



Europeans on chocolate - Trends in chocolate

Press conference, January 29, 2007





Agenda

- | | | |
|-------|--|---|
| 13h00 | Barry Callebaut:
Driven by innovation, ahead of trends | Ann Dhoedt
Marketing Manager
Food Manufacturers,
Barry Callebaut |
| 13h10 | Presentation European survey:
Europeans on chocolate - behaviour and trends | Presentation IPSOS
Europe
Ann Maes |
| 13h30 | Trends in chocolate:
A growing consumer demand for 'health enhancing' chocolate | Hans Vriens,
Chief Innovation
Officer
Barry Callebaut |
| 14h00 | Q&A session | |



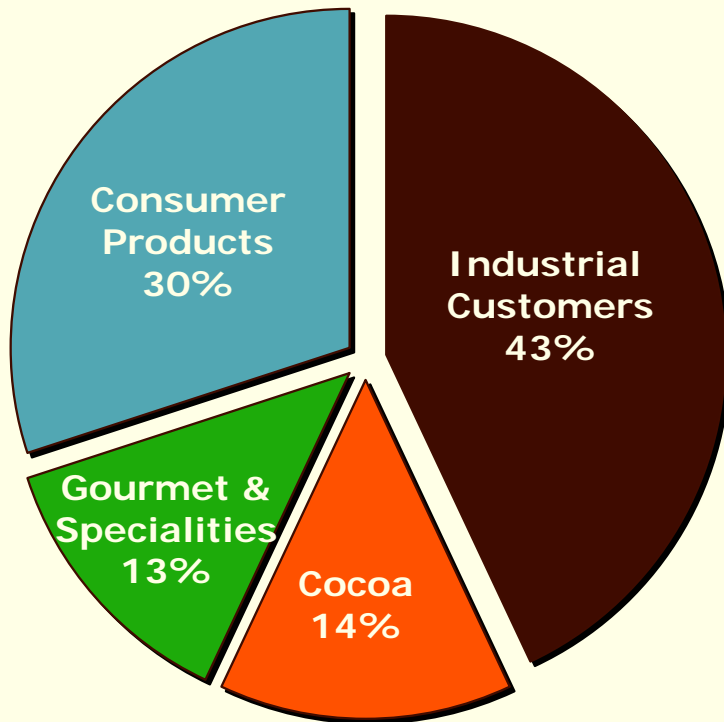
Barry Callebaut:
Driven by innovation - ahead
of consumer trends

Barry Callebaut: Worldwide leader in chocolate



1 out of 4
chocolate products
worldwide
are made of or contain
Barry Callebaut chocolate

Barry Callebaut is uniquely positioned



Fiscal year 2005/06
Turnover CHF 4,3 Mrd

- ▶ We have an **excellent vertical integration from the bean to the shelf** and a global presence
- ▶ We supply the entire **foodstuff industry**
- ▶ We train **500 users** per week
- ▶ We offer **Swiss, Belgian and French** chocolate from a single source
- ▶ We have around 1650 recipes **at our disposal**
- ▶ We achieve **30% of our sales** with products that have been **developed over the last 3 years**
- ▶ We offer the **best chocolate** in the world, produced by the **best chocolatiers** in the world

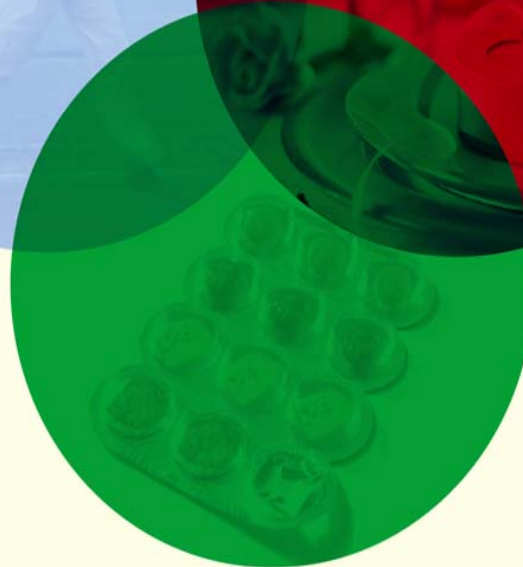
Barry Callebaut's 3 pillars of innovation



health &
wellbeing



indulgence &
taste
experience



convenience

Health is on the consumers radar



Health



Well being

Chocolate is a 'natural winner'

- Cacao = a powerful source of beneficial elements to your health
- Low glycaemic index
- No additives or preservatives

Cocoa nibs, honey chocolate

Bio chocolate and powder



Food -

Less sugar

Chocolate (D,M,W) without added sugar, sugar free (maltitol)

Chocolate (D,M) naturally sugar reduced (-30%)

Lactose free chocolate



Food +

Enriched with

Chocolate enriched with fibres

ACTICOA™



The consumer is after 'new experiences'



Experience



Fun

Coloured and aromatised

- Orange, lemon, strawberry, cappuccino, caramel
- Green, yellow, blue

Decoration

- Vermicelli, splitter, chunk, curl



Added value

Top 3 flavours

hazelnut, almond & caramel

- Praliné filling / Gianduja
- Caramel filling

More premium & adult flavours

- Crème à la carte: cream, chocolate & alcohol
- Creme dell'Artigiano

Extra texture

- Brésilienne
- Pailleté feuilletine
- Granella, blossom



Authenticity

Multicultural society : ethnic en exotic influences

- Origin chocolates

Milk: Java, Melanesia, Mexico

Dark: Arriba, Ecuador, Santo Domingo, Sao Thomé, Tanzania, Papua New Guinea, Ghana, Madagascar

- Edelblend
- Cocoa nibs

Ethical values and fair trade

- Fair trade chocolate

Consumers want convenience



Convenience



On the move

Grab 'n go
Dashbord dining

Dark chocolate is
more heat resistant



Portion size

Daily dosis
Single portion

More single people
More people on a diet
Other preferences



Saving time

Ready-made
All-in-one

Cacao powder
Chocolate drops
(readymade mixes)

Readymade sauce
'Bakvaste' Fillings



Consumers chocolate eating habits

Results of the Barry Callebaut European customer insight research

IPSOS



DON QUIXOTE AND HIS FAITHFUL COMPANION SANCHO PANZA?
OR DON QUIXOTE WITHOUT HIS FAITHFUL COMPANION SANCHO PANZA?



THE INGREDIENTS FOR A HEARTY STEW?
THE PORTRAIT OF A GARDENER?



A KID'S MESSY ROOM?
OR A PORTRAIT OF CHE GUEVARA?

Europeans on Chocolate



Ipsos ASI
The Advertising Research Company



I. THE SURVEY

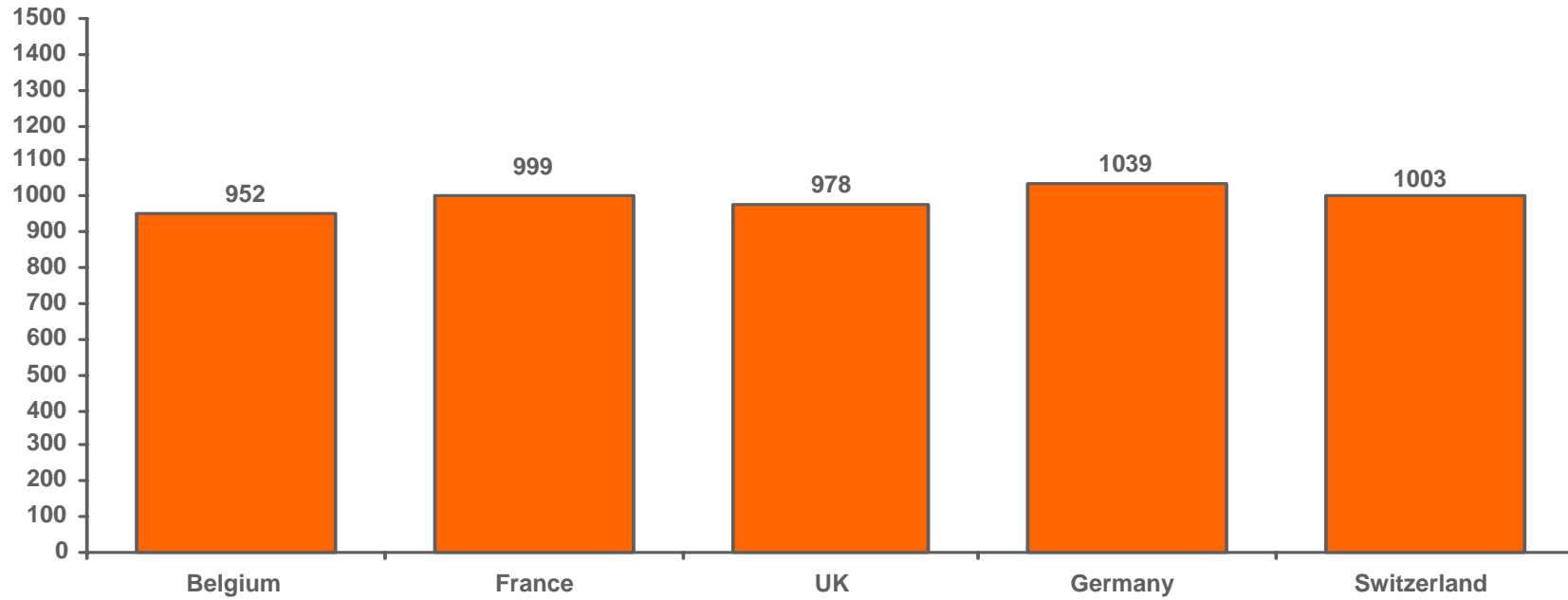


METHODOLOGY

5 countries participated to the survey:

- Face to face in Belgium, France, The UK, Germany
- By telephone in Switzerland

The survey was conducted between 04/11/06 and 14/12/06

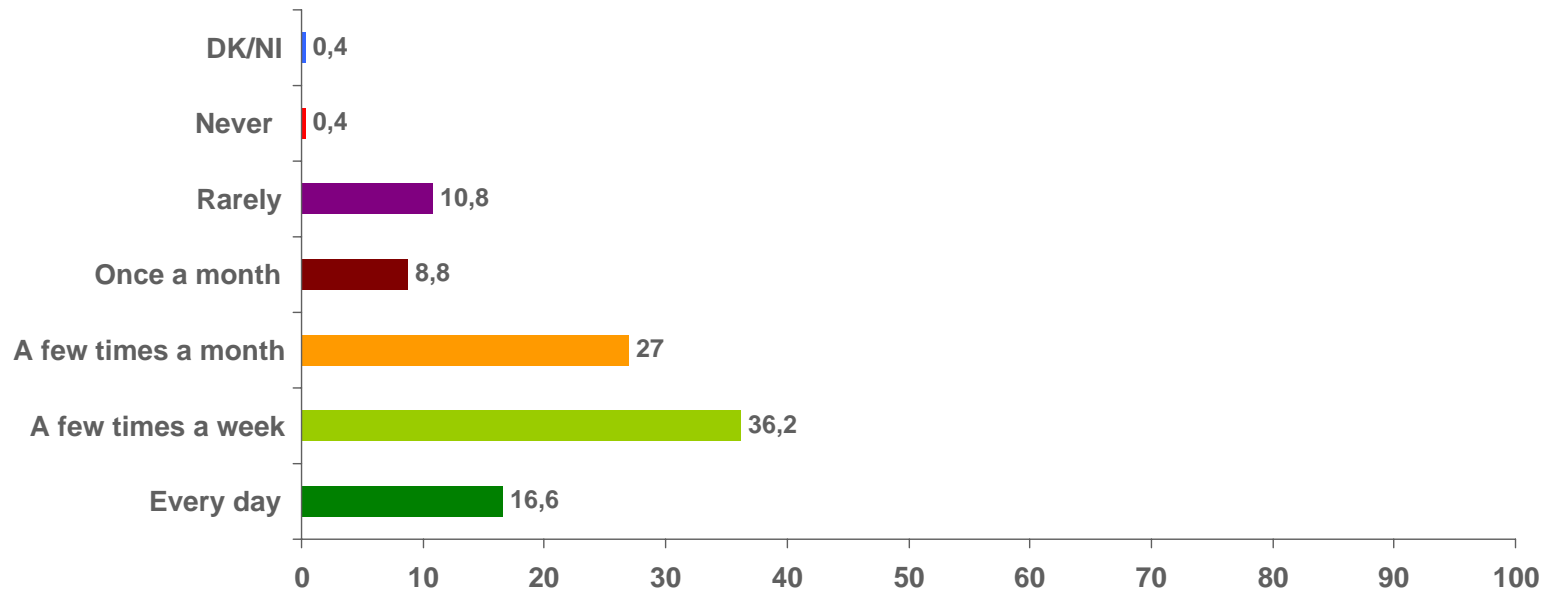




II. RESULTS

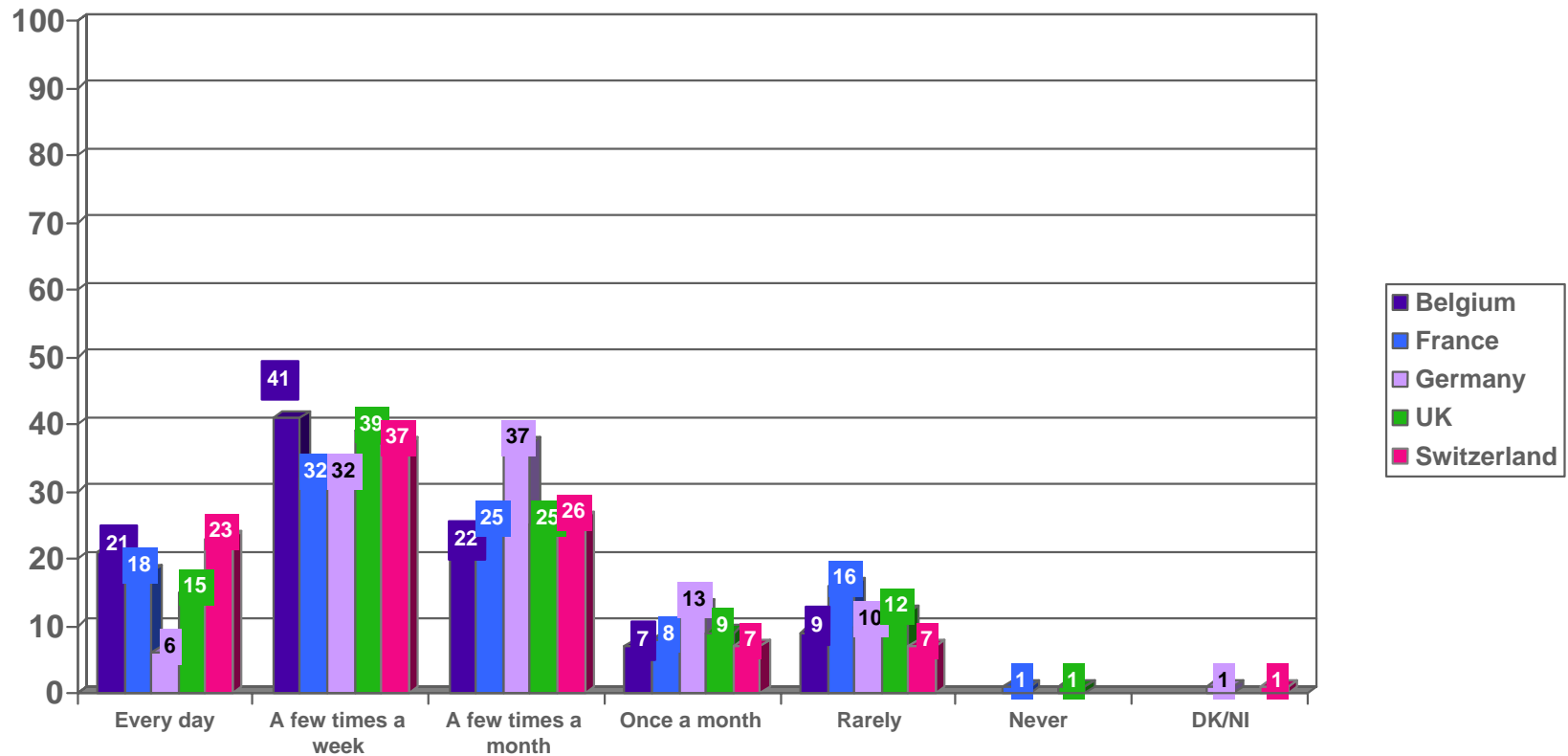
More than 1 European out of 2 (52,8%) eats chocolate at least a few times a week

How often do you eat chocolate?



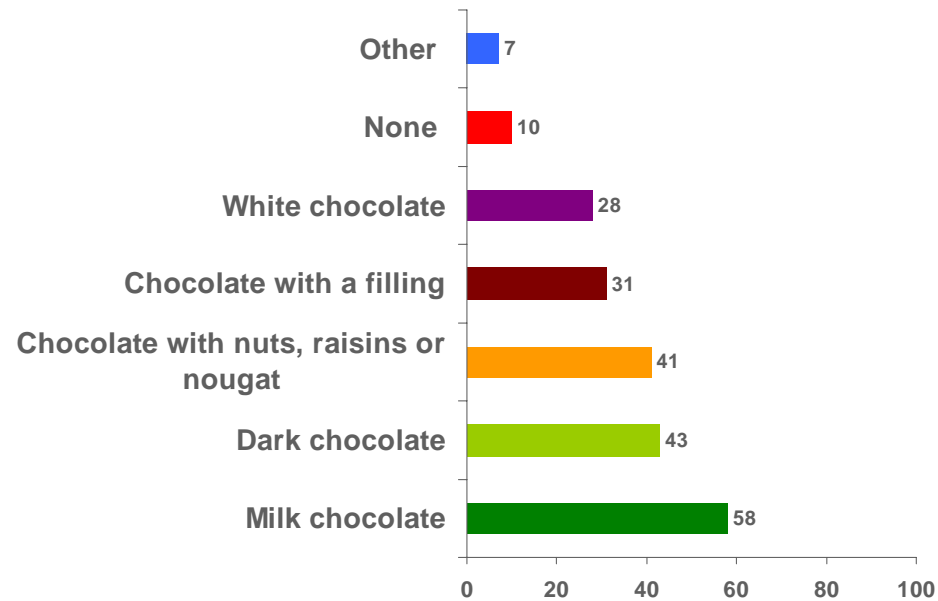
Belgians are avid, regular consumers of chocolate - about 62% eats chocolate a few times a week - followed by the Swiss consumers (60%)

How often do you eat chocolate?



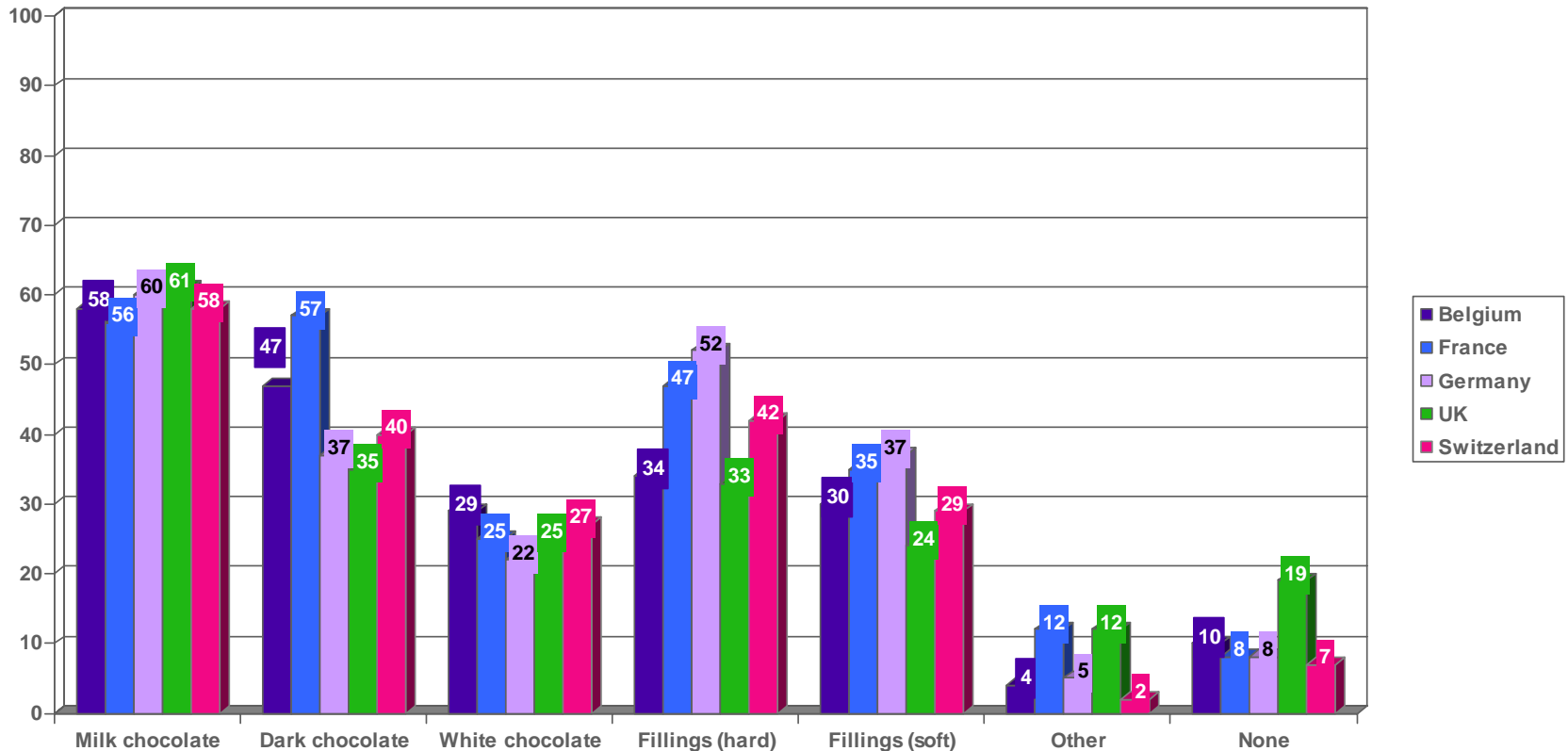
Europeans love milk chocolate and hard fillings such as nuts, raisins and nougat
Dark chocolate is increasingly popular

Tell us something about the chocolate you eat



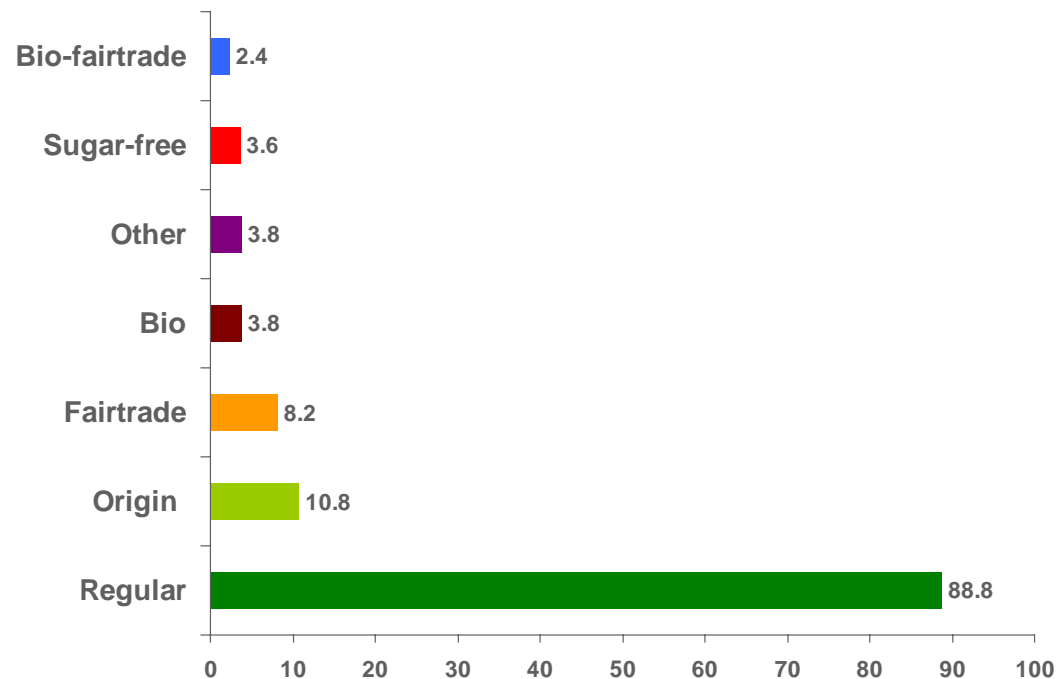
French consumers eat at least 10% more dark chocolate than any European consumer -
 Germans eat the most chocolate with hard and soft fillings

Tell us something about the chocolate you eat



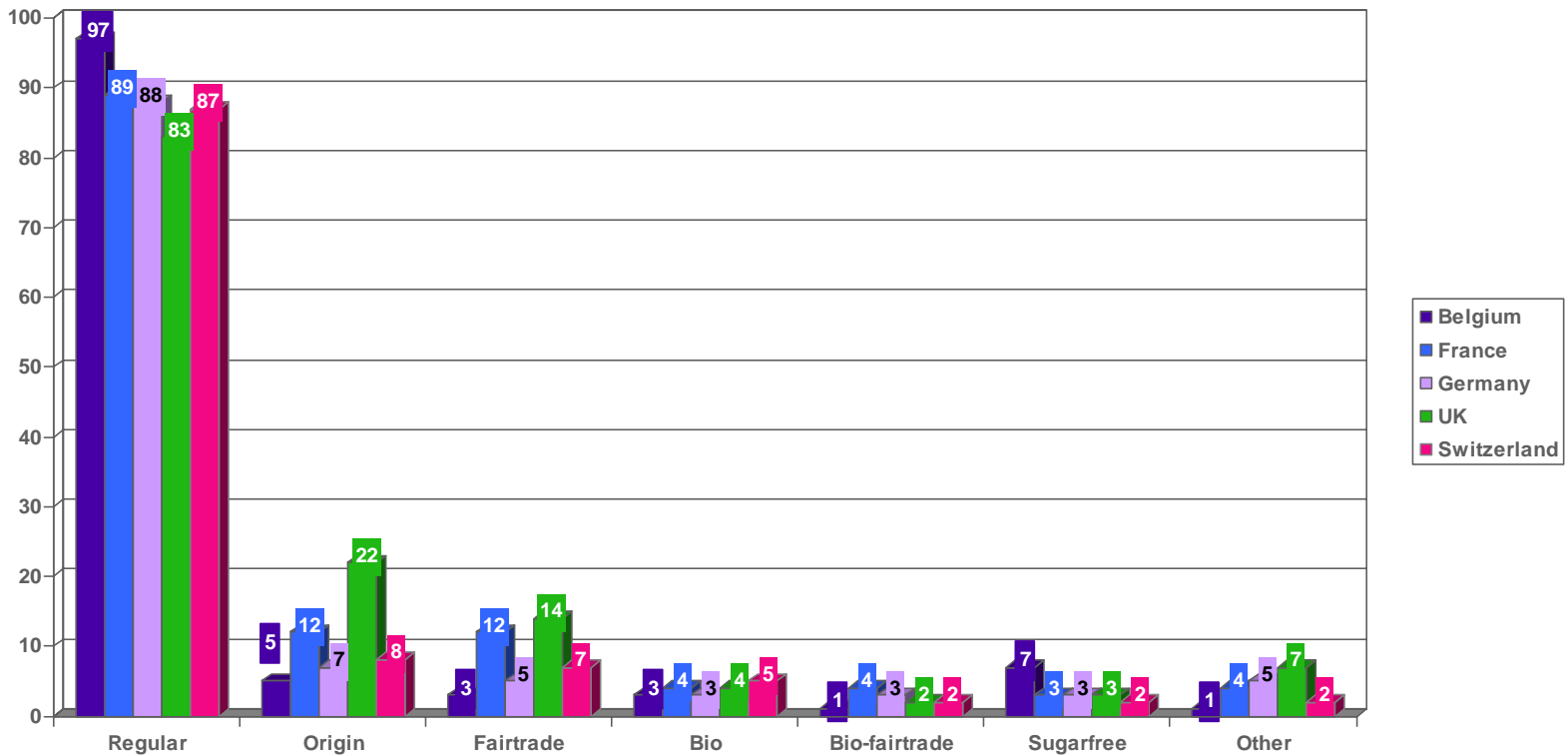
Regular chocolate remains the most popular chocolate. Fairtrade and origin chocolate are gaining popularity.

What kind of chocolate do you eat?



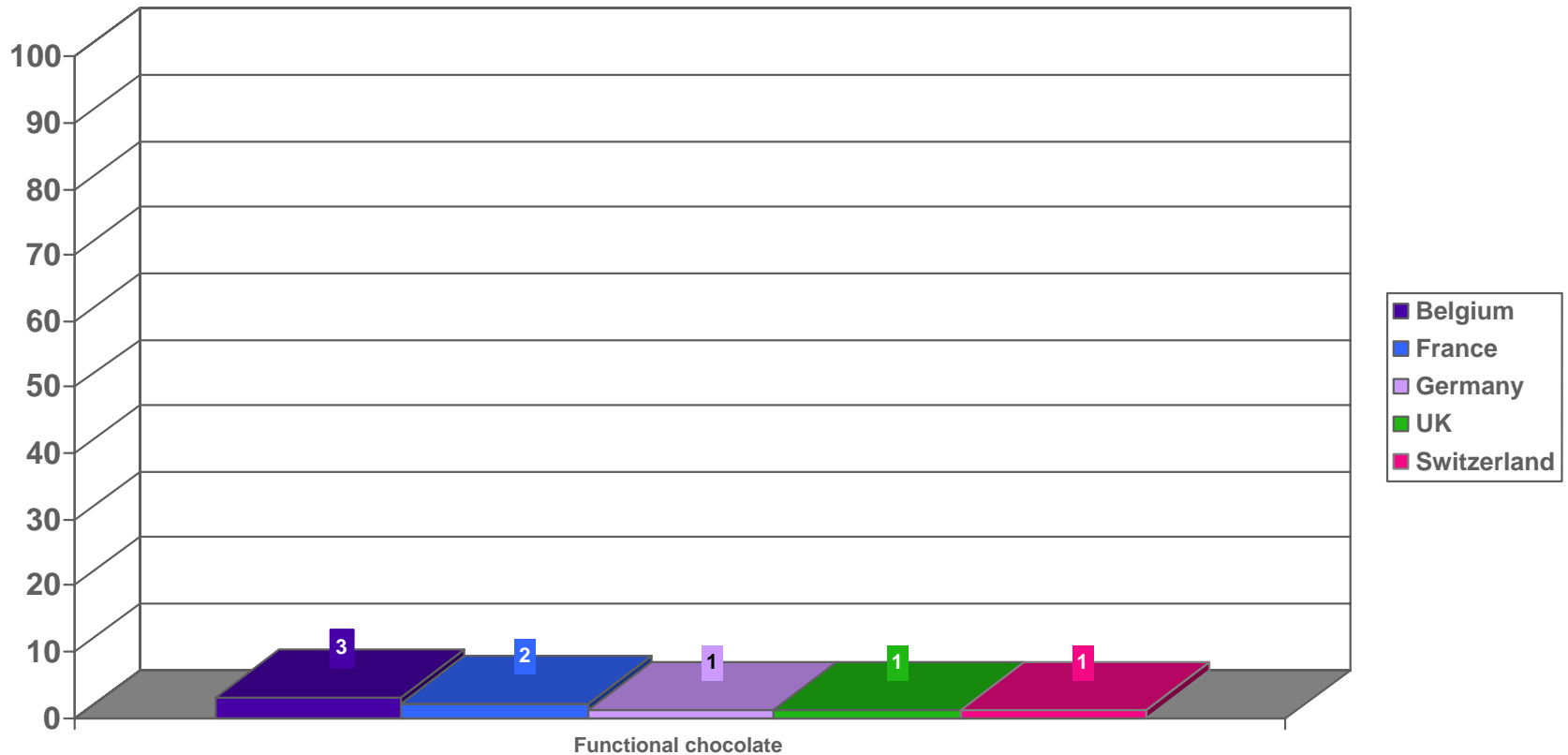
The UK and France innovate the fastest: origin and fair-trade chocolate more popular than in other European countries

What kind of chocolate do you eat?



Functional chocolate has not found its way to the consumers - yet

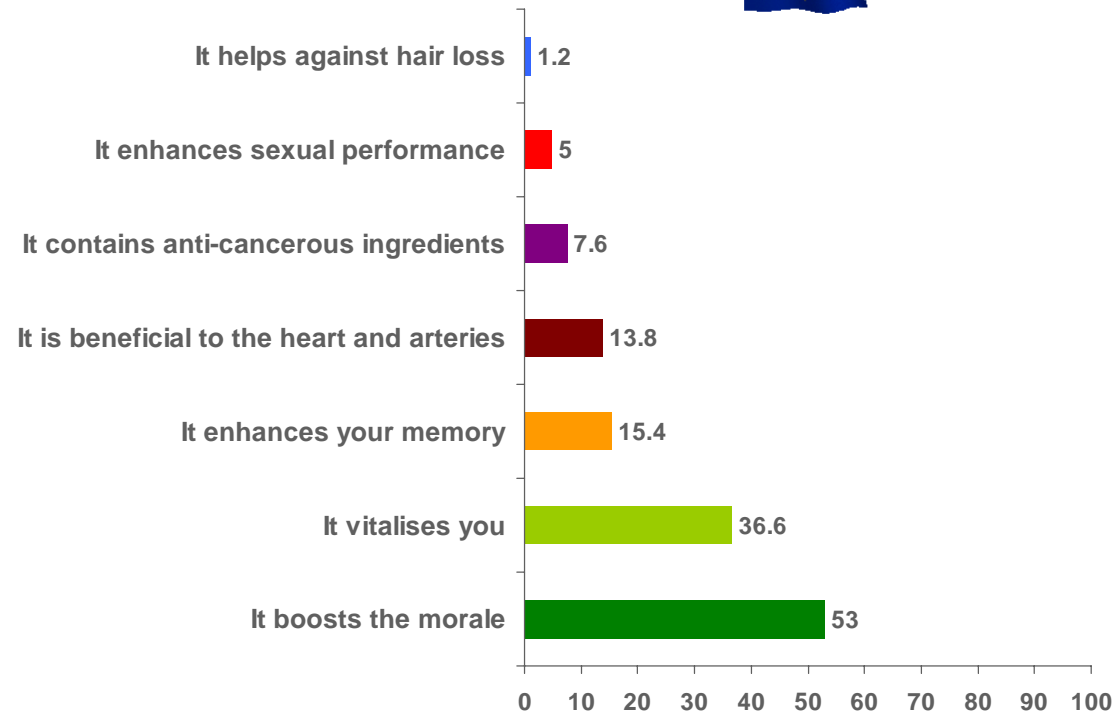
Do you eat functional chocolate?



KNOWLEDGE AND PERCEPTIONS

Europeans firmly believe that chocolate makes us feel good and that it vitalises us

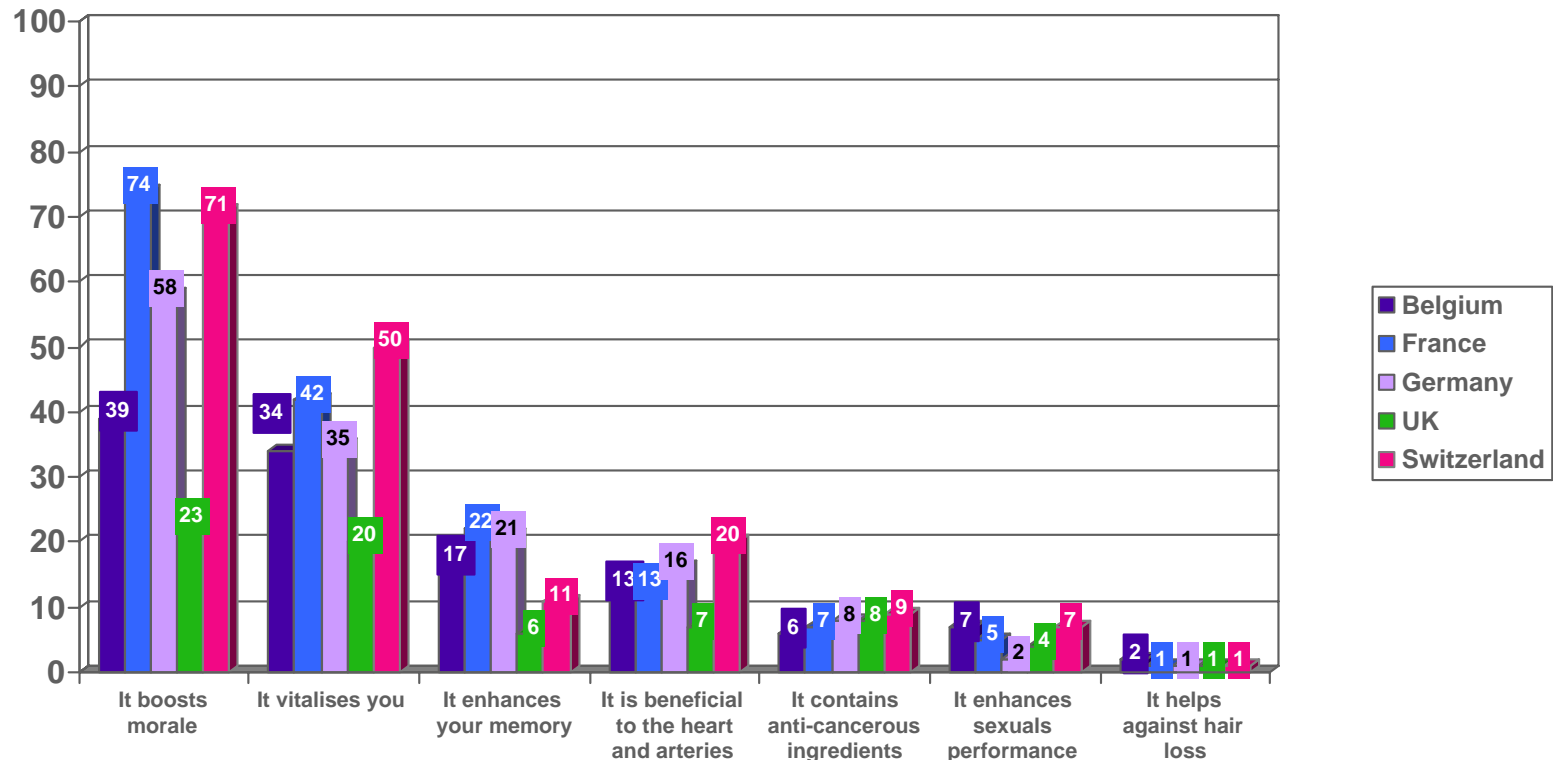
Apart from being delicious, cocoa and chocolate have been proven to be good for your health. Which health claims are true in your opinion?



KNOWLEDGE AND PERCEPTIONS

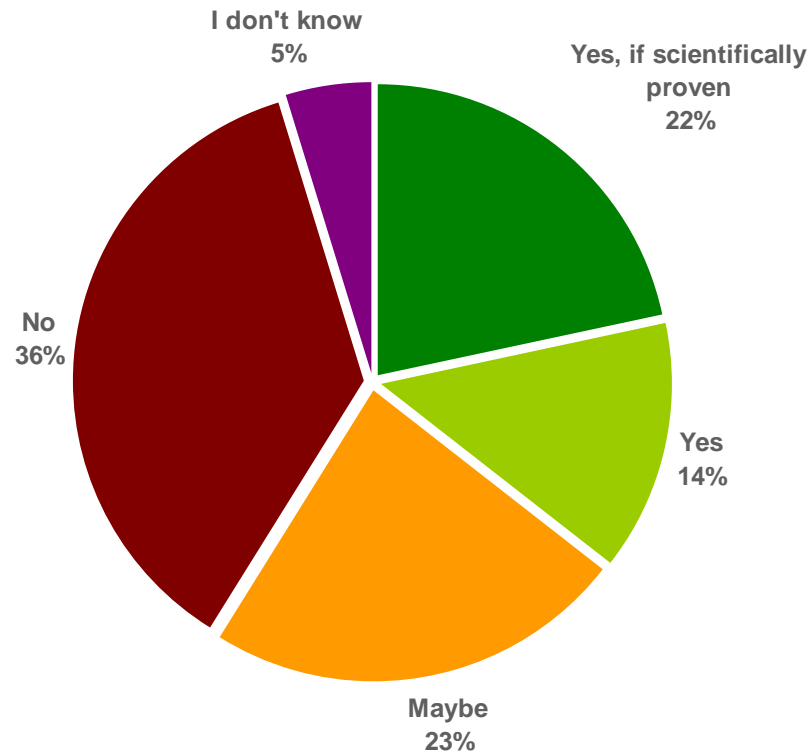
Swiss and French consumers believe more in health claims than any other European - British consumers are the most sceptical

Apart from being delicious, cocoa and chocolate have been proven to be good for your health. Which health claims are true in your opinion?



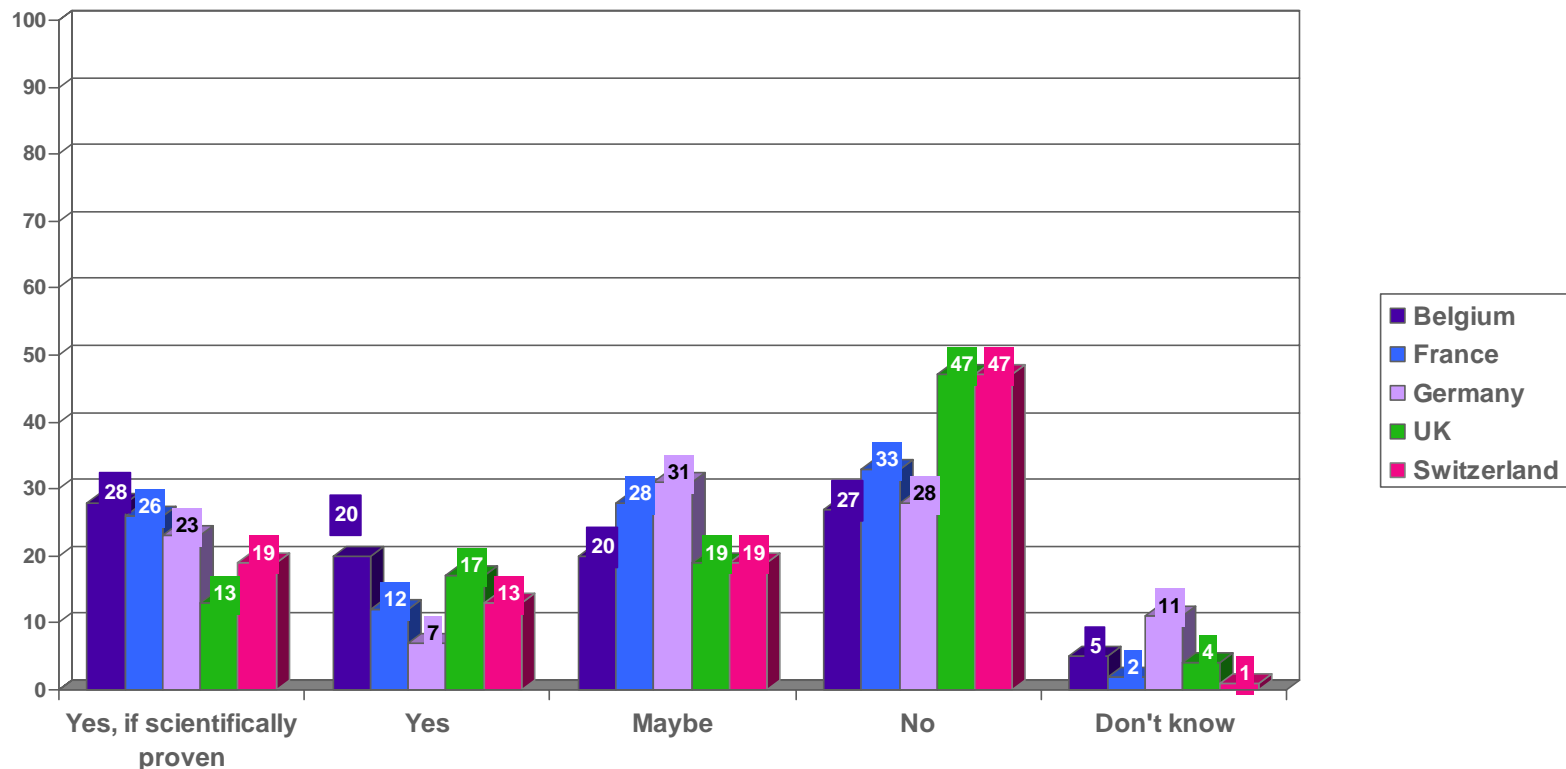
More than 1 European out of 3 (36%) would buy chocolate that promises health benefits.

Would you buy chocolate that promises health benefits?



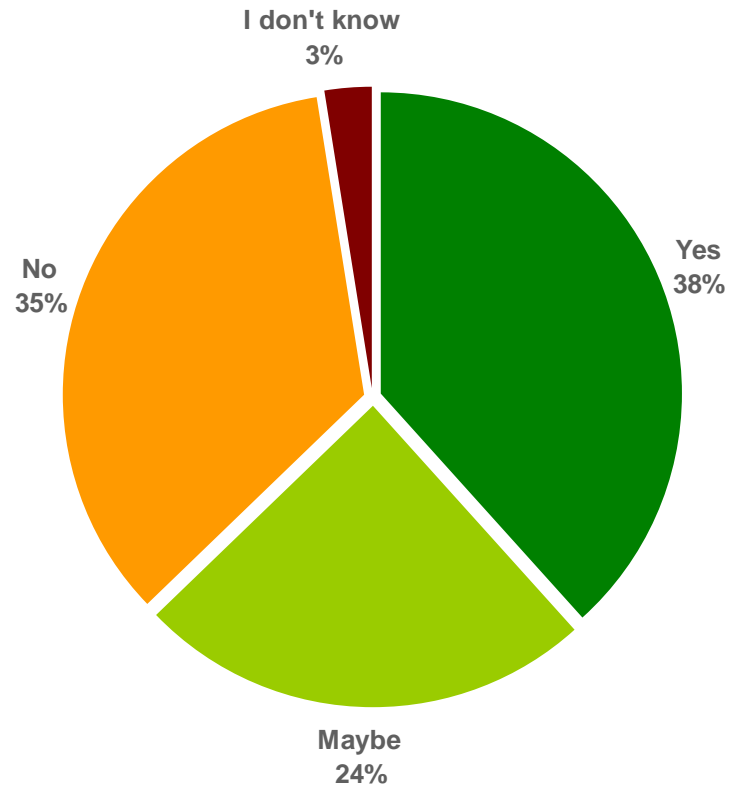
Belgian (46%) and French (36%) consumers are the most keen to buy chocolate that promises health benefits

Would you buy chocolate that promises health benefits?



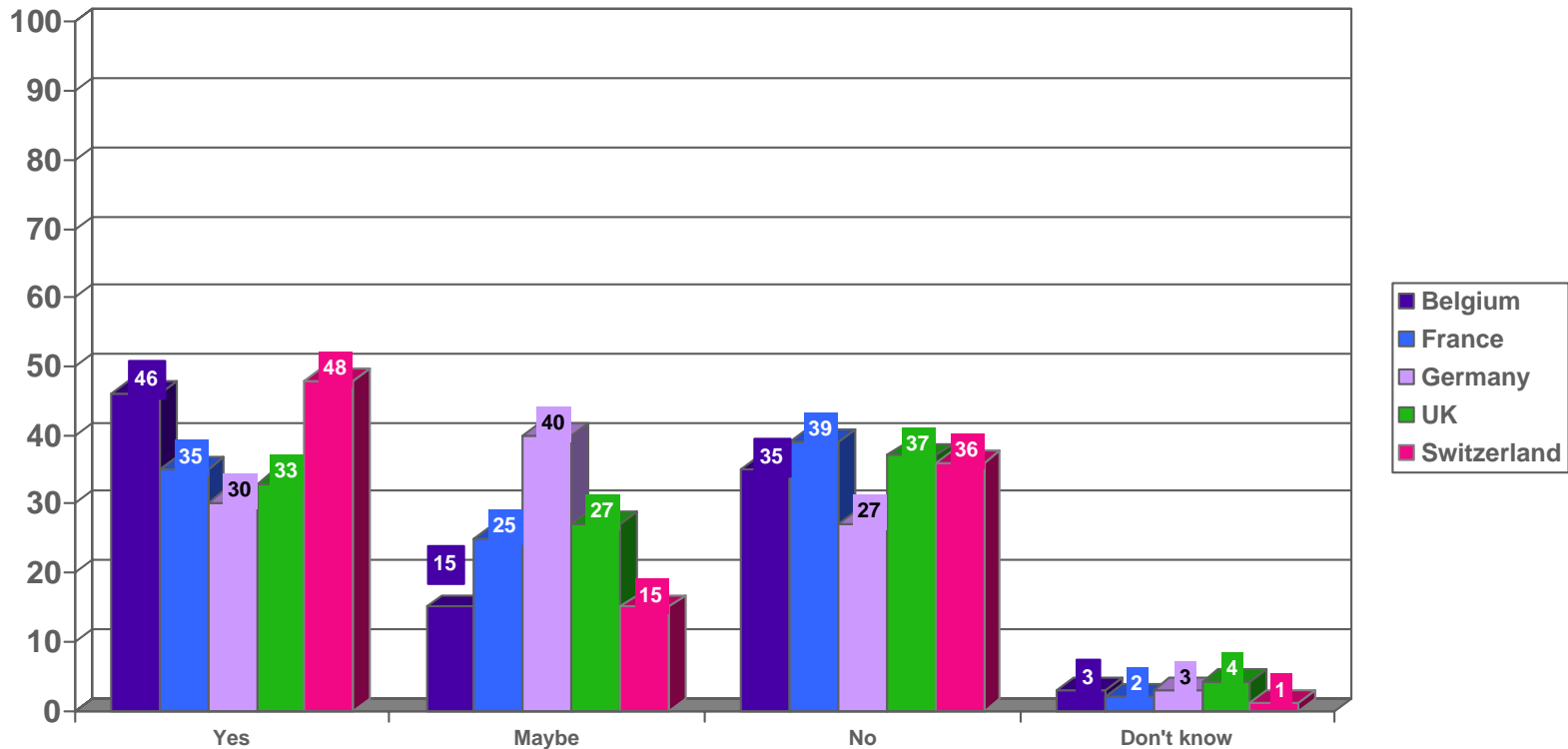
More than 1 European out of 3 (38%) would buy sugar-reduced chocolate

Today, it is possible to reduce the sugar content of chocolate without altering the delicious taste. Or to put it in another way: your chocolate would not change at all, only the sugar content would drop. Would you be interested in buying this sugar-reduced chocolate?



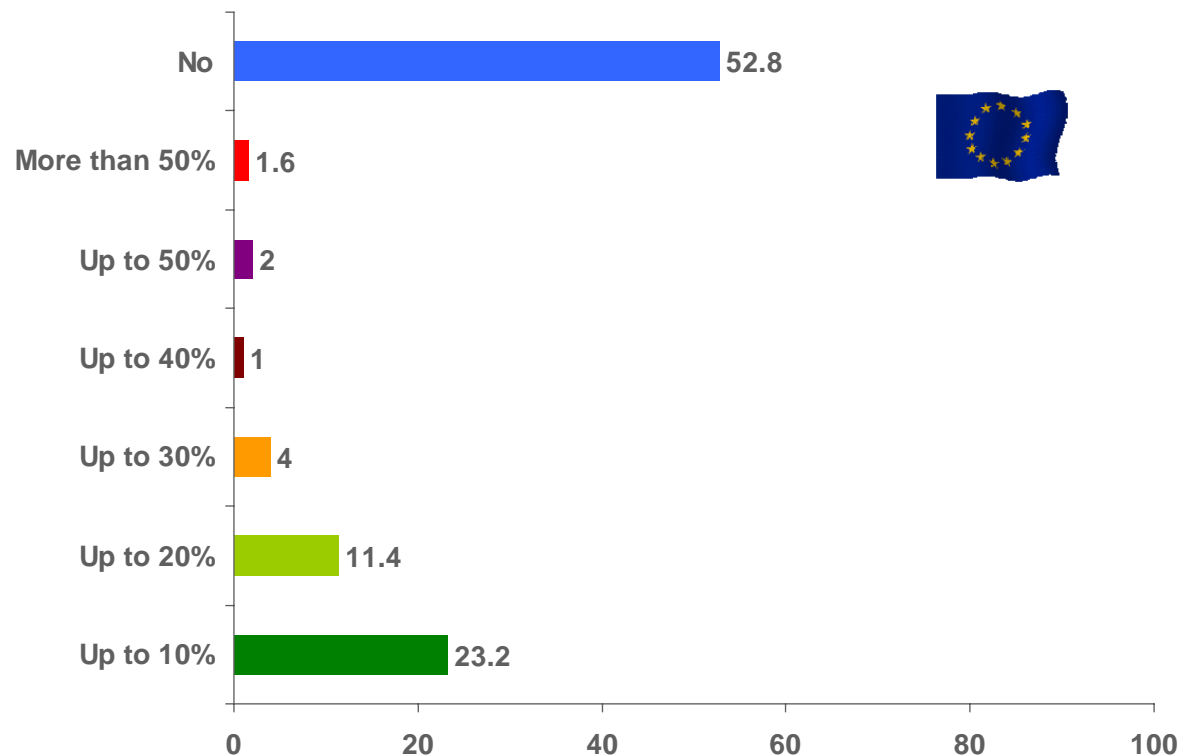
Markets with a long-standing chocolate tradition are the most keen to buy sugar-reduced chocolate: 48% in Switzerland and 46% in Belgium

Today, it is possible to reduce the sugar content of chocolate without altering the delicious taste. Or to put it in another way: your chocolate would not change at all, only the sugar content would drop. Would you be interested in buying this sugar-reduced chocolate?



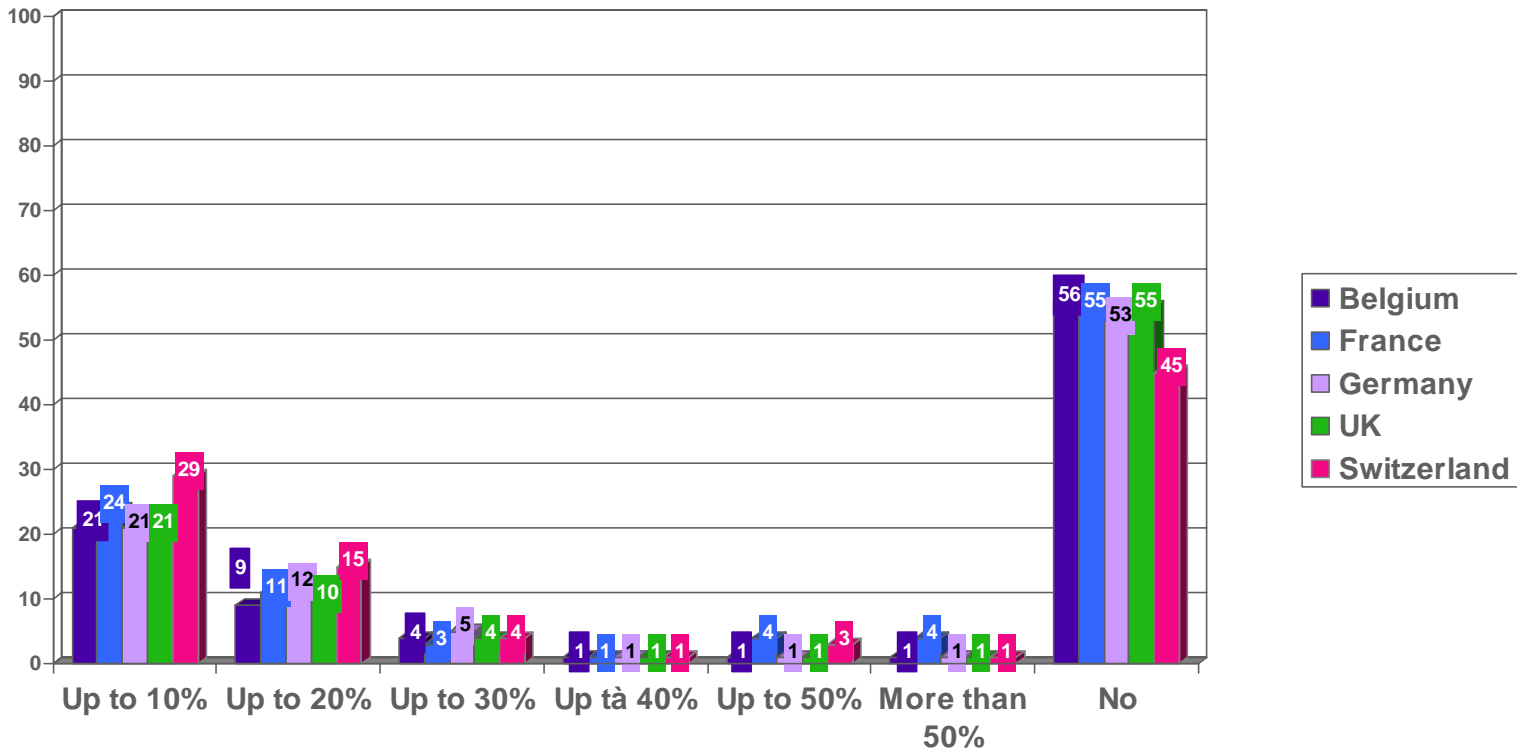
Close to 1 out of 2 Europeans (47%) would pay more for 'health friendly or enhancing' chocolate
Close to 1 European out of 4 (23,2%) would be willing to pay 10% more

Would you be willing to pay more for 'healthy' chocolate?



Close to 1 out of 2 Europeans (47%) would pay more for for 'health friendly or enhancing' chocolate
 Close to 1 European out of 4 (23,2%) would be willing to pay 10% more

Would you be willing to pay more for 'healthy' chocolate?





III. CONCLUSIONS

- 1 out of 2 Europeans (52,8%) eats chocolate at least a few times a week
- Regular chocolate remains the most popular chocolate, origin and fair-trade chocolate are gaining popularity
- Functional chocolate has not found its way yet to the consumer (only 1,5% consumers eat it today)
- Europeans believe that chocolate can be beneficial for our health and general state of mind: they say it boosts the morale (53%) and vitalises you (48%)
- European consumers express their desire to buy and consume chocolate that promises health benefits: more than 1 out of 3 (36%) would buy it
- Europeans are keen to buy sugar-reduced chocolate: 1 out for 3 (38%) would buy it
- Close to 1 out of 2 Europeans (48%) is willing to pay more for 'healthy' (= health enhancing or health friendly) chocolate



Barry Callebaut: Driving innovation in chocolate



Pragmatic Innovation Approach

▶ **Deliver compelling concepts based on unique technologies**

▪ ***Unique technologies:***

- Leverage our unique value chain advantages (R&D, Sourcing, flexible processing)
- Preserve/support what's naturally good in the cocoa bean into chocolate

R&D

▪ ***Compelling concepts:***

- Deliver “proof of concept” (through marketing research) that our unique technologies can increase market share, consumer preference, and premium pricing for our customers

Mktg

Chocolate has it all - naturally



Acetic-acid, aesculetin, alanine, alkaloids, alpha-sitosterol, alpha-theosterol, amyl-acetate, amyl-alcohol, amyl-butyrate, amylase, apigenin-7-o-glucoside, arabinose, arachidic-acid, arginine, ascorbic-acid, ascorbic-acid-oxidase, asparaginase, **beta-carotene**, **beta-sitosterol**, beta-theosterol, biotin, caffeic-acid, **caffeine**, calcium, campesterol, catalase, **catechins**, catechol, cellulase, cellulose, chlorogenic-acid, chrysoeriol-7-o-glucoside, citric-acid, coumarin, cyanidin, cyanidin-3-beta-l-arabinoside, cyanidin-3-galactoside, cyanidin-glycoside, cycloartanol, d-galactose, decarboxylase, dextrinase, diacetyl, **dopamine**, **epicatechin**, ergosterol, ferulic-acid, formic-acid, fructose, fufurool, galacturonic-acid, gallicocatechin, gentisic-acid, glucose, glutamic-acid, glycerin, glycerophosphatase, glycine, glycolic-acid, glycosidase, haematin, histidine, i-butyrac-acid, idaein, invertase, isobutylacetate, isoleucine, isopropyl-acetate, isovitexin, kaempferol, **l-epicatechin**, leucine, leucocyanidins, linalool, linoleic-acid, lipase, luteolin, luteolin-7-o-glucoside, lysine, lysophosphatidyl-choline, maleic-acid, mannan, manninotriose, mannose, melibiose, mesoinositol, methylheptenone, n-butylacetate, n-nonacosane, **niacin**, nicotinamide, nicotinic-acid, nitrogen, nonanoic-acid, o-hydroxyphenylacetic-acid, octoic-acid, **oleic-acid**, oleo-dipalmitin, oleopalmitostearin, oxalic-acid, p-anisic-acid, p-coumaric-acid, p-coumarylquinic-acid, p-hydroxybenzoic-acid, p-hydroxyphenylacetic-acid, palmitic-acid, palmitodiolin, pantothenic-acid, pectin, **pentose**, peroxidase, phenylacetic-acid, phenylalanine, phlobaphene, phosphatidyl-choline, phosphatidyl-ethanolamine, phosphatidyl-inositol, **phospholipids**, phosphorus, phytase, planteose, polygalacturonate, polyphenol-oxidase, **polyphenols**, **proline**, propionic-acid, propyl-acetate, protocatechuic-acid, **purine**, pyridoxine, **quercetin**, quercetin-3-o-galactoside, quercetin-3-o-glucoside, quercitrin, raffinase, raffinose, reductase, rhamnose, riboflavin, rutin, rutoside, saccharose, salsolinol, serine, sinapic-acid, stachyose, stearic-acid, stearodiolin, **stigmasterol**, sucrose, syringic-acid, **tannins**, tartaric-acid, **theobromine**, **theophylline**, **thiamin**, threonine, trigonelline, tyramine, tyrosine, valerianic-acid, valine, vanillic-acid, verbascode, verbascotetrose, vitexin

Cocoa contains hundreds of different components of which many have potential health benefits

Chocolate = 100 % emotion*

- ▶ Reward
- ▶ Seduction - in many different ways
- ▶ Pleasure and indulgence
- ▶ Makes a wide range of product more attractive (taste & appearance)
- ▶ About fun, enjoyable moments

*Consumer research
(Barry Callebaut 2004)

health



experience



convenience



The chocolate challenge



▶ **Chocolate is good**

- ▶ Chocolate gives energy, possesses a lot of ingredients that are beneficial to our health
- ▶ It's nice, we enjoy it, it is a moment of pleasure
- ▶ It can be an integral part of a healthy diet



▶ **But when we eat it - we often have mixed feelings**

- ▶ I enjoyed it, but shouldn't have had it
- ▶ Indulgence seems to intertwine with guilt

Innovation pipeline: in and beyond chocolate



- **IMPROVING PERMISSABILITY OF CHOCOLATE CONSUMPTION**

- Better nutritional profiles (lower calories) by solving the perceived problems of chocolate - sugar & fat:
 - sugar-reduced
 - fat reduced/fat modified
- Offering “healthier” alternatives to normal chocolate:
 - Tooth-friendly
 - Acticoa
 - Mood chocolate
 - Probiotic/prebiotic chocolate

- **MARKETING COMPETITIVE ADVANTAGES**

- Following the trend toward premium chocolate:
 - Origin/Plantations
 - Organic
 - Fair-trade chocolate
- Controlled fermentation

- **SUPERIOR APPLICATIONS**

- Chocolate
 - 100% Solvable cocoa-powder
 - Superior taste
 - Anti-oxidant fillings: green tea or cranberry
 - All natural fruit chocolate/fillings
 - Maple-syrup instead of sugar
 - Vulcano
- Beyond Chocolate
 - Mycryo
 - Supplements
 - Actibrew
 - Actiskin



Barry Callebaut Innovation Strategy

Always starting from the bean



Barry Callebaut Innovation Strategy



One of our most important focal points:

Improving the “permissibility to consume”

- Solving the perceived problems of chocolate: sugar & fat
- Offering “healthier” alternatives to normal chocolate

The consumer is ready and requesting this*

1 out of 3 European consumers would buy chocolate that promises health benefits
1 out of 3 European consumers would buy chocolate that is naturally sugar reduced

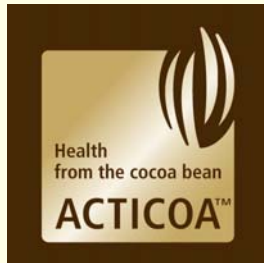
*Barry Callebaut consumer research November 2006

2 'permissibility' highlights today



**Naturally, sugar reduced
chocolate**

(preserving the exquisite taste)



The natural strength of chocolate

(health enhancing chocolate)



Naturally, sugar reduced chocolate
(preserving the exquisite taste)

Reducing Sugar: the challenges



▶ **The Challenges to master:**

- ▶ Inherent to the product
 - Trend away from artificial and chemical sweeteners; no additives
 - Sugar reduction through polyols causes laxative effects: no children's products
- ▶ Inherent to perception:
 - Sugar-reduced chocolate has a „stigma“ we need to understand and overcome
 - Sugar reduction must also yield a significantly improved nutritional profile
 - Sugar-reduced must achieve parity acceptance vs. normal chocolate



Reducing sugar and preserving the flavour



- ▶ **DIETARY FIBRES**
 - Non-digestible food ingredients
 - Special selection of complex, long and short chain fibres
 - Large part derived from the cocoa bean

- ▶ **COCOA**
 - Carefully selected special origin cocoa beans
 - Selection dependent on bean quality

- ▶ **MILK**
 - Quality helping to achieve desired flavour, colour and texture



Barry Callebaut innovates: cocoa fibres instead of sugar



- ▶ **Today:**
 - ▶ Barry Callebaut has developed sugar reduced chocolate **up to 50%**
 - ▶ Today Barry Callebaut is developing milk chocolate with **75% less sugar**

- ▶ **In a typical milk chocolate, sugar replaced by:**
 - ▶ A combination of FIBRES, extra COCOA and MILK

- ▶ **Resulting in an excellent tasting chocolate with a significantly improved nutritional profile**
 - Less sugar: at least 50%
 - Enriched in cocoa fibres
 - Reduced Glycaemic Response: 50%
 - Less calories: 20%
 - Non-laxative
 - Improved gut function
 - Helps to detoxify



Dietary Fibers – Positive Claims

- ▶ Claim areas, based on human clinicals:
 - Reduce calorie content:
Fibers: 2 kcal/g or 50% as compared to Sucrose: 4 kcal/g
 - Detoxify by improving regularity and reducing constipation:
Regulating the intestinal transit
 - Proven Prebiotic Properties:
Improve the immune defense mechanism by stimulating bifidobacteria, improving gut function, causing a positive effect on colonic flora
 - Boosting bone health:
Increase the effective absorption of minerals (Calcium and Magnesium)
 - Balanced Food (GI/GL):
Fibers: negligible GI as compared to Sucrose: GI 68.
Lower GI meals result in a slower and more sustained energy release, prolonged satiety, more controlled appetite and food intake

Dietary Fibers – Positive Claims



- ▶ Claim Areas, to be proven in human clinicals:
 - Lower the risk of cardiovascular disease by positively effecting lipid metabolism, reducing blood cholesterol and blood triglycerides
 - Improves the natural defense mechanism



The natural strength of chocolate
(health enhancing chocolate)

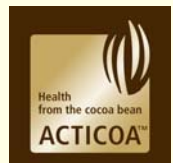


Polyphenols and cocoa

- ▶ Polyphenols are effective anti-oxidants
 - ▶ They naturally occur in many plants where they are responsible for colouring (e.g. red, blue, and purple coloured fruits and berries) and protection.
 - ▶ There are many subclasses and more than 10.000 different types of polyphenols.

- ▶ The specific polyphenols in cocoa beans are some of the most effective anti-oxidants. Their potential health benefits include:
 - ▶ Improved cardiovascular health: helps lowers cholesterol, anti-thrombotic (aspirin-like effect), improves blood vessel function (endothelium).
 - ▶ Cancer prevention: prostate, colon, breast and lung cancer.
 - ▶ Regulation of the immune system: anti-microbial activity, anti-inflammatory properties
 - ▶ Improved Brain function
 - ▶ Prevents tooth decay
 - ▶ Improves Sugar metabolism
 - ▶ Increases activity level

- ▶ Since 2000 more then 50 studies are published showing the positive effect of cocoa polyphenols



Cocoa contains more polyphenols than ...

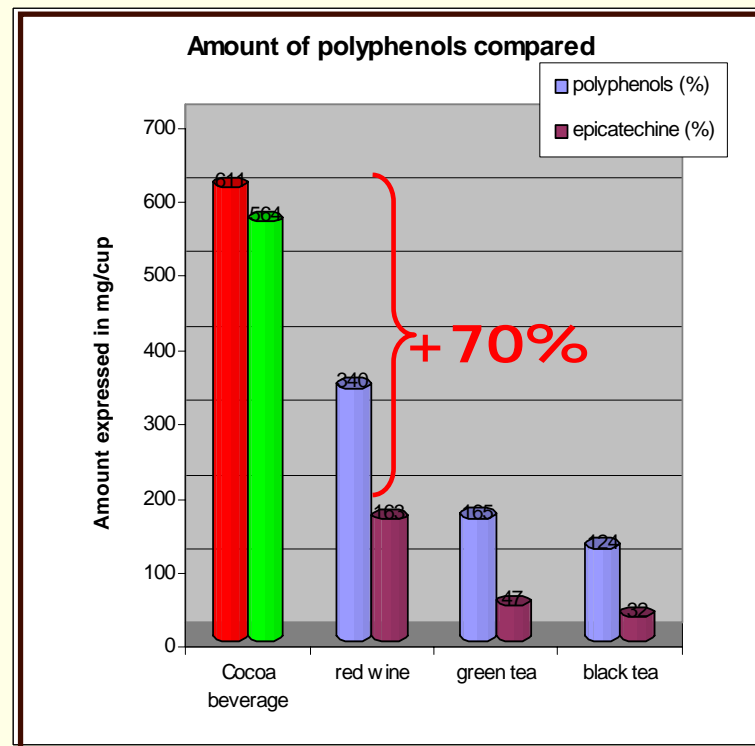


- ▶ Cocoa contains **+70%** more polyphenols than red wine or tea (Lee et al, 2003)

Drink	Total of polyphenols	Epicatechin
Cocoa drink	611	564
Red wine	340	163
Green tea	165	47
Black tea	124	34

Measured portions:

- 7,3 gram natural cocoa powder in 200ml water
- 140ml red wine
- 2 gram tea in 200ml water



Acticoa™: a world-first quality guarantee



ACTICOA™: The only process in the world which retains the polyphenols/anti-oxidants that naturally occur in cocoa beans but are normally lost in chocolate production, without adding extracts or additives

ACTICOA™, The only chocolate in the world that combines good taste with:
guaranteed minimum polyphenol-content :

- ▶ ACTICOA™ Dark chocolate: **6,0%** (variation 0,4%)
= 2 times more than standard dark chocolate
- ▶ ACTICOA™ Milk chocolate: **2,1%** (variation 0,2%)
= 4 times more than normal milk chocolate

ACTICOA™:

ACTICOA™ Dark chocolate: 438 ORAC Values

= 2 x more than next comparable dark chocolate (average 197 ORAC)

=9 grams of ACTICOA™ chocolate covers RDI

PORTION SIZE





Special technology

Barry Callebaut's answer to preserve the natural, high levels of active polyphenols in cocoa is the ACTICOA™ process.

ACTICOA™ chocolate is produced without adding extracts or other chemical substances. ACTICOA preserves the natural anti-oxidants present in cocoa.



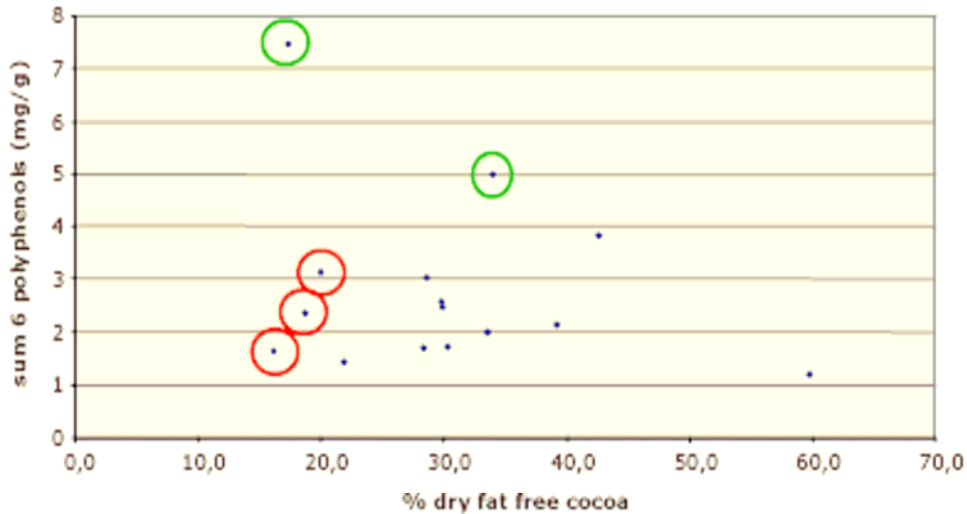
The ACTICOA™ process preserves up to 70% of the naturally present polyphenols in the finished product. ACTICOA™ cocoa and chocolate therefore offers uniquely high amounts of the natural antioxidants from the cocoa bean.



Innovations: anti-oxidant chocolate



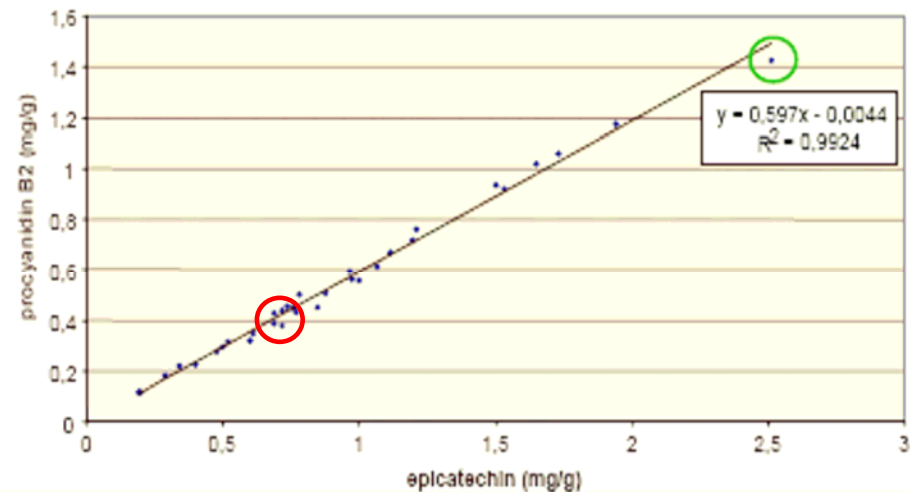
Sum of 6 Polyphenols vs. % Dry, Fat-free, Cocoa Solids



Acticoa has the highest amount of cocoa polyphenols

Acticoa has the highest amount active cocoa polyphenols

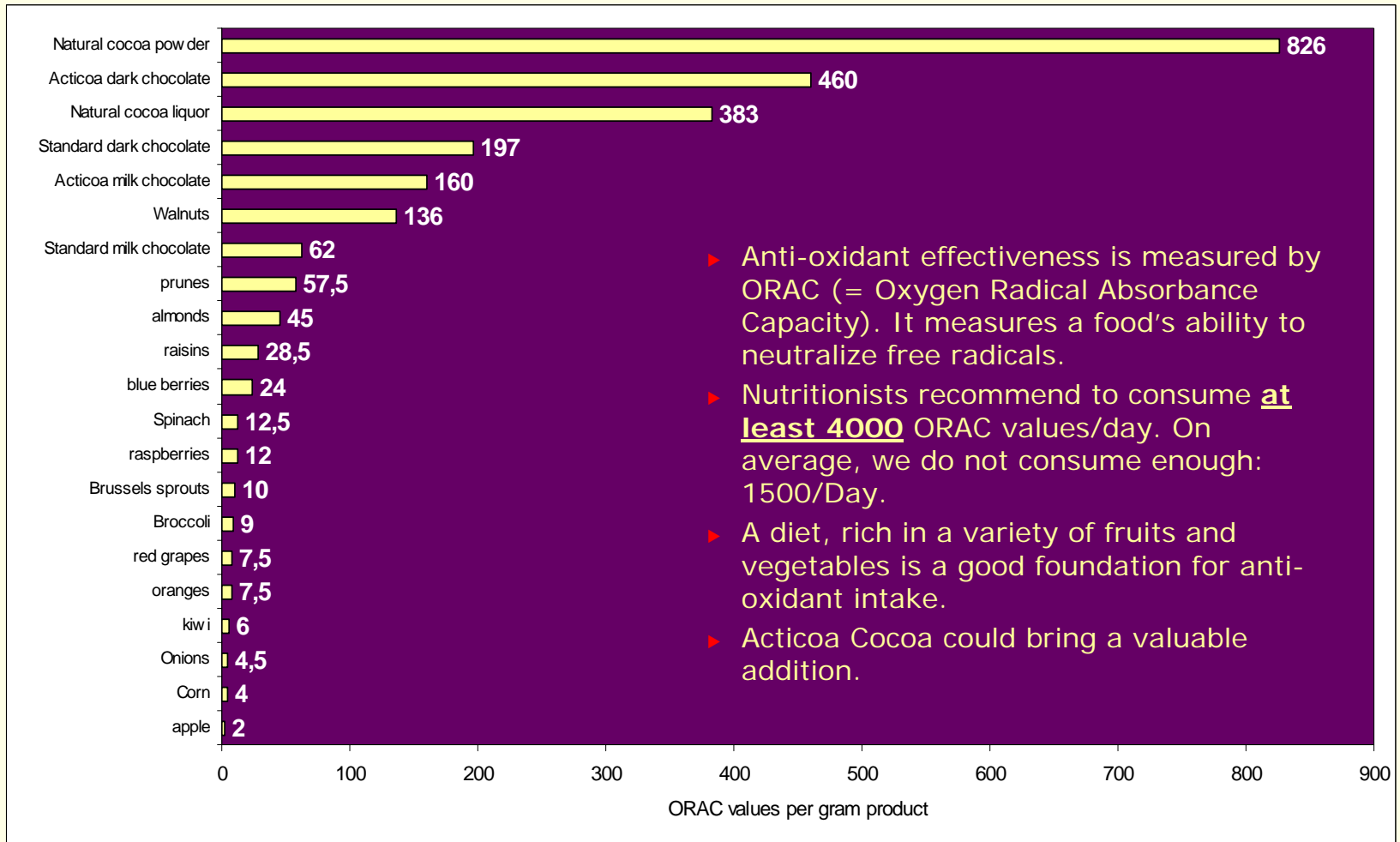
Relation Epicatechin – Procyanidin B2



ACTICOA™ contains the most effective polyphenols



▶ ORAC, Oxygen Radical Absorbance Capacity



Innovations: anti-oxidant chocolate



- Cardiovascular health

Reduced blood pressure

Platelet function / endothelium function

Lower bad cholesterol (oxidised LDL cholesterol)

- Cognitive performance

Improved blood flow

Cognitive studies on animals and humans

Cognitive studies other polyphenol sources

Indirect effect via environment – antioxidant effect

- Aging

Link to cardiovascular health

Link to cognitive performance and activity

Oxidative stress

- Immunity and immune system

Inflammation

Effect on leucocytes and cytokines

Cancer studies in vitro and animal studies

**Cocoa
polyphenol
effects are
linked**



Clinical Results Up-Date 2006

- ▶ Heart-health: Cardiovascular biomarkers
 - ▶ ET-1 synthesis inhibition: Acticoa chocolate up to 32 times more effective towards heart health than standard dark chocolate: 10 grams similar effect as 1 glass of red wine.
 - ▶ Malondialdehyde production: Acticoa chocolate reduces this specific heart health biomarker with more than 30%
 - ▶ Anti-ageing / cognition
 - ▶ Cocoa polyphenols increase life-expectancy of treated animals with 30%, while maintaining specific biomarkers (e.g. Dopaminereceptors)
 - ▶ Cocoa polyphenols improve memory capacity and activity whilst ageing

Clinical Results Up-Date 2006



- ▶ Bio-availability
 - ▶ Consumption of milk in combination with cocoa doesn't influence the absorbance of cocoa polyphenols

- ▶ Skin health (topical)
 - ▶ Combination of cocoa butter/polyphenols reduces wrinkles with 40% after 12 days
 - ▶ Cosmetic formulations with CB/polyphenols reduces visible signs of ageing (e.g. Agespots)



New taste experiences are on the rise

- ▶ Barry Callebaut launches innovations under consumer brands:

Health

- ▶ Sarotti IQ with ACTICOA™ chocolate
 - ▶ Callets and tablets
 - Dark chocolate (60% cocoa)
 - Milk chocolate (40% cocoa)
 - ▶ To be launched in September 2007



- ▶ Jacques Matinettes
 - ▶ With sugar reduced chocolate - 30% less sugar
 - ▶ To be launched mid February 2007



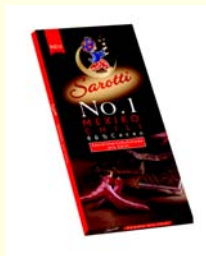


New taste experiences are on the rise

- ▶ Barry Callebaut launches innovations under consumer brands:

Indulgence

- ▶ Sarotti No. 1 adds two new single-origin chocolates
 - ▶ Sarotti No. 1 "Brazil": 60% of cocoa combined with delicate hint of mint
 - ▶ Sarotti No. 1 "Mexico": 66% of cocoa with chili flavour
 - Both to be launched in April 2007
- ▶ Jacques Arom'Art:
 - ▶ Box with small blocks of origin chocolate: dark Sao Thomé chocolate (75% cocoa), Java milk chocolate (33% cocoa) and fondant chocolate from Ecuador (72% cocoa)





New taste experiences are on the rise

- ▶ The consumption of chocolate with a unique taste experience is growing increasingly:
 - ▶ 10.8% of consumers eat origin chocolate
 - ▶ Premium chocolate growing at 36%+ world-wide

Barry Callebaut launches new chocolates:

- ▶ 6 new origin chocolates:
 - ▶ 2 milk references: Melanesia (min. 35 % of cocoa) and Mexico (min. 40% of cocoa),
 - ▶ 4 new dark references: Arriba (min 50% of cocoa), Ghana (min 60% of cocoa), Madagascar (min 66% of cocoa) and Tanzania (min 75% of cocoa)
- ▶ 5 new origin powders
 - ▶ Ghana, Tanzania, Santo Domingo, Sao Thomé and Brazil
- ▶ The Golden Chocolate Collection
 - ▶ Developed after study to know the flavour-identity of four of the most important chocolate consuming countries (Belgium, France, Germany and Switzerland)

The Golden Chocolate Collection



- ▶ Growing interest in 'premium' chocolate
 - ▶ Consumers search for quality & authenticity
 - ▶ BC Competitors launch 'superior' tasting, upgraded references
 - ▶ More 'Gourmet' chocolate not only in specialised channels, but also in mass retail
- ▶ Need for 'superior' tasting chocolates with a story to tell
 - ▶ Selection of our best chocolates from 4 European countries famous for their chocolate 1) Belgium, 2) Germany, 3) Switzerland, 4) France
 - ▶ Each country has different taste preferences
 - ▶ we define taste profile by country and matched them with our chocolate references and then tested against equivalent of industrial competitors and leading consumer brands
- ▶ Result: THE GOLDEN CHOCOLATE COLLECTION
 - ▶ Range of 6 superior tasting chocolates
 - ▶ Each of the 6 references is preferred by end-consumers in each market in blind taste testing
 - ▶ E.g. BC reference significantly preferred against Lindt in Switzerland



Your questions

