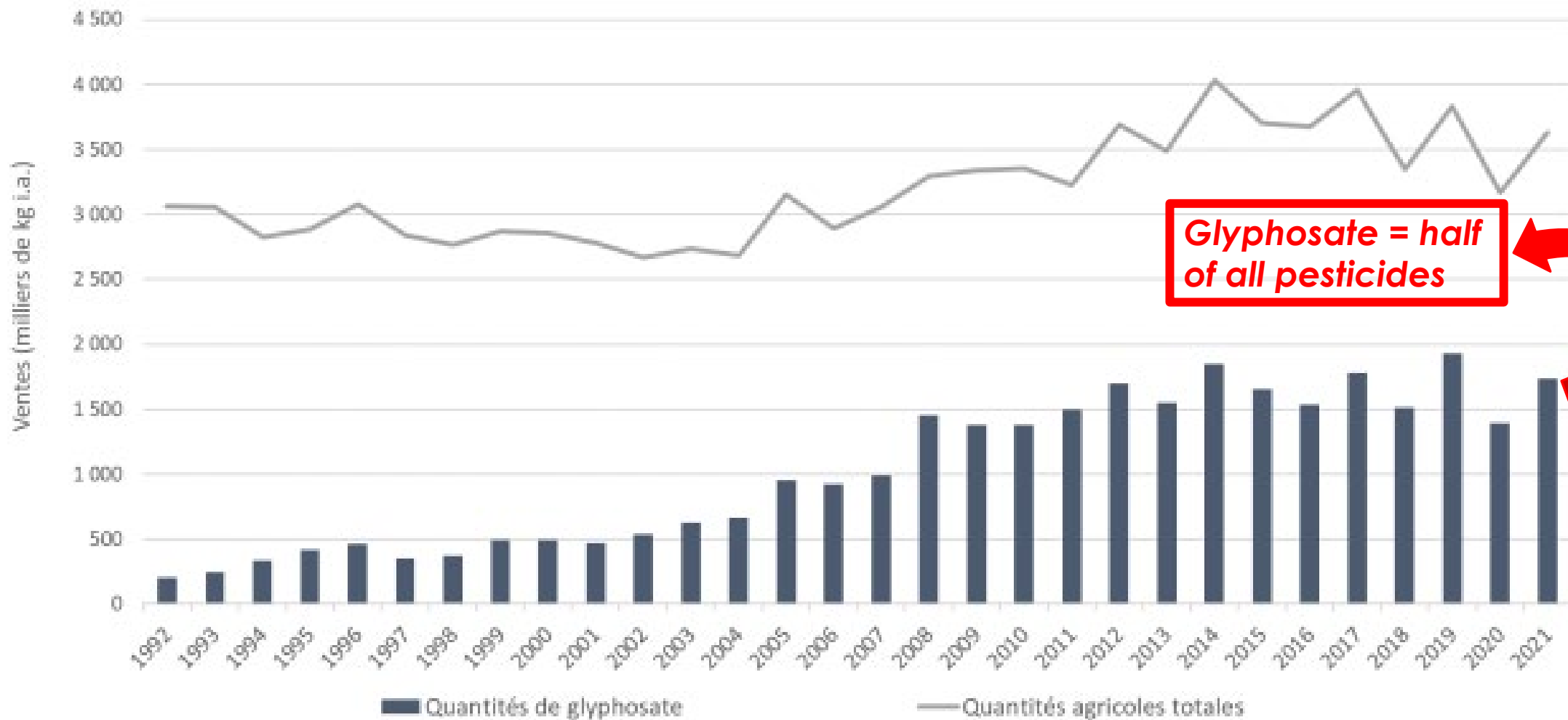


# The backdrop

- ▶ Québec: around 1 M acres each of corn, soybeans; 600 000 acres in small grains; 100 000 acres in vegetables;
- ▶ Total pesticides used: over 5 tons of active ingredients, 74 % in the ag sector;
- ▶ In 1992, the Ministry of Agriculture, together with the Ministry of Environment and the farmers union agreed upon a plan aiming at a reduction of 50 % of the amount of pesticides used by 2000: no effect;
- ▶ The plan (voluntary) was resurrected, with lesser, more humble objectives, in 2011 and again in 2020: no effect;
- ▶ Conclusion: incentives and extension don't work (but no one ever wondered why).



**Figure 1. Évolution des ventes totales depuis 1992**



**Glyphosate = half of all pesticides**

**Figure 3. Variation annuelle des ventes de glyphosate du secteur de la production végétale depuis 1992**



## In the meantime...

- Monitoring by the Ministry of environment reported that pesticides were detected in most if not all streams, and in increasing concentrations, especially neonics;
- Scientific evidence of their toxicity built stronger. For ex., Bonmatin (2010): toxicity of neonics for honeybee = 5400 à 7297 X that of DDT;
- Public concern grew stronger: environment, public health, etc.
- Public funded-research showed no benefit to farmers from the use of insecticide-coated seed in 84 field crops trials (Labrie et al., 2020)


# Ministry of Environment 2019: 5 « High-risk pesticides »

*Require recommendation by a registered agronomist*

Active ingredient	Type	Crops	% Reduction since 2015	Remarks
Atrazine	Herbicide	Field crops	90	Persistent in the environment
Chlorpyrifos	Insecticide	Vegetables	66	Unlawful in Canada by the end of 2023
Clothianidin	Neonicotinoids (Insecticides)	All	99	As of 2015, 100 % of the corn planted, 50 % of the soybeans were treated with NST; in 2021, 0,5 %.
Imidacloprid				
Thiamethoxam				



# Impacts on crops and farmers

- No crop failures have been reported;
  - No impact on yield either, although some cases were brought up, but after a closer look by the agronomists, there were no cases of damages to seedling, stand (population of plants/acre) or yield that could be traced back to the absence on NST;
  - A rapidly growing number of farmers are using insecticide-free seed (just fungicides) and again no negative impacts are reported;
  - Spring 2023: between 20 and 30 % of the seed sales were without insecticides;
  - Can be linked to 3 factors: pressure coming from all around, evidence of no harm being done (> 1000 trials), and a temporary incentive of 12 \$/a from the Crop insurance board to their customers not using insecticides.
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# The shortcomings

- Instant switch to other insecticides, i.e. diamides, despite evidence of their uselessness;
- Diamides soon detected in most water ways of the corn growing areas;
- Proven to be less toxic to honeybees, but more to butterflies and aquatic life;
- Sales of pesticides keep up, loss of trust, public outcry;
- Alternative methods, i.e. Integrated pest management (crop rotation, etc.), are overlooked;
- June 2023: the Minister of Environment requests a modification to the Pesticide code (Code de gestion des pesticides) to require verification of need for all seed insecticides and fungicides to protect water and bees;
- How come we must turn to legislation even when such toxic compounds show no benefit to farmers ? Industry and Farmers organization interference, too few extension agronomists.





# Conclusion

- Legislation has limitations;
- The adoption of basic agronomic research results – IPM - could bring about a short term reduction of more than 50 % in the use of pesticides;
- But unless the extension system undergo major adjustments, we will rely on legislation;
  
- ***Questions ?***