



International Egg Commission

# Eggs and egg products: Consumers' attitudes, perceptions and behaviours

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# Agenda

- The egg – A global food;
- Attitudes, perceptions & behaviours – regular eggs;
- Attitudes, perceptions & behaviours – “Specialty eggs”
- The case of egg products;



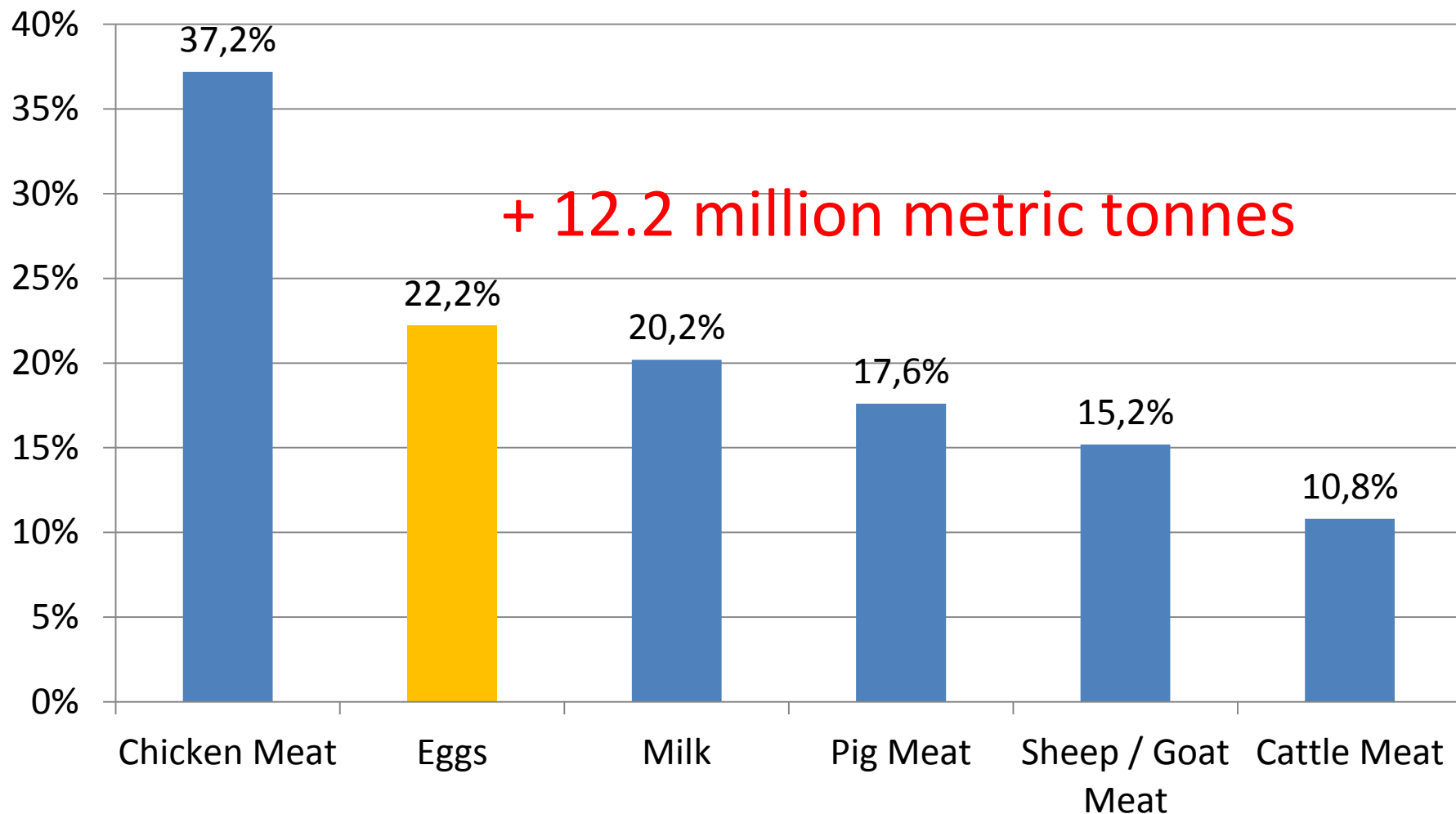
## International Egg Commission:

- Commission was established in Bologna in 1964 to represent the egg farmers and egg processors worldwide;
- Members in over 60 countries, covering all 6 continents and representing over 90% of the egg production worldwide;
- Membership made up of country organizations, egg farmers, egg processors and allied industries (equipment manufacturers, packaging materials, feed ingredients and supplements);
- We represent egg farmers of all sizes;



# The egg – A global food

## % Growth of the Global Animal Production (2001-2009)



**Source:** *FAO Yearbook 2010 – Production data - Tables B.10, B.11 and B.12*

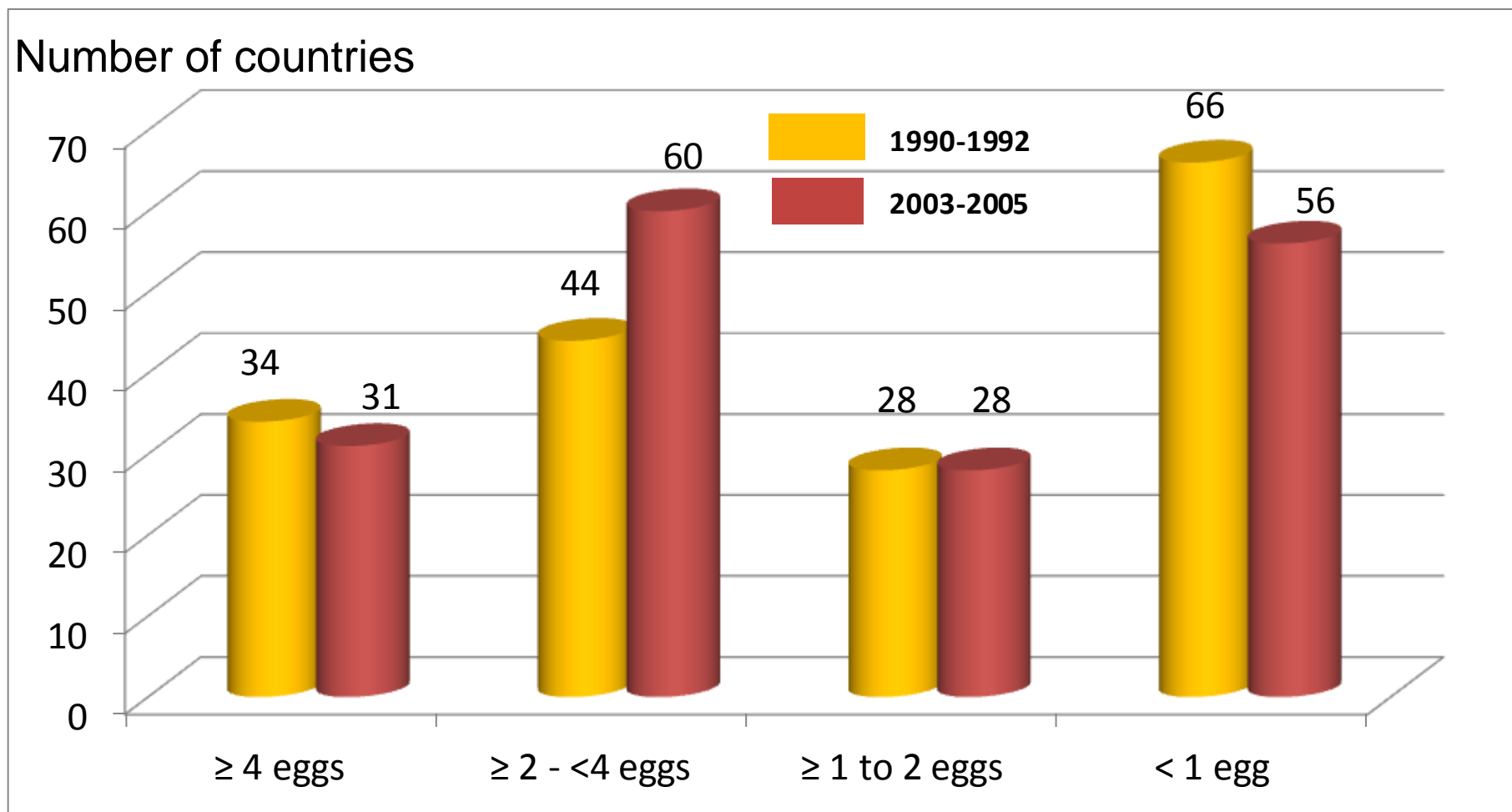


## Comparison of per capita egg consumption

Range of increase or decrease (%) in per capita egg consumption between 1990-1992 and 2003-2005	Number of countries
$\geq 100\%$	17
50 to 99%	23
20 to 49%	32
2 to 19%	28
$< - 2\%$ to $2\% <$	6
- 2% to - 10%	18
- 11% to - 20%	22
- 21% to - 30%	13
$> - 30\%$	13



## Weekly egg consumption in 175 countries





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# The Eggs – The Consumer



Consumers'  
attitudes,  
perceptions  
and behaviours



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# The Eggs – The Consumer

## Consumer surveys

Australia



1,225 adults (online) - May 2011

AUSTRALIAN EGG  
CORPORATION LIMITED



Canada



1,180 women (online) - July 2011

EGG FARMERS  
OF CANADA  
Dedicated to Quality



LES PRODUCTEURS  
D'ŒUFS DU CANADA  
Dédiés à la qualité

Netherlands



1,125 households (online) - 2009



USA



1,015 adults (online) - October 2011



American Egg Board





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# Regular Eggs





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# Regular Eggs

## Species - Quail







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# Regular Eggs

## Species - Duck





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# Regular Eggs

## Species - Duck



Not a minor species !

China = 3.5 million tonnes

= Laying hens egg production  
in Brazil + France + Germany  
+ Italy







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# Regular Eggs

## Species – Goose and Ostrich





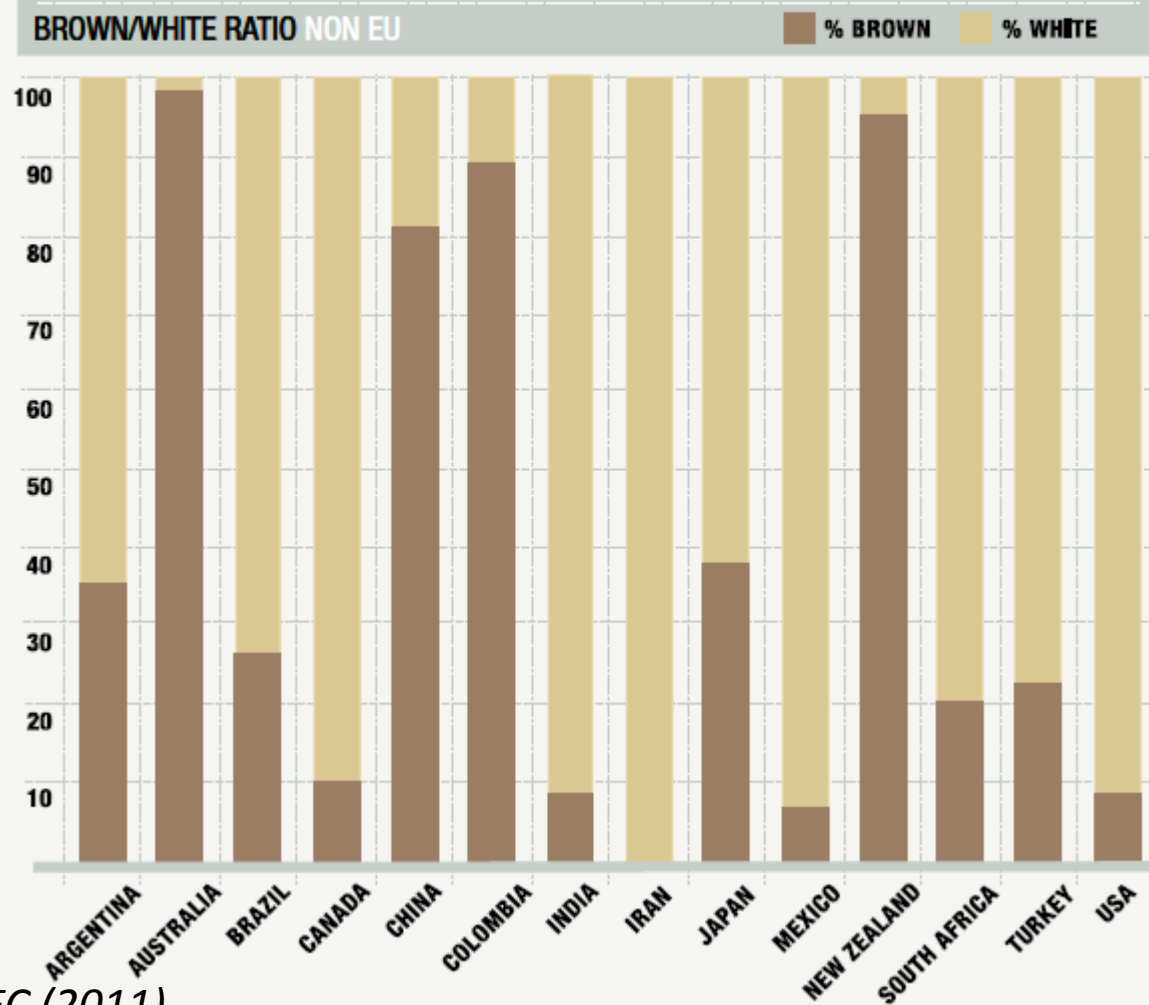
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# Regular Eggs





## Egg shell colour - outside Europe





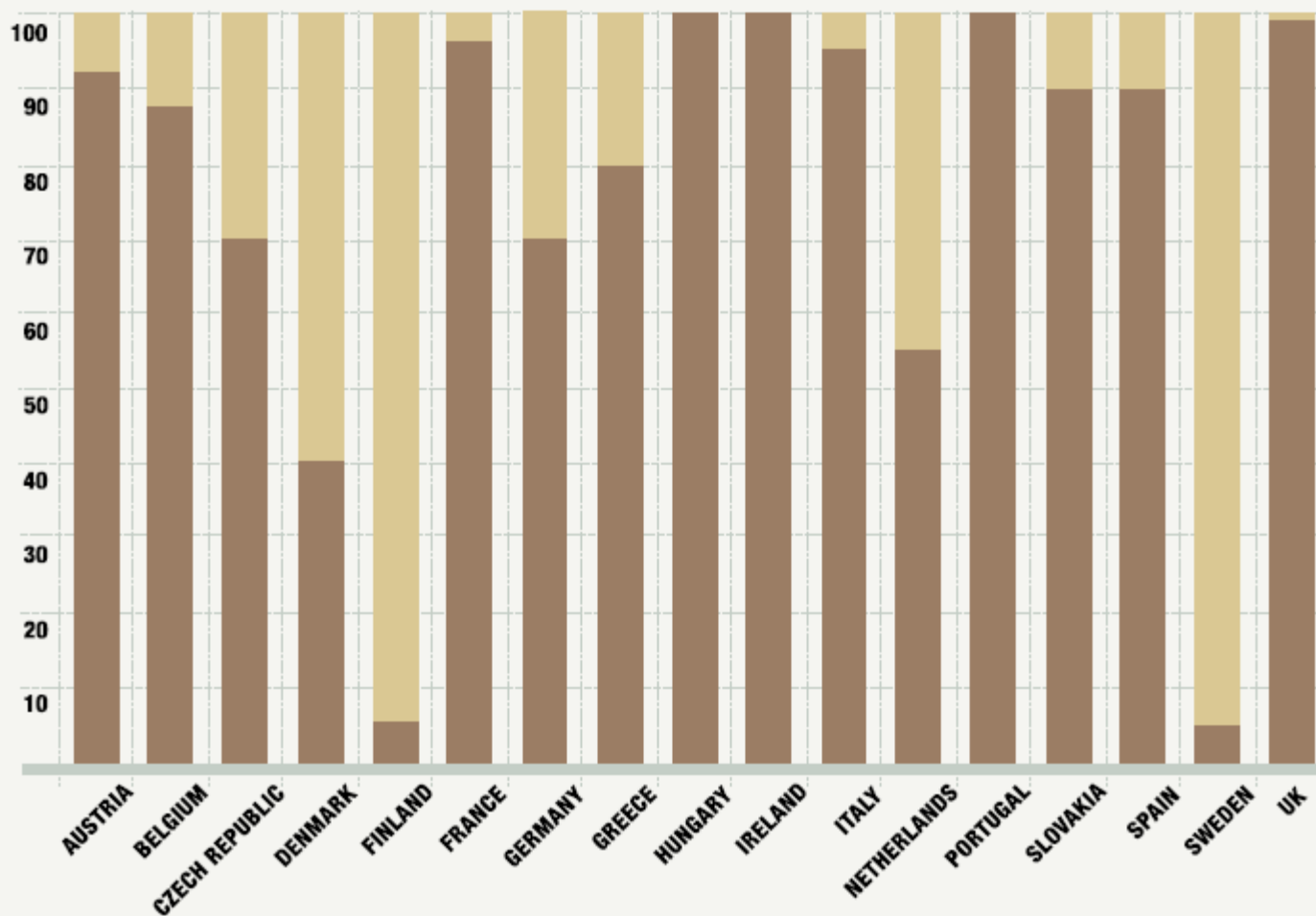
# Regular Eggs

## Egg shell colour - Europe (17)



BROWN AND WHITE RATIO EU

% BROWN % WHITE







## Shell colour

- Brown eggs perceived
  - more nutritious in Canada;
  - as nutritious as white eggs in the USA even when not the preferred type (Johnston et al., 2011);
- Differences within a country:
  - Argentina
  - USA

Free range eggs  
with deep brown  
coloured shells





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# Regular Eggs

## Shell colour





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# Regular Eggs








## Time of consumption

 Top of mind	Week-Day	Week-end
Cereals	32%	15%
Toast/Bagel/Bread	23%	13%
<b>EGGS</b>	<b>13%</b>	<b>34%</b>



 Top of mind	Week-Day	Week-end
Cereals	25%	18%
<b>EGGS</b>	<b>18%</b>	<b>33%</b>
Do not eat breakfast	13%	13%
Fruit	10%	8%
Croissant/Bagel/Toast	9%	7%

 53% of consumers agree with statement of eggs are a pleasure for breakfast on Sunday

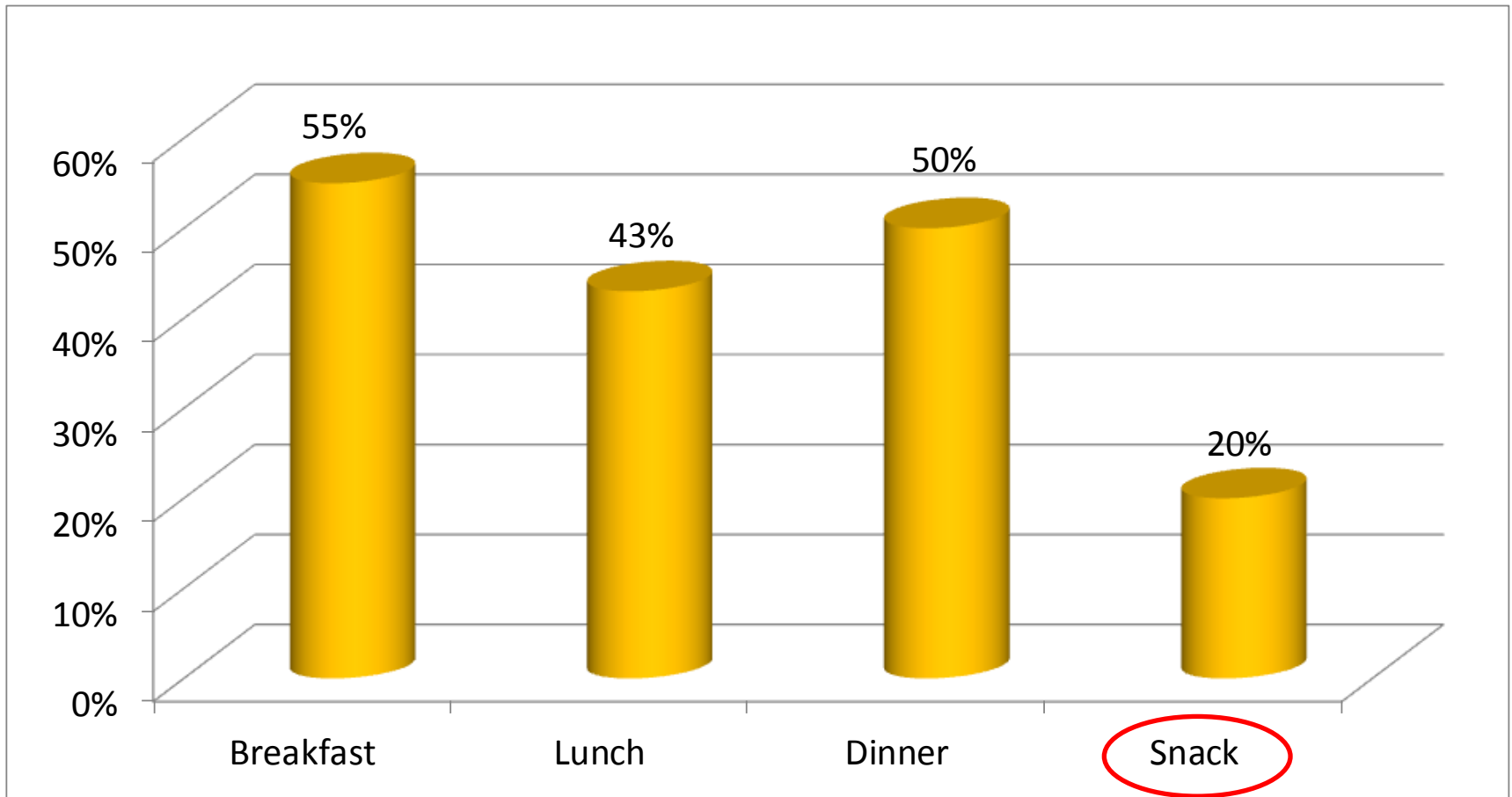


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# Regular Eggs

## Time of consumption

% that have consumed eggs over past 7 days





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# Regular Eggs

## The new Snack food

*An egg contains the same amount of calories as an apple;*

*And will help satisfy your hunger in the morning and the evening;*

CAPA (Argentina), 2011





## Frequency of consumption

EAT MORE EGGS THAN 3 YEARS AGO (15% OF RESPONDENTS)	EAT LESS EGGS THAN 3 YEARS AGO (30% OF RESPONDENTS)
18% Good source of protein	22% Cholesterol concerns
17% Healthy and nutritious	15% Fewer people at home
15% Easy to cook	15% Changed to other foods



EAT MORE EGGS THAN 3 YEARS AGO (24% OF RESPONDENTS)	EAT LESS EGGS THAN 3 YEARS AGO (15% OF RESPONDENTS)
16% Like eggs more now	19% Cholesterol concerns
14% Good source of protein	17% General health reasons
14% Quick, easy meal	8% Do not like them as much



## Ways to consume eggs



Skala, S. (1965)	Ways ever prepared or eaten eggs	AEB (2011)
96%	Scrambled eggs	89%
94%	Fried eggs	66%
93%	Hard boiled eggs	64%



Ways ever prepared or eaten eggs	% respondents
Scrambled eggs	74%
Fried eggs	69%
Hard boiled eggs	65%
Omelet	62%





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# Regular Eggs

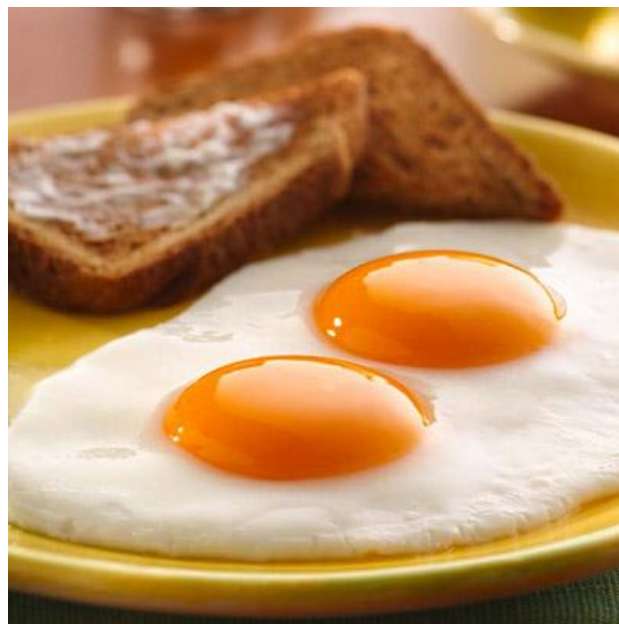


## Ways to consume eggs



*Week day favourite – 27%*

*Week-end favourite – 35%*





## Overall perceptions



Reasons for eating eggs	% respondents
Tasty	92%
Make a quick meal	90%
Versatile	84%
Good source of proteins	82%
Inexpensive meal	80%

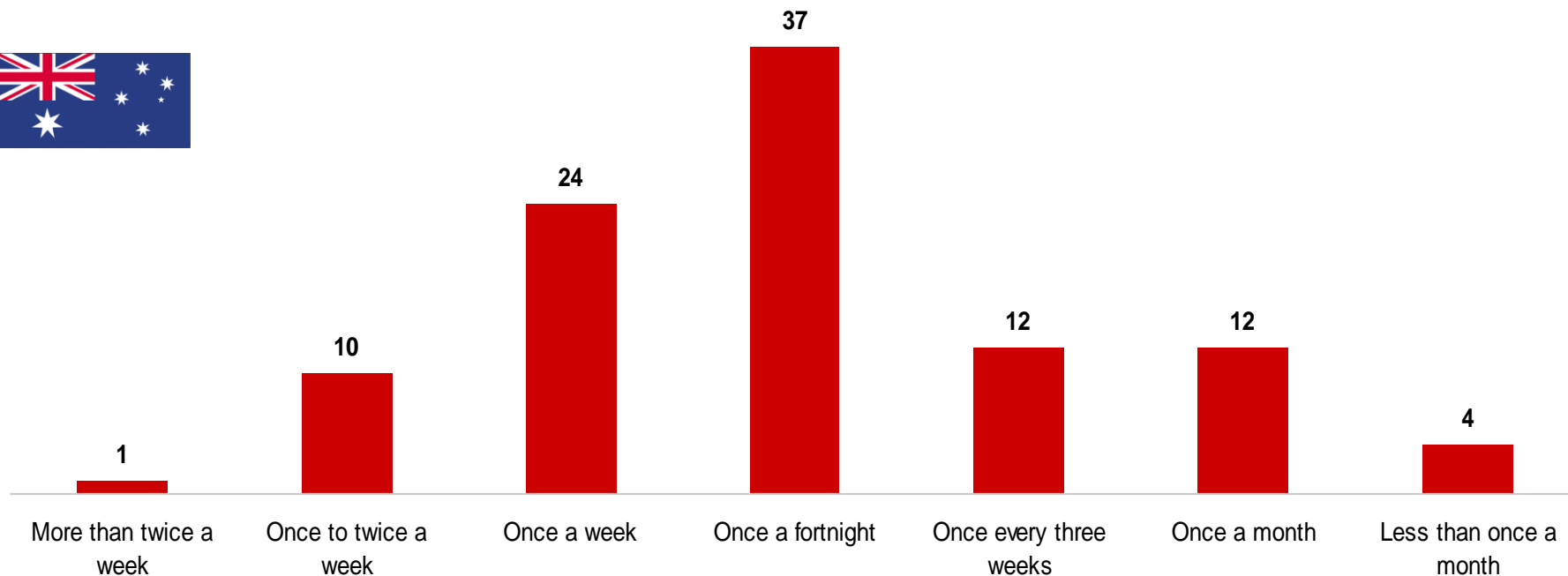
Agreement with statements about eggs	% respondents	Male	Female
Good source of protein	86%	83%	89%
Nutritious breakfast	84%	81%	86%
Good value	82%	79%	84%
Good for you	81%	77%	85%
Safe to eat	80%	79%	81%





## Frequency of purchase

HAVE YOU PERSONALLY PURCHASED FRESH EGGS IN THE LAST THREE MONTHS?



**86% OF RESPONDENTS HAD BOUGHT EGGS IN THE PAST THREE MONTHS, THE MOST COMMON FREQUENCY TO BUY EGGS IS ONCE EVERY 2 WEEKS**



## Buying decisions



	% Respondents		% Respondents
Price	54%	Good value	75%
Freshness	31%	Safe to eat	73%
Overall quality	28%	Source of proteins	72%



	Score (0-5)
Eggs not damaged	4.29
Freshness	3.83
Price	3.13

**51% OF RESPONDENTS IN AUSTRALIA HAD NO PREFERRED BRAND**  
**BRAND APPEAL IN THE NETHERLANDS SCORED ONLY 1.83**



## Eggs and Food safety

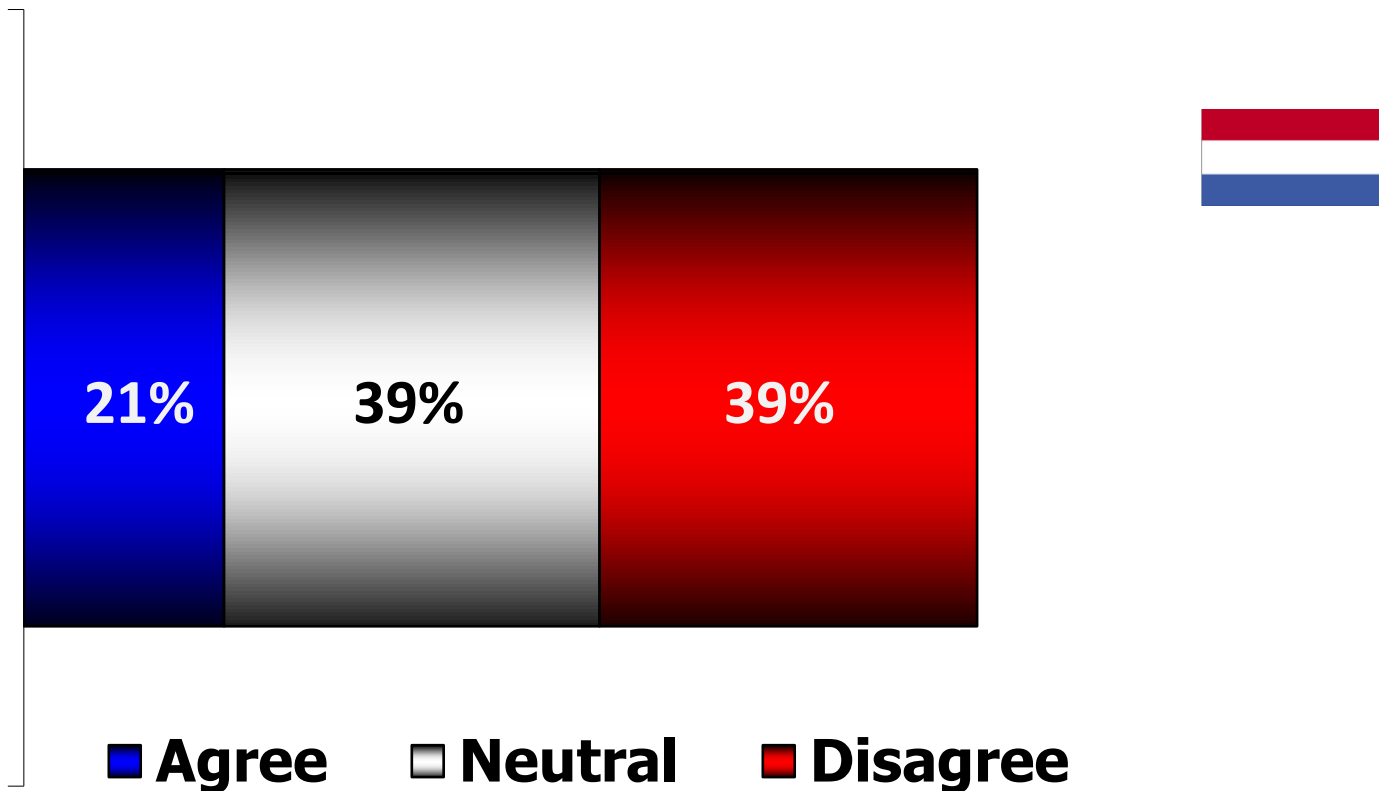
- Major recall in 2010 in the USA: 
  - 80% consumers agreed “Eggs are safe to eat”;
  - Ranked 6<sup>th</sup> out of 19 other statements;
  - Important buying decision – 73% respondents;
- Australian consumers: 
  - 6% consumers mentioned food safety concerns as a reason for not consuming more eggs;
  - Ranked 4<sup>th</sup> after “Forgot to use them”;



## Eggs and Food safety

Degree of agreement with statements about eggs

**Eating eggs  
means more  
risk of  
Salmonella  
poisoning**





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# Regular Eggs

## Eggs and health





## Eggs and health

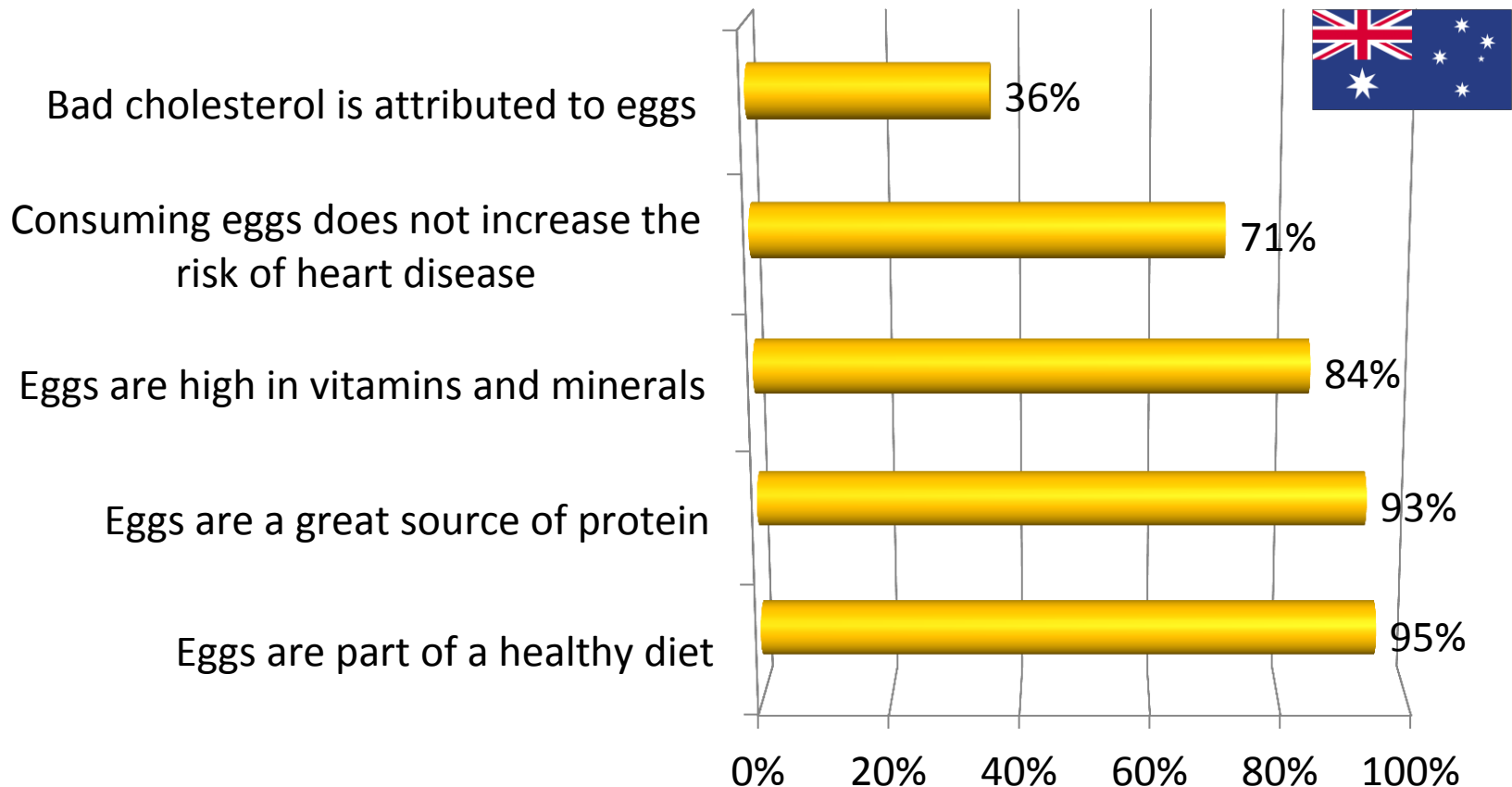
Country / Region	Nutritional claim based on % Daily value	Nbr. Claims allowed per 100 g
USA 	Good (10-19%); High ( $\geq 20\%$ )	9
Canada 	Source (5-14%); Good (15-24%); High ( $\geq 25\%$ )	18
Australia 	Source (10-24%); Good source ( $\geq 25\%$ )	11
Europe 	Source (15-29%); High ( $\geq 30\%$ )	10
Japan 	Contains; High	10





## Eggs and health

% Respondents in agreement with statements about eggs





## Eggs and health



Agreement with statements about eggs	% respondents	Male	Female
Good source of protein	86%	83%	89%
Good source of high quality protein	84%	81%	86%
Naturally nutrient-rich	77%	75%	78%
Lower in cholesterol than thought	64%	63%	66%
Good source of vitamin D	55%	55%	56%



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# Regular Eggs

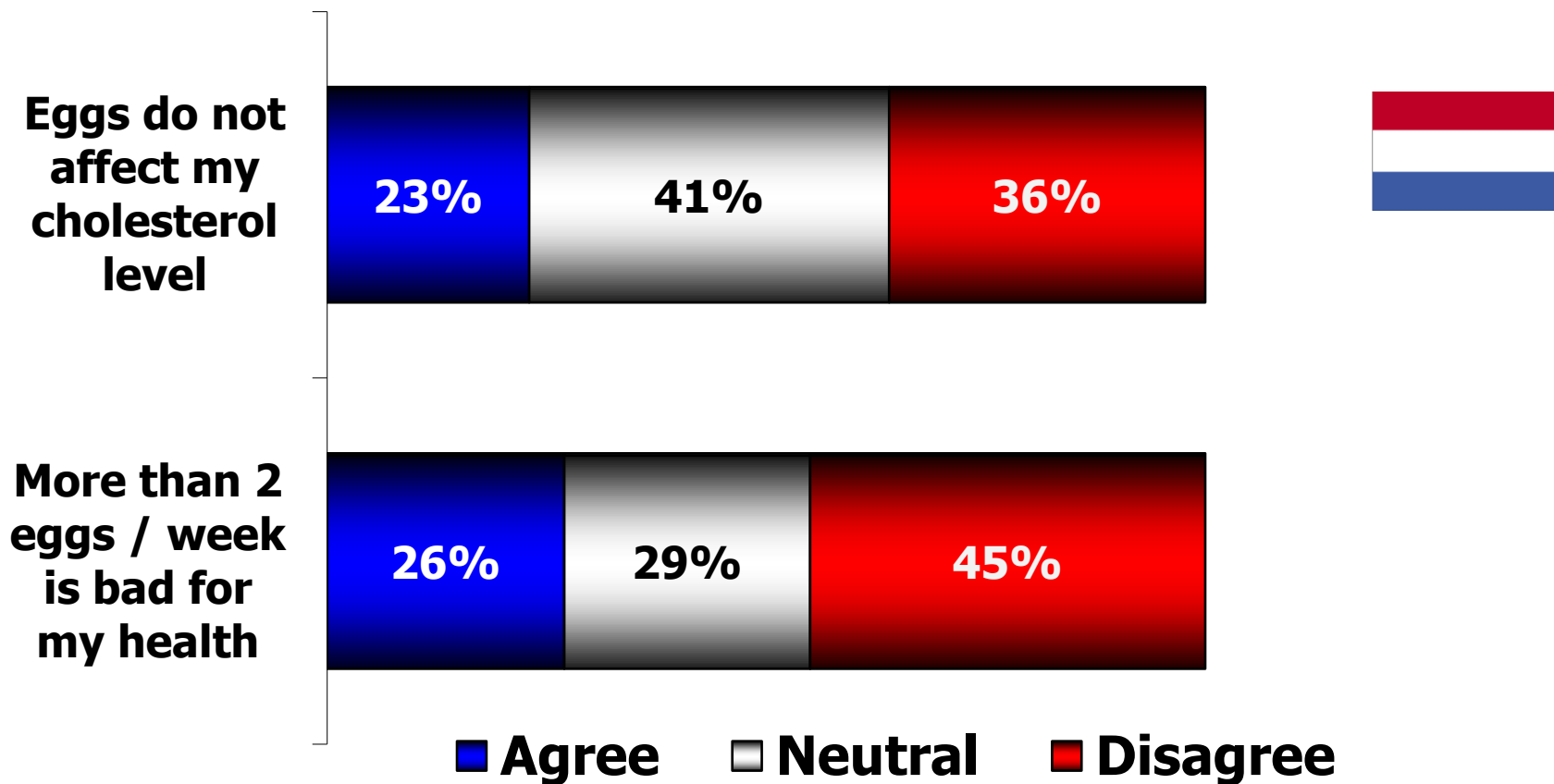


## Great source of protein



## Eggs and health

### Degree of agreement with statements about eggs





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# Specialty Eggs

## Definition of Specialty Eggs

- Laying hens fed a specific ration to enhance the levels of specific nutrients in the eggs = Functional eggs



- Hens housed in non-cage housing systems









## Consumer general acceptance

- Functional foods are not an homogeneous product category – different attitudes depending on the type of function foods – Urala et al., 2007. *Food Quality and Preference* 18: 1-12
- Acceptance of functional food dependent on the perception of the nutritional qualities of the base product [candy bar vs. yogurt] – Bech-Larsen et al., 2003. *Appetite* 40: 9-14
- Cholesterol issue with egg may still affect the overall perception of the nutritional quality of eggs



## Role of Price

- US study showed that the price was important for 40% of shoppers who also considered nutrition as important
  - Bowman, 2005. Nutrition Research 25: 281-293
-  69% of respondents reported a low price as their most important buying decision for foods, ahead of “high in nutrients” (58%);
-  54% of respondents reported price as top buying decision, ahead of “interest in health benefits from nutritionally-enhanced eggs” (11%);



## Role of knowledge and disbelief of information provided

- Health professionals are in a great position to influence the consumption of functional foods by their patients;
- Study in Sweden showed more skepticism and distrust about functional foods by physicians and nurses than by dieticians - Landstrom et al., 2007. *Appetite* 48: 241-247
- Lack of trust, interest and understanding of functional foods given as main explanations for not recommending functional foods to patients;





## Role of health professionals

- Health professionals are trusted by consumers;
- Educational programs have a positive impact on the intention to consume more functional foods (52-79%) –  
Pelletier et al., 2002. Journal of the American Dietetic Association 102: 1297-1300
- Complexity of the nutritional messages for omega-3 shell eggs;
- Long term benefits of the consumption of functional eggs (e.g. enrichment with lutein);



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# “Alternative Eggs”

## Eggs from alternative housing systems







Free-range eggs



Free-run / Barn eggs

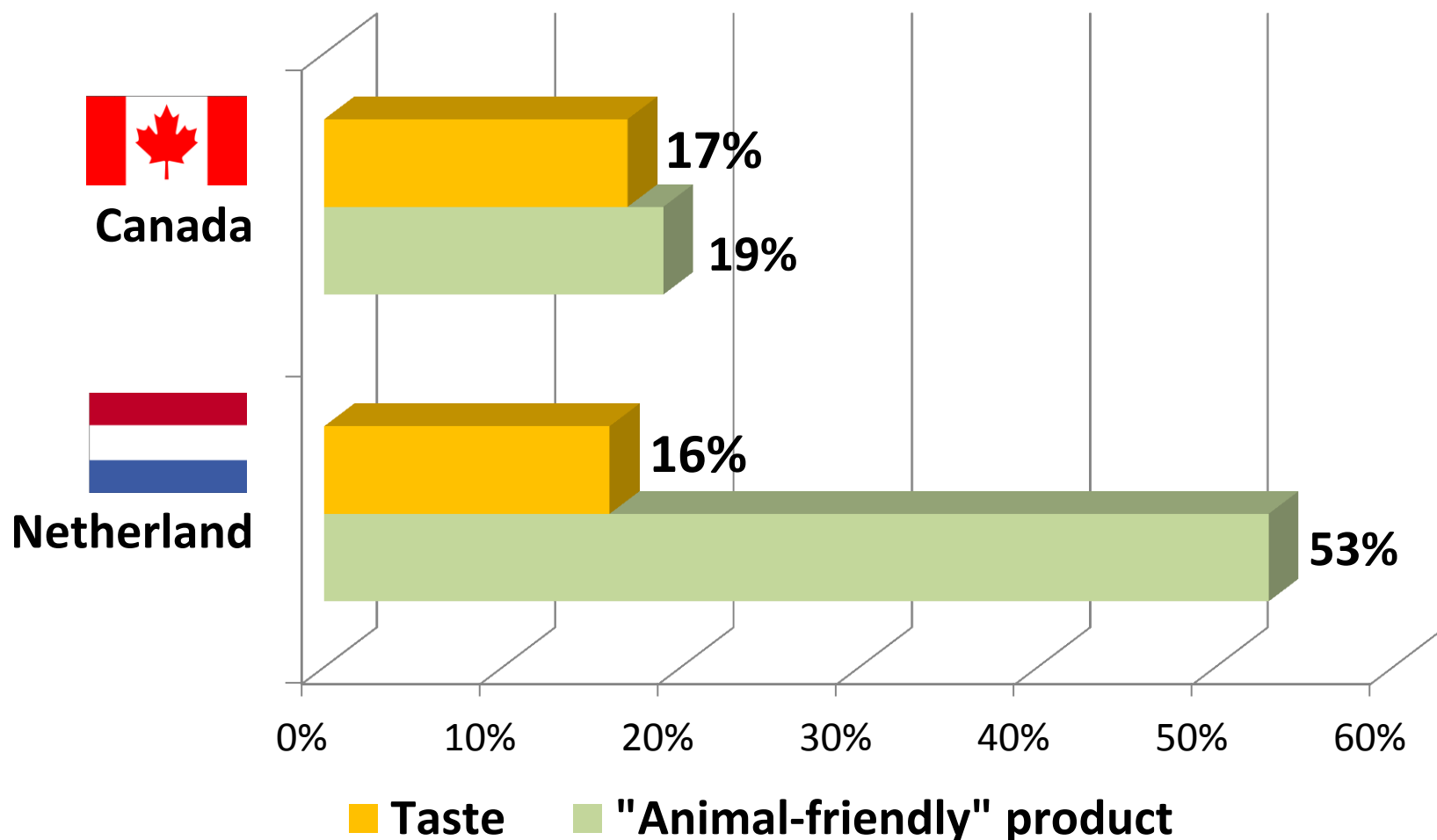


## Awareness of consumers

-  : Free range (49%); Organic (46%); Free-run (30%);
-  : Free-range (93%);
-  : 54% respondents “not sure where the eggs I bought come from”;
-  : 2-28% of respondents in 25 countries did not pay attention to the production systems; avg. on 25,000 respondents = 18% - Eurobarometer, 2005

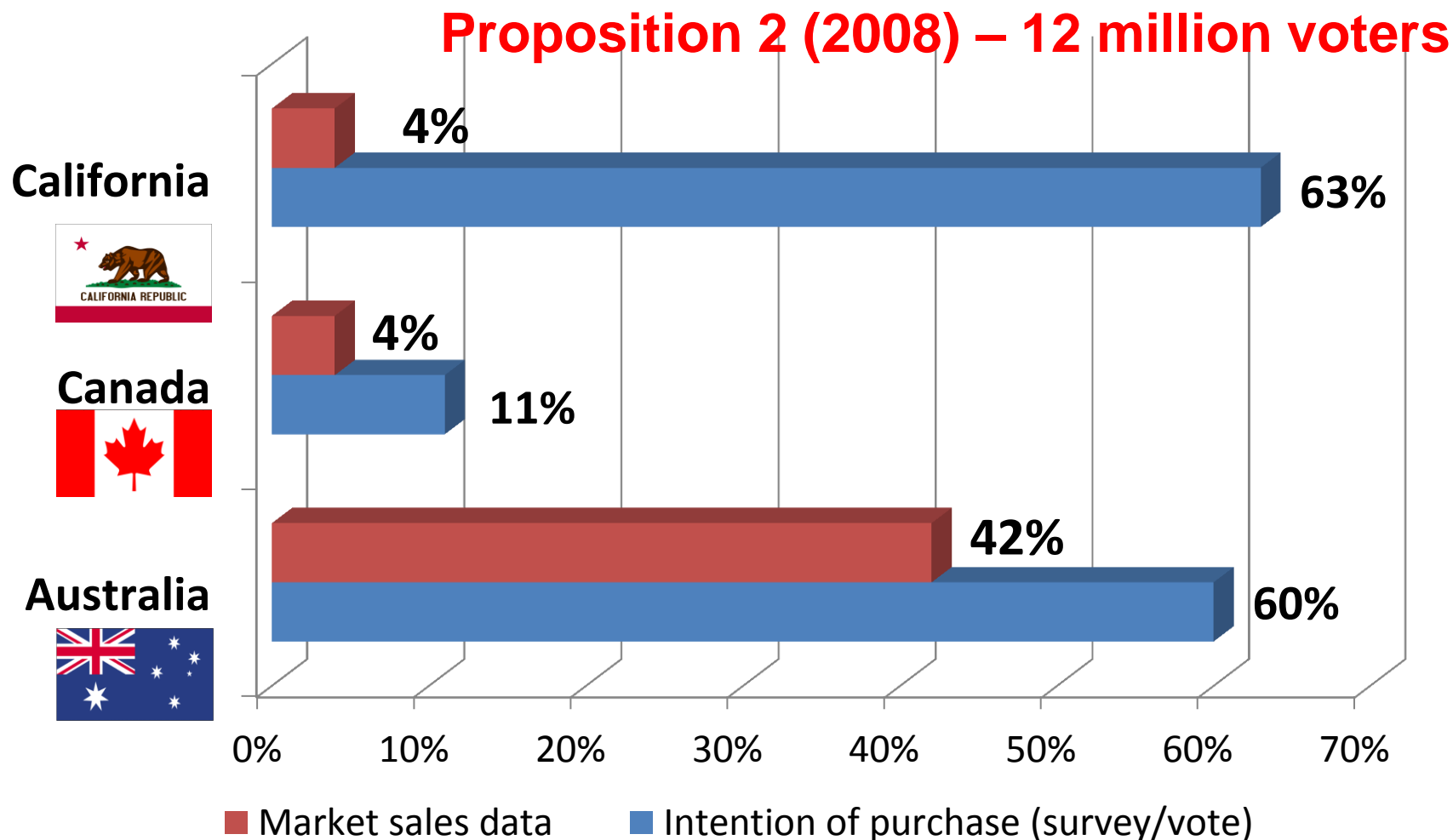


## Buying decisions – Free range eggs





## Buying patterns – Intention vs. Action







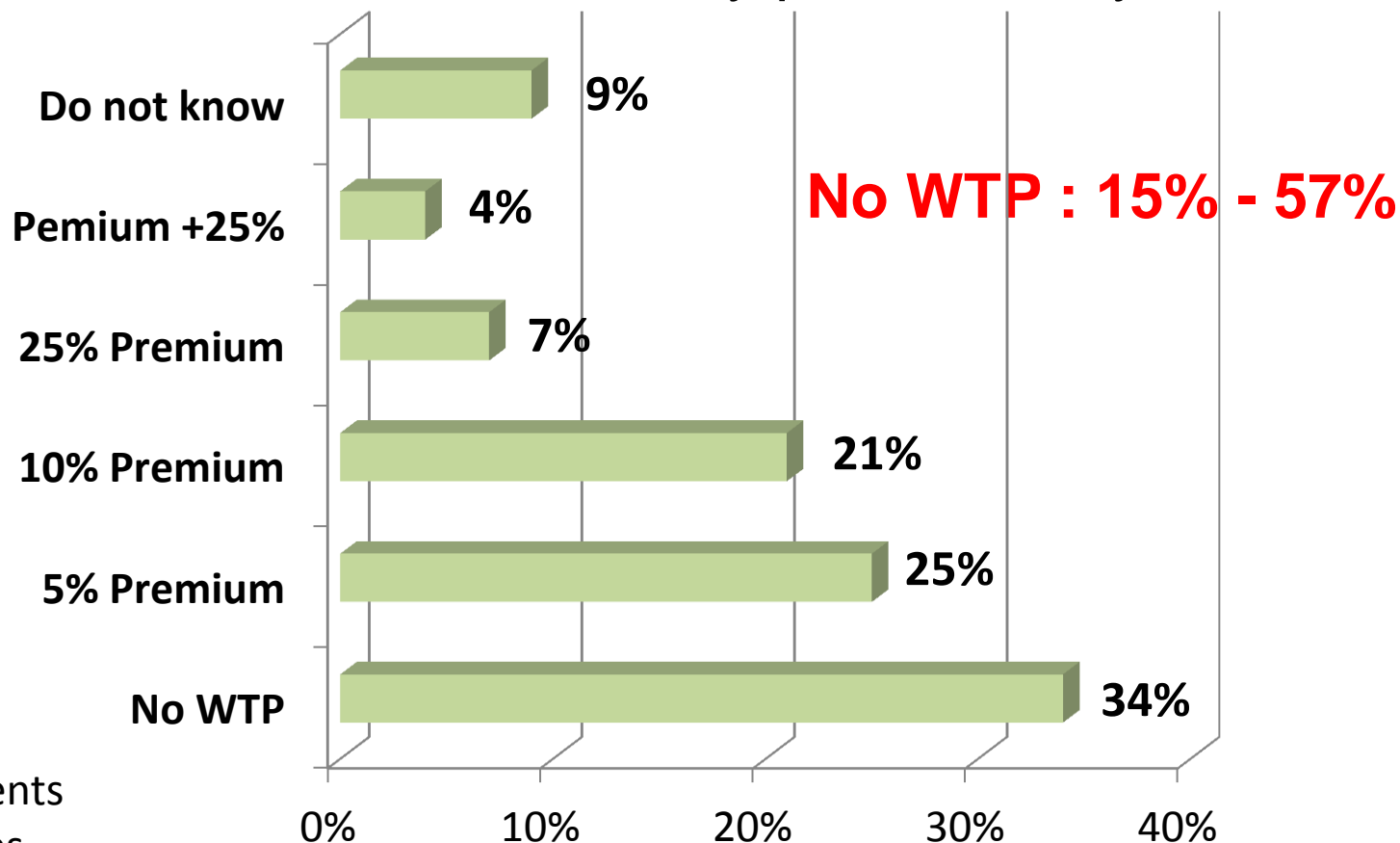
## Willingness to Pay (WTP) for enhanced welfare

- WTP = “the interest of consumers to give up other goods or services to improve the well-being of other species”;
- Findings recent meta-analysis of 24 studies - Lagerkvist et al. (2011) – European Review of Agricultural Economics 38: 55-78
  - WTP correlated positively to income and negatively to age of consumers;
  - WTP negatively correlated to legal regulations on AW;



## WTP – Eurobarometer 229 (2005)

What additional premium are you willing to pay for eggs sourced from an animal-friendly production system?



25,000 respondents  
from 25 countries



# “Alternative Eggs”

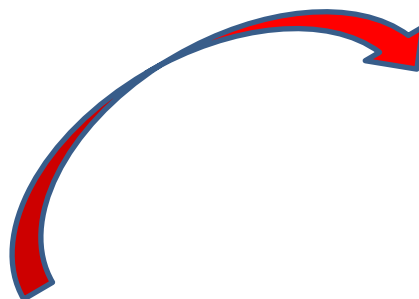
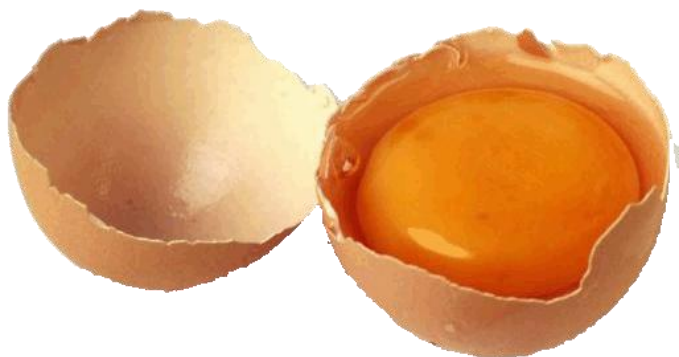
“While farm animal welfare is an emotional issue for many people, it is simultaneously something forgotten when shopping”





## Retail Liquid egg products

- Eggs are broken, pasteurized and sold as refrigerated or frozen products;
- Liquid eggs may contain egg white only, egg white + some yolk or whole eggs;
- Additional ingredients may be added to the mix;







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# Egg products

## Retail Liquid egg products







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# Egg products

## Use of Liquid egg products



- Convenient baking and cooking;
- Healthy cooking and recommendations from dietitians;
- Bodybuilders for high quality protein content;





## Use of Liquid egg products

Egg white based product with vegetables or cheese addressing key consumer needs:

- Convenience;
- Taste;
- Health;





## Liquid egg products as functional foods

- Liquid eggs can be enriched with various functional ingredients:
  - Omega 3;
  - Lutein;
  - Vitamins;







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# Egg products

## Hard boiled eggs

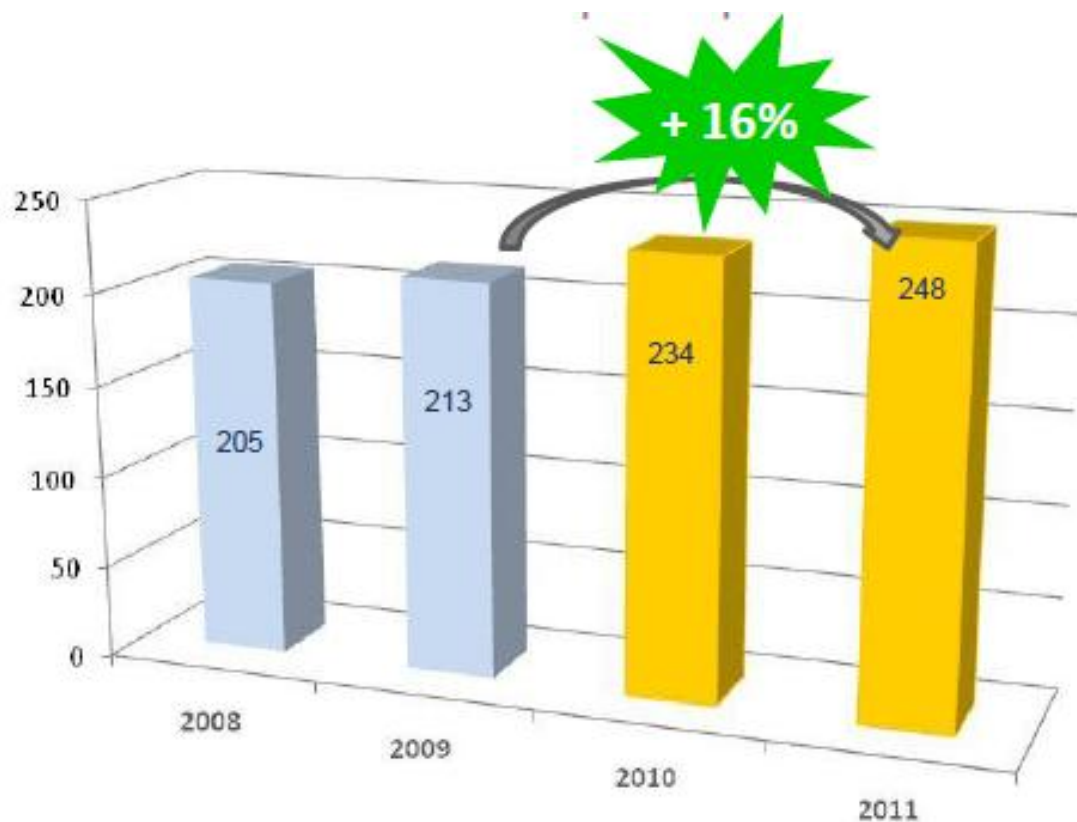




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# Egg products

## The new Snack food



2008	2009	2010	2011
205	213	234	248





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# Egg products

## Special egg products





# Conclusions

- Consumers enjoy eggs because they are tasty, safe to eat, easy to prepare and relatively cheap;
- While breakfast is dominant time for eggs, other opportunities to enjoy more eggs are being offered;
- In the mind of consumers, the relationship between egg consumption and health still very complex;
- Specialty eggs and egg products address new consumer needs and will continue to grow;
- Price will continue to be the single most prevalent buying decision for eggs;



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