



**GLOBAL FOOD REGULATORY  
SCIENCE SOCIETY**

# “Vegan” and “plant-based” claims: risk implications for milk- and egg-allergic consumers in Canada

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# The Changing Environment of Food Allergic Consumers

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❑ Consumers with Food Allergies continue to Strive to get reliable information on the Food they Access

- Safe food alternatives
- Diverse Sources of Food

❑ Food Allergen Labeling requirements have contributed to addressing these needs

❑ Codex / International Standards are Evolving to Accompany the Changing Dynamic

❑ Preventive Measures / Enhanced Labeling Requirements / Recognition of Clinical Thresholds

❑ Clinical developments in immunotherapies, enhanced awareness for early detection and treatment of patients

❑ Enhanced industry awareness of allergen related issues

❑ Food Allergy policies adopted in public spaces → enhanced awareness



# Motivation and research questions

*Increased availability of prepackaged foods marketed as “vegan” & “Plant-Based”*

*Drivers: consumers’ environment, sustainability, animal welfare, health concerns*

*“Vegan” implies absence of ingredients of animal origin – including eggs and milk*

- Do **egg- and milk-allergic** consumers in Canada perceive “vegan” labels as indicators of **safety**?
- Are **egg or milk proteins detectable** in “vegan” (and “plant-based”) foods sold in Quebec, Canada?



# “Vegan” claims: Standards and Regulatory Environment

- ❑ ISO 23662:2021: Definitions and technical criteria for foods and food ingredients suitable for vegetarians or vegans and for labelling and claims
- ❑ Certifications and standards (ISO 23662:2021) do not guarantee absence of cross-contact allergens of animal origin
- ❑ Not defined in food regulations in Canada
- ❑ Canadian Food Inspection Agency:
  - “While a vegan diet or foods are made from only plant-based ingredients, it is also recognized that several definitions of ‘vegan’ exist. When making claims on a food, companies can apply additional criteria or standards that take account of other factors in addition to the ingredients of the food”
- ❑ Thus, **presence of ingredients of animal origin or use of PAL** for these is beyond the scope of regulatory enforcement
- ❑ In Canada, most recalls of “vegan” products due to undeclared milk or egg
- ❑ One fatality reported in Italy (dairy-contaminated “vegan” tiramisu)



# “Plant-based” claims

- ❑ Increasing market share
- ❑ **Drivers:** alternative to animal proteins in terms cost, nutrition and sustainability
- ❑ May appeal to consumers allergic to eggs or milk
- ❑ Expected to be made *primarily* of plant-based ingredients but may be formulated to comply with diets other than “vegan” (e.g., vegetarian, ovo-lacto-vegetarian, flexitarian...)
- ❑ Canadian regulations: Claim Based on Truthfulness and Substantiation
- ❑ **Recalls in Canada** due to undeclared milk or egg



# Documenting Consumers' Understanding

- ❑ Sample size: **337** responses from egg- or milk-allergic individuals (or parents of)
- ❑ Question: *When buying food products you will consume (or that will be consumed by your child with and allergy to egg or milk), **how often, if ever, do you purchase products containing a vegan claim?***
- ❑ Answers
  - Never (14%)
  - Sometimes / depends on situation (73%)
  - Always (14%)
- ❑ Margin of error: Sample Size leads to a margin of Error of **5.4% at 95% confidence level**



# Risk implications

- ❑ 87% would buy products with a “vegan” label = used as indicator of safety by egg- or milk-allergic consumers when making purchasing decisions
- ❑ Potentially perceived as lower risk than PAL by these consumers
  - Likelihood of purchasing products with PAL: 40% in North America (Marchisotto et al., 2017); 54% in Canada (Graham et al., 2023)



*Perception that “vegan” claim is a credible indicator of absence of egg or milk proteins may put allergic consumers at risk (Vegan is regulated through another regulatory lever)*

*Need for credible indicators directly linked to level of cross-contact allergen risk*

# Market survey: Available products and Allergen presence

- ❑ 3 different supermarkets in Quebec
  - ❑ Items from all categories that contained “vegan” and “plant-based” labels, regardless of certification status
  - ❑ Targeted sampling: products with PAL for egg and/or milk, long list of ingredients, contained chocolate
  - ❑ Analytical method: ELISA (R-Biopharm)
    - RIDASCREEN®FAST Milk (LOQ 2.5 mg/kg)
    - RIDASCREEN®FAST Egg (LOQ 0.245 mg/kg)
      - Recommended for detection of raw egg protein.
- Most samples analysed were subject to little or no heat treatment.





# Egg and milk proteins detection

□ n = 124 (samples analysed for one or both allergens depending on product type)

□ Egg proteins: 0/64 samples

□ Milk proteins: 5/87 samples

- 4 certified “vegan” dark chocolate bars from the same manufacturer with PAL for milk (**134.9 ± 18.5 ppm**). Estimated exposure dose = **4.72 mg (milk reference dose = 2 mg protein)**
  - Could elicit a reaction in **6% of Milk Allergic Consumers**
- 1 supermarket-brand cake with a blanket PAL statement (**2.6 ppm**). Estimated exposure dose = **0.25 mg**
  - Could elicit a reaction in **6% of Milk Allergic Consumers**



*Use of PAL for milk + “vegan” could be misleading and contradictory, but necessary to communicate risk in these specific cases*

# Risk implications

- ❑ Overall, in Quebec, foods carrying “vegan” or “plant-based” labels pose little risk to egg- or milk-allergic consumers
- ❑ Likely due to allergen management practices applied by Canadian manufacturers
- ❑ Low Risk is NOT to be attributed to “vegan” or “plant-based” labels
  - Vegan Claims regulated in Canada with Other Levers than Allergen Management – i.e., with respect to content of ingredients of animal origin **and must not be interpreted** as such by consumers



# Conclusions and Future Considerations .....

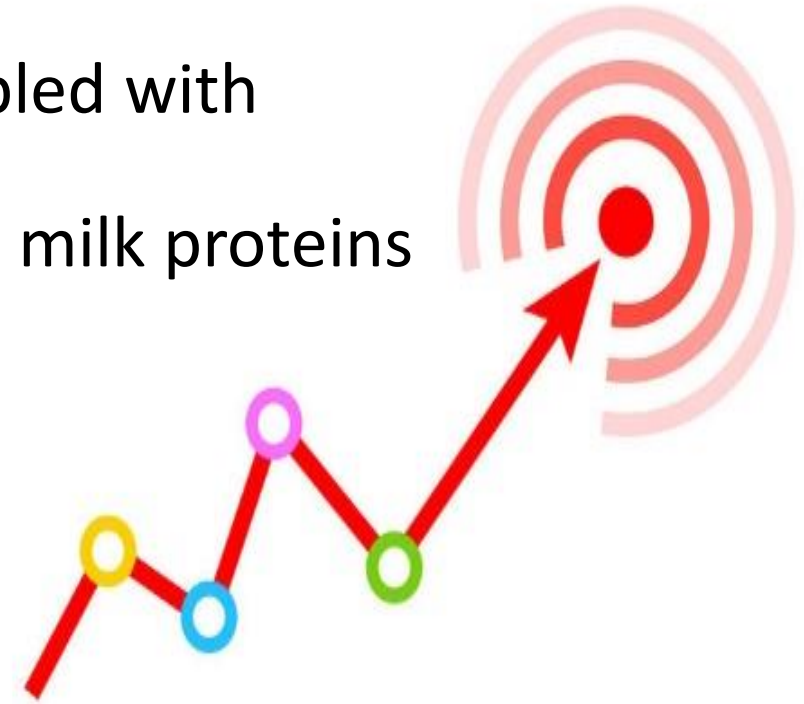
❑ High prevalence (87%) of egg- or milk-allergic individuals may consume prepackaged foods with “vegan” claims

- Lack of awareness of regulatory requirements, coupled with
- Absence or very low levels of cross-contact egg and milk proteins

❑ Reinforced misperception of guaranteed safety

❑ Similar to previous reports on consumption of products with PAL

- Test small portion, no reaction, assumption product will consistently deliver same level of safety)



# Recommendations

- ❑ Consumer education campaign (regulatory meaning of “vegan”, potential presence of cross-contact allergens and PAL)
- ❑ Manufacturers’ awareness of how some allergic consumers interpret “vegan” claims
  - Avoid targeting this population
- ❑ Reconsideration of the regulatory requirements for the use of these labels
  - Better inform and protect egg- and milk-allergic consumers

