

# Canadian Consumers and GM Education

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## Outline

- Report on some of our recent research, which may shed light on Canadian consumers' preferences & willingness to purchase GM food;
- Attitudes toward information:
  - # information search in an experimental context;
  - # trusted sources of information re GM
- Ongoing research

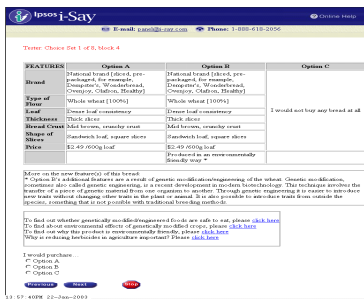
## Canadian consumers' GM trade-offs:

- Rather than just asking for opinions, we simulate purchase behaviour (trade-offs) for product variants (wheat bread) described in terms of characteristics.
- 445 respondents (drawn from a representative Canadian panel maintained by a major marketing firm) 8 choice tasks each.
- Statistically designed internet-based survey

## A Bread Choice Experiment:

- In each choice task respondents could choose one of three different options:
- Their normally-purchased bread;
  - A substitute, varying in terms of type of brand and flour-type, price, GM content; and another introduced feature (healthy vitamins; environmentally friendly production; these could be GM-based);
  - Or choose not to make a purchase

## Sample Choice Task



## We Find:

- Much variation in consumers' preferences relative to GM food—some value this attribute, particularly when it is tied to enhanced product; others are very averse.
- Four distinct classes of Canadian bread buyers, relative to their GM food preferences are seen (latent class model)

## Some consumers do not care about GE food! Some care a lot!

Table 1: Parameter values for latent class model

Variable	Segment 1 Traditional consumers		Segment 2 Value-seeking consumers		Segment 3 Fringe consumers		Segment 4 Anti-GM consumers			
	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio		
Option 3 – noce option do not buy any benefit	-6.11*	-23.07	-23.14*	-14.05	-5.23*	-7.96	-2.01*	-4.32	-6.16*	-13.11
GM	-0.33*	-8.79	-0.05*	-0.78	-1.00*	-9.65	0.12	0.72	-1.08*	-13.66
Health benefit	0.50*	12.66	0.79*	11.75	-0.18*	-2.38	0.52*	2.96	0.61*	10.19
Environmental benefit	0.27*	6.41	0.50*	7.12	-0.86*	-8.10	0.05	0.23	0.81*	9.73
GM with health benefit	-0.47*	-3.82	-0.67*	-3.30	1.09*	3.60	-0.83	-1.54	-0.30	-1.55
GM with environmental benefit	-0.10	-0.75	0.09	0.45	1.52*	4.57	0.60	1.15	-1.01*	-4.38
Price paid	-1.34*	-12.56	-5.83*	-14.60	-1.24*	-5.13	-1.33*	-5.14	-0.89*	-4.72

\* Estimated coefficients (probabilities) are significantly different from zero at the 1% significance level

## The Four Groups (& % of total):

- Value seekers (51% ) valued additional health or environmental benefits and were indifferent to GM content;
- Traditional consumers (14 %) strongly preferred their normally-purchased food; opposed GM
- Fringe consumers (4 %) valued the health attribute and could defer consumption.
- Anti-GM group (32 %) strongly opposed GM ingredients in food irrespective of introduced attributes.

## Can we predict the classes?

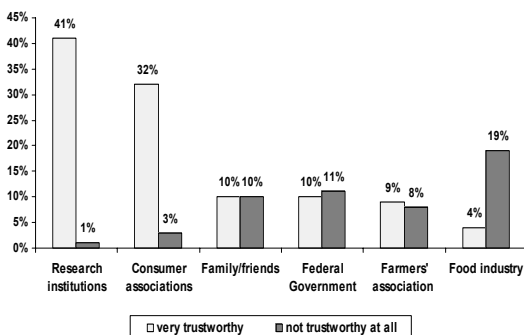
Trade-offs depend upon individual's characteristics:

- Age,
- Gender, and
- Having children in the household are important.

## Policy implications?

- There is a clear dichotomy in Canadian attitudes to GM content in food, which was strongly opposed by 46% (anti-GM and traditional consumers).
- Our analysis of the information search process embedded in the experiment suggests that those who opposed GM tended to be more likely to seek information

## Trust in GE Information Sources



## Summing up:

- There is a strong dichotomy in attitudes;
- Attitudes can change, but GM has been stigmatized
- Information/education efforts that are independent from industry may be more trusted.
- Good risk communication principles need to be practiced.

## Ongoing research

- We are analyzing the relationships between information scenarios and trade-offs;
- Starting to undertake research on preferences and trade-offs relating to plant molecular farming products and research

## Acknowledgements & References

- This research project is supported by Genome Canada through the Genome Prairie GE3LS Project and by the Alberta Agricultural Research Institute.
- Reference:  
Hu, W., Huennemeyer, A., M. M. Veeman, W. L. Adamowicz and L. Srivastava (2004) "Trading off Health, Environmental and Genetic Modification Attributes in Foods" *European Review of Agricultural Economics*. 31 (3: September) 389-401