Consumer Research to Support a Standardized Grading System for *Pure* Maple Syrup

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INTERNATIONAL MAPLE SYRUP INSTITUTE

Cintech AGROALIMENTAIRE

Objectives

The objectives for the study were:

- Determine if consumers are able to discriminate between different types of maple syrup based on taste alone
  - If so, investigate the basis on which the discriminations are made
- Verify if consumers are able to categorize different syrups into at least two categories based on visual clues alone
  - Establish the basis for the categorization
- Elicit spontaneous category names or attributes that differentiate maple syrups
- Provide input to the development of a standardized grading system that will be simple and easily understood by both consumers and maple syrup producers and packers.

Methodology

Two data collection approaches used – quantitative & qualitative:

Quantitative

- 300 maple syrup users in 3 locations
  - Quebec (106), Ontario (94), New Jersey (100)
- Each participant blind taste tested 8 pairs of maple syrup + 1 blended maple syrup versus table syrup (always presented last)
  - Task was to state if they were the same or different products
  - Also indicate how much they liked product
- A total of 13 distinct products were tested; the products varying on taste, colour code and intensity of the taste
  - Two blended products were also tested along with one table syrup
  - All samples provided by client

Methodology – *continued*

Quantitative - *continued*

- The incomplete design with respect to flavour, colour code and intensity as well as the total number of participants resulted in the following design for the pairing of products:

	Flavour				
class	vanilla	maple	confectionery	empyreumatic	woodsy
AA	X	X	X		X
A	X	X	X		X
B		X	X	X	
C				X X	

Pairs: ***within flavour*** (|), e.g. AA-v vs A-v – **11 pairs**

→ ***within class*** (—), e.g. AA-v vs AA-m – **15 pairs**

→ ***across flavour (vanilla, maple, confectionery) and class (AA, A)*** (×), e.g. AA-m vs A-c – **6 additional pairs**

→ **Total pairs = 32**

→ **+ blended 1 vs TS (table syrup) and blended 2 vs TS (2 additional pairs)**

Methodology – *continued*

Quantitative - *continued*

- Pairs were presented in opaque glass to prevent participants from forming evaluations based on visual cues
- Water and unsalted crackers were provided in order to cleanse the palate
- The following measures were taken:
  - Are the two products tasted the same product or different products – participants were led to believe that some of the pairs consisted of identical products
  - If the same, they were asked to evaluate the extent to which they like the product on a 9-point liking scale.
  - If different, they were asked to indicate which one they preferred as well as evaluate both on the 9-point liking scale
  - For the first 3 pairs, participants spontaneously described their impressions of the product tasted (first, when they were considered to be different) in words or short phrases – for the next 5 pairs a list of other possible descriptors was provided

Methodology – *continued*

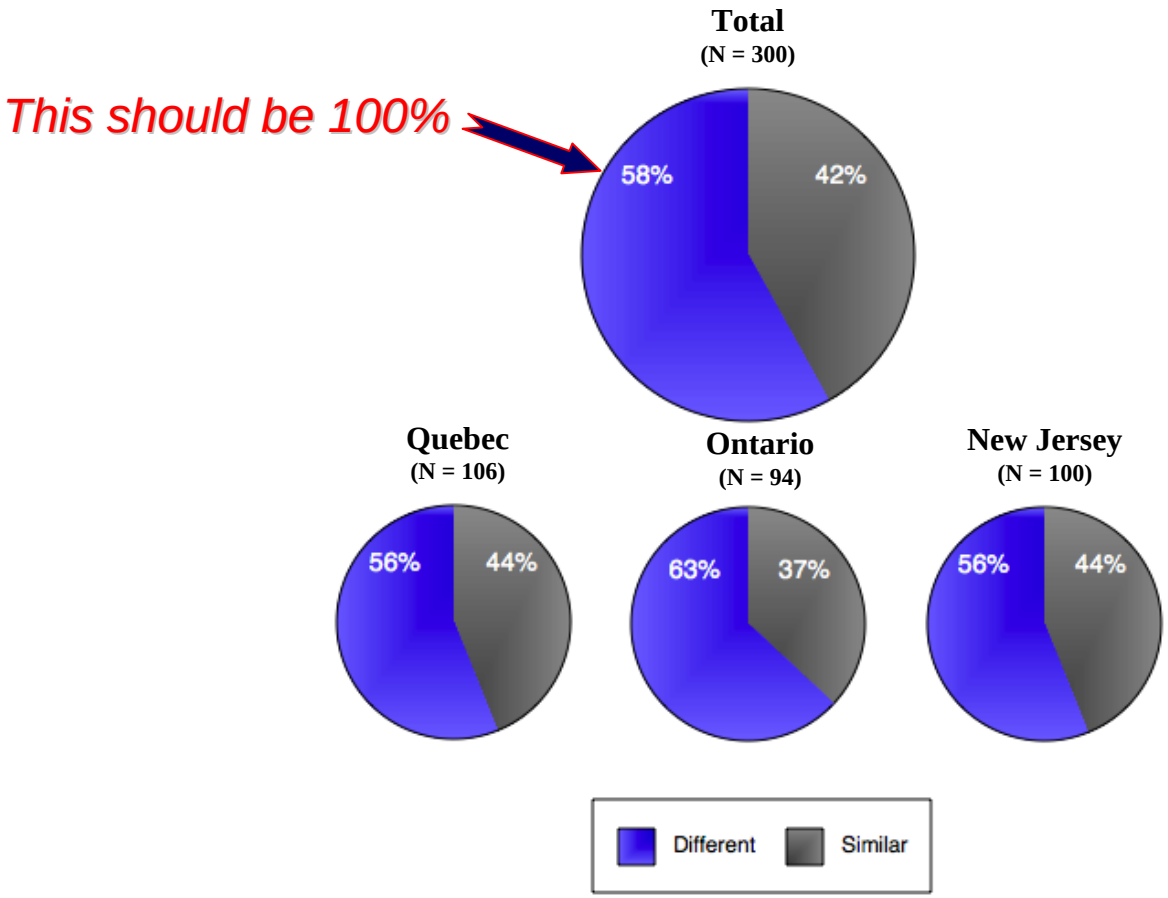
Qualitative

- Total of 6 focus groups – 2 per location
- Approximately 10 people took part in each group – the 10 selected from quantitative participants
- The groups followed immediately after blind taste test
- The following topics were covered in the groups:
  - Impressions of blind taste test
  - Sort task – 16 products sorted into minimum of 2, maximum of 7 classes; classes then ordered by preference
  - Words associated with classes – spontaneous then those used in quantitative
  - Reaction to existing classification systems
  - Reaction to a possible colour coding system
  - Impressions of various containers for maple syrup

What have we learned?

Findings: Same or different, overall

- Overall, when it comes to differentiating one maple syrup from another, it's a coin toss; i.e., respondents tend to guess



Findings: Same or different, based on colour code

- Differences in colour codes (AA, A, B, C) does not provide any additional help to participants

PERCEIVE PAIRS AS DIFFERENT
– TABLE SYRUP EXCLUDED –

COLOUR/TRANSMIT-TANCE	TOTAL	QC	ON	NJ
AA vs. A	59% (n=750)	58% (n=263)	61% (n=236)	59% (n=251)
AA vs. B	55% (n=150)	54% (n=52)	**73% (n=48)**	**38% (n=50)**
A vs. B	56% (n=150)	49% (n=53)	53% (n=47)	66% (n=50)
B vs. C	*45% (n=150)*	*38% (n=53)*	*60% (n=47)*	*38% (n=50)*
AA vs. AA	56% (n=900)	53% (n=316)	62% (n=282)	53% (n=302)
A vs. A	73% (n=896)	76% (n=320)	73% (n=278)	70% (n=298)
B vs. B	45% (n=448)	37% (n=158)	**59% (n=140)**	43% (n=150)
C vs. C	54% (n=148)	58% (n=52)	50% (n=48)	54% (n=48)

Likely due to A-Woodsy

Findings: Same or different, based on flavour

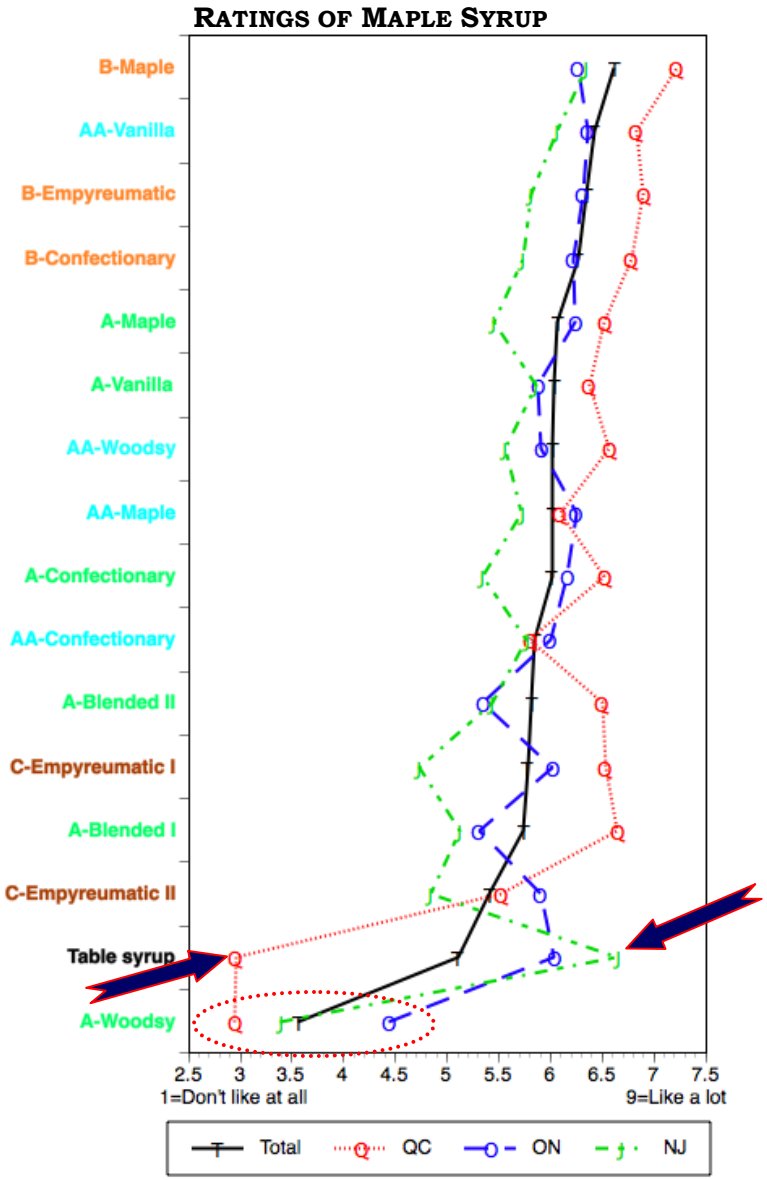
- Neither does differences in flavour (maple, vanilla, confectionary, empyreumatic, woodsy)

PERCEIVE PAIRS AS DIFFERENT
– TABLE SYRUP EXCLUDED –

INTENSITY	TOTAL	QC	ON	NJ
Maple vs. Vanilla	55% (n=299)	**45% (n=104)**	**65% (n=94)**	54% (n=101)
Maple. vs. Conf	58% (n=373)	58% (n=132)	59% (n=118)	56% (n=123)
Maple vs. Woodsy	71% (n=150)	70% (n=53)	72% (n=47)	62% (n=50)
Maple vs. Empyr.	49% (n=76)	46% (n=26)	61% (n=23)	41% (n=27)
Vanilla vs. Conf.	56% (n=300)	56% (n=108)	54% (n=92)	58% (n=100)
Vanilla vs. Woodsy	73% (n=150)	77% (n=53)	72% (n=47)	68% (n=50)
Conf. vs. Empyr.	39% (n=74)	27% (n=26)	58% (n=24)	33% (n=24)
Conf. vs. Woodsy	68% (n=151)	62% (n=53)	64% (n=47)	67% (n=51)

Likely due to A-Woodsy

Findings: Product liking

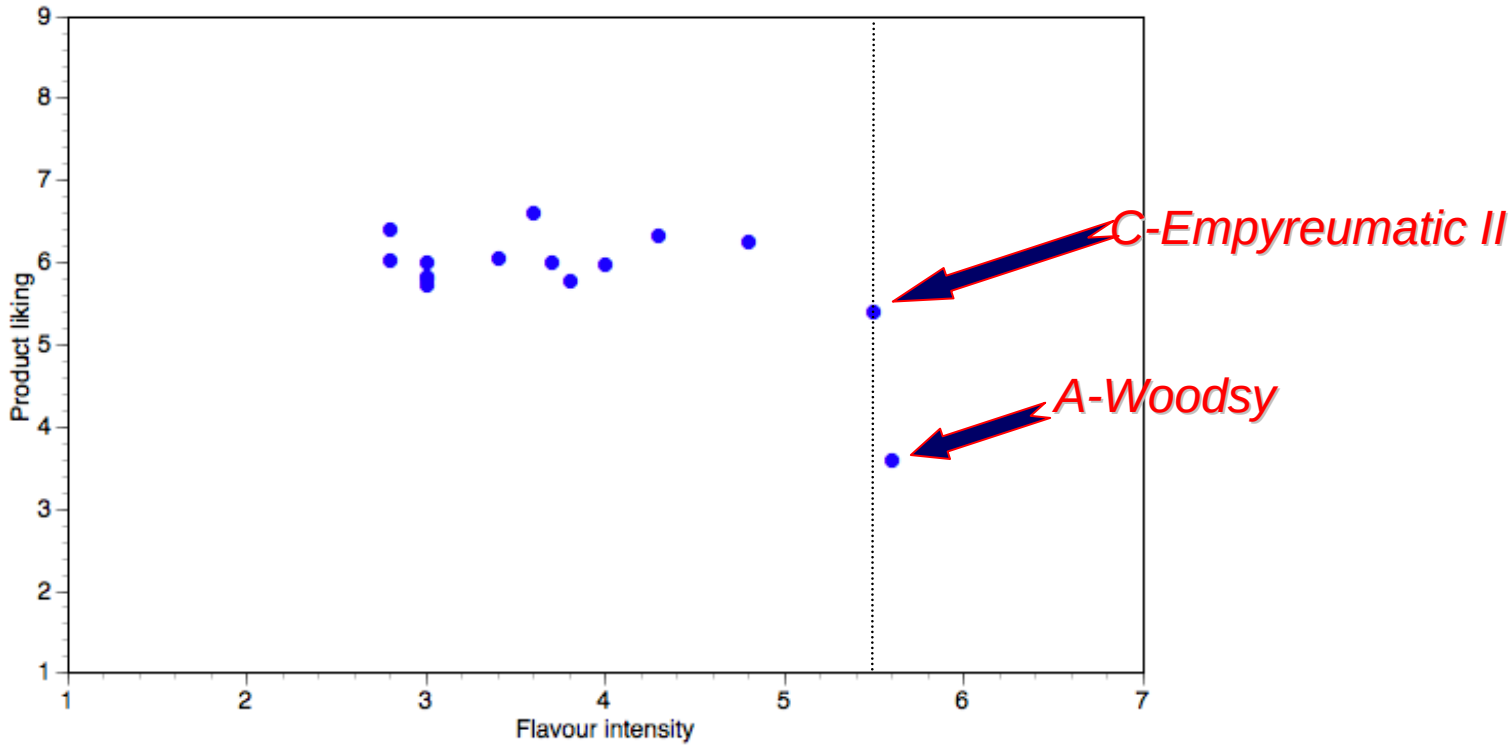


- Although 3 of the top 4 rated products are category B syrups, the differences tend to be minimal from one product to another until C-Empyreumatic II
- A-Woodsy is clearly the least liked product
  - Table syrup experiences the same fate in Quebec but is the most liked product in New Jersey
- Quebec respondents tend to appreciate maple syrup more than in Ontario which is more favourable than New Jersey

Findings: Taste intensity and liking

- A taste can be too intense – a taste intensity of 5.5/7 is associated with lower liking scores

Scatterplot of Participant Liking by Taste Intensity (*as indicated by expert panel*)



Findings: Visual categorization of products

- Based on colour, participants tend to create 6-7 categories; 3-4 in New Jersey
- This reduces to ±4 categories when grouped by preference
- Medium to medium dark products tend to be preferred
- Participants tend to link colour intensity with taste intensity

QC1

ON2

QC2

NJ1

ON1

NJ2

Least preferred ⟷ Most preferred

Findings: Maple syrups and associated words

- Based on both the quantitative and qualitative sessions, the following, positive words tend to be associated with different maple syrups:

Darker syrups

- thick, bold,rich, full-bodied, strong maple flavour, substantial, robust
- creamy, smooth, mellow
- amber, golden, clear
- delicate, mild, subtle, light, weak maple flavour (can substitute words like delicate, etc.)

Lighter syrups

The most popular words used to describe maple syrup are "sweet" and "thick" regardless of the product; as such, they have limited utility

Findings: Maple syrup – show it

- Consumers generally want to see the maple syrup they purchase; Quebecers make an exception to this when they purchase maple syrup in cans

Accepted | It depends | Rejected

Findings: Information requirements

- When asked what they would *like* the "ideal" classification system to communicate to them, participants indicated the following elements:
  - It's pure maple syrup – nothing added, nothing taken away, no additives
  - The colour category of the syrup, especially if not in transparent containers
  - As appropriate, the intensity of the maple flavour
    - Flavours other than maple are seen as being a category apart – there is the suspicion that the flavour has been added to the maple syrup, not inherent in it
  - The country of origin as well as the province/state – some would like to have the producer listed

- Elements that were rejected include:
  - Terminology such as: AA, etc; #1, #2, etc.; Grade A; "amber" for all colours

Summary

We know that!

- Consumers have difficulty discriminating one maple syrup from another based on taste alone
- Colour is very important to them
- Consumers are able to produce a minimum of 4 categories of maple syrup based on its colour
  - They tend to assume that there is a one-to-one relationship between the colour of a syrup and the intensity of its taste – darker colours have more full-bodied, intense tastes
- Words used to describe different visual grouping of syrup tend to reflect this assumption; i.e., darker = robust, bold, full-bodied, etc., lighter = delicate, mild, subtle, etc.
- They want maple syrup to taste like maple; other tastes, if too pronounced, may be greeted with some suspicion

Possible next steps

- Investigate what approaches other industries, faced with a situation similar to that of the maple syrup industry, have adopted to classify their products in a way that is both easily understood by their customers as well as serving to promote it effectively
- Develop X number of categories (likely to be 3-5) for maple syrup based on the most probable dimension used by consumers to classify maple syrup, taking into account producers and transformers ability to meaningfully vary syrup on that dimension - colour cannot be ignored in the development of the categories
- Develop a sufficient number of concepts (2-5) reflecting the new classification system; validate on consumers as well as producers and transformers
- Estimate the impact of the new classification system on sales potential

Thank You

Merci

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Votre partenaire de la conception à la commercialisation des aliments