

Innovations in Chocolate

Healthier Chocolates



**Key driving forces of Barry Callebaut's
Innovative products, tomorrow and for the
future**

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IFT – Chicago
November 15, 2012





2012: Trends in Food & Beverages





5 KEY CONSUMER & MARKET DRIVERS... in food & drinks, today and tomorrow





'Pure' is the New Natural

Purity
Raw **Unprocessed**
No artificial ingredients
Real **Pure & Simple**
Goodness from nature



1. "Pure" is the New Natural

Natural products are becoming the rule

- Issues with **definition of 'natural'**: '100% Natural', '100% Goodness',...
- Ongoing use of '**purity**', '**pure origin**', '**true to nature**',...
- '**GMO Free**' claims surge
- Combines with '**simplicity**' and '**convenience**' for more effect

Whole
Unrefined
Raw
100% pure

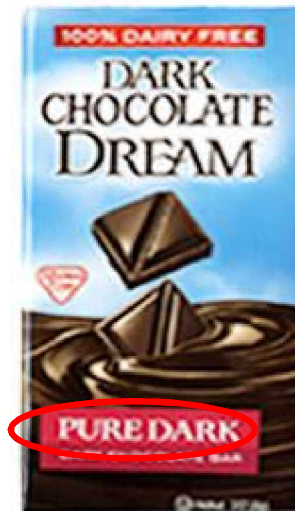
Pure & Simple
Pure & Natural
Purity

Unprocessed
100% real

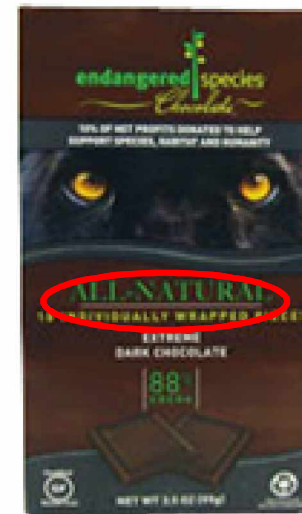
Simple ingredients
No artificial ingredients
Goodness from nature



US: Funley's
Delicious Peanut
Butter Stix In The
Mud. Made with
**Pure Milk
Chocolate**



US: Sunspire Dark
Chocolate Dream **Pure
Dark**

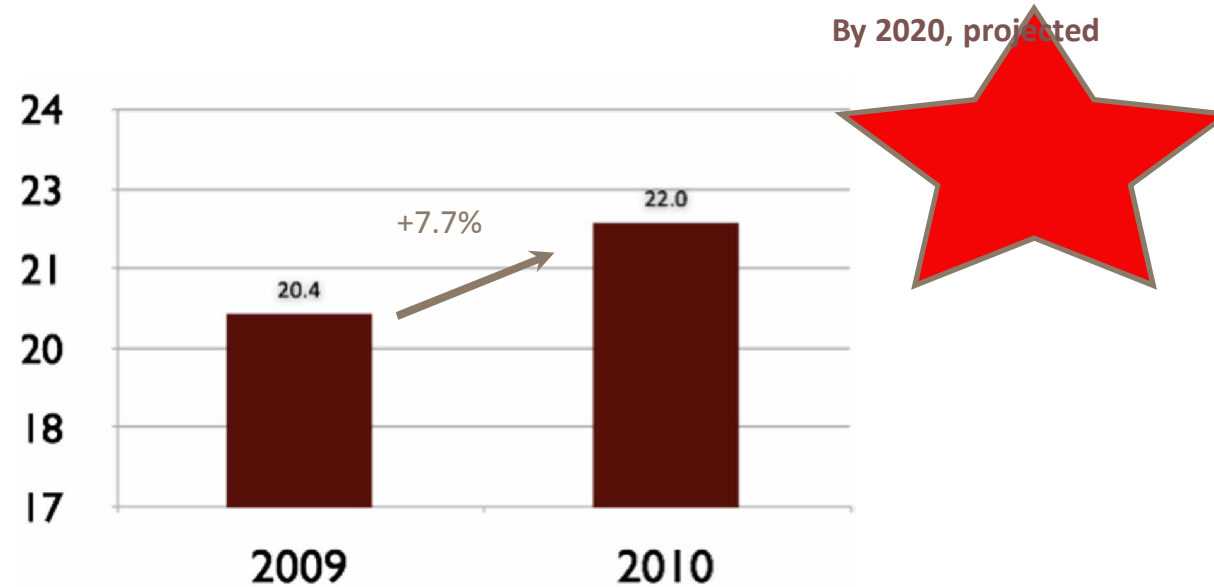


US: Endangered Species.
Chocolate **Extreme Dark
Chocolate**



Natural Is Accelerating

Sales of US Natural Food and Beverages(\$B)



Sources: ¹Navigating the Natural Marketplace, IFT.org July 2011
Top 10 Food Trends, IFT.org April 2011

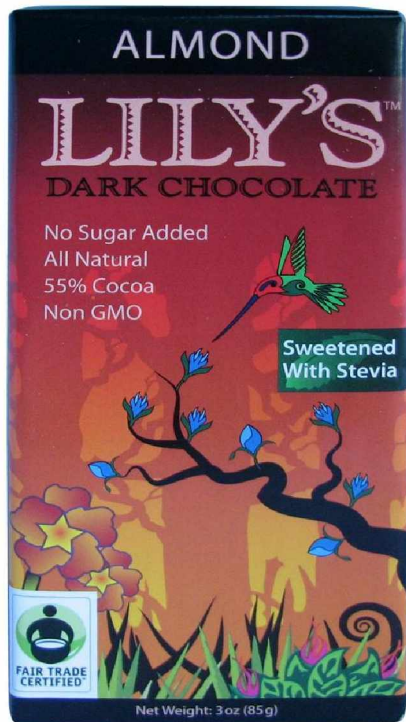
39%

% of consumers that cited "chemicals in food"
as most important food safety issue (+9% YA)



Inclusion of Natural Sweetener Stevia

The Low Sugar and No Added Sugar positioning both experienced growth in H1 2012 from H1 2011 indicating that sugar free products are becoming more mainstream. The application of natural Stevia has been a facilitator of growth.



US: Lily's Chocolate. Dark Chocolate Sweetened with Stevia. All Natural Sweetened using Erythritol and Stevia. Distributed Nationally.

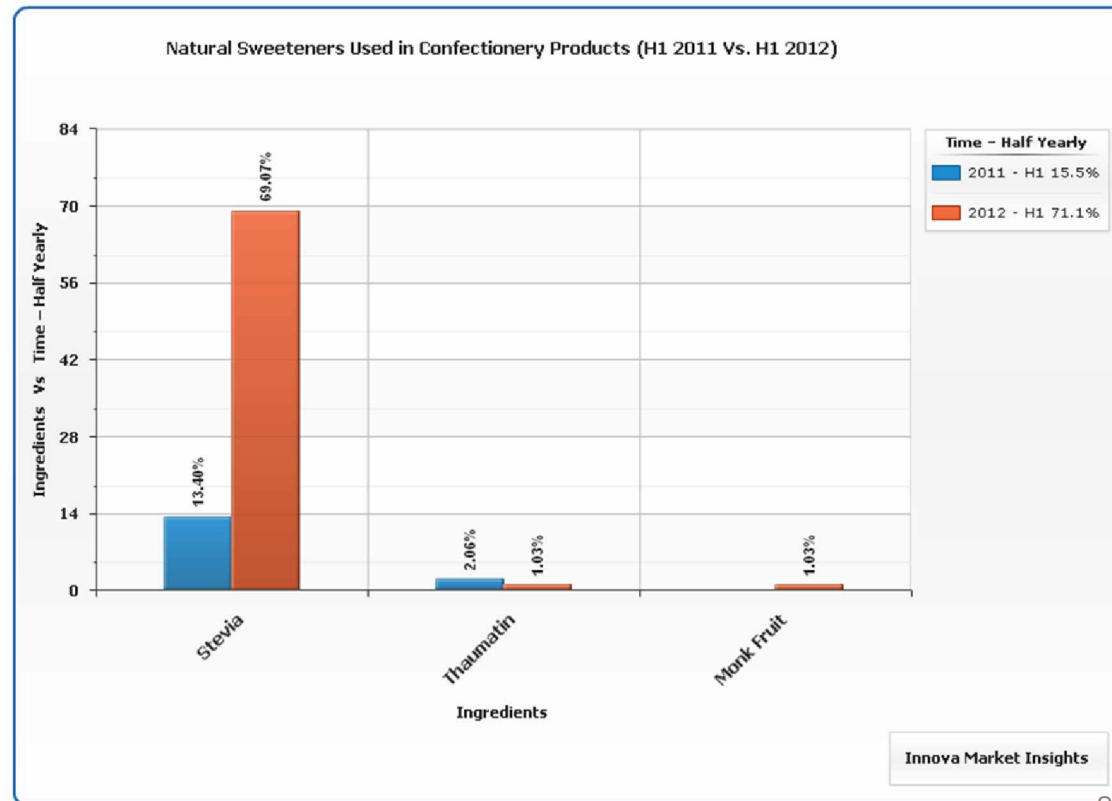
Spain: Torras Dark Chocolate with Stevia. Sugar free dark chocolate made with Stevia. Chocolates Torras is at the forefront in the use of new ingredients giving more value to the products.





Reducing Sugars and Fats Through Natural Sweeteners Is Exploding in The Market

Sugar free products continue to attract modern and calorie conscious consumers which has resulted in the adoption of natural sweeteners for confectionery.





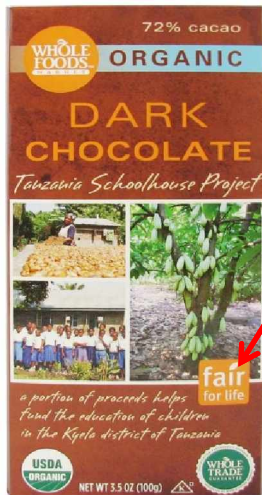
Green is a given Green is a given

Reduce **ReUse** **Sustainable**
Biodegradable
Environmentally friendly
Compostable **Certified**
Lower energy consumption



2. Green is a Given

- Sustainability now a compulsory issue for food companies
- Corporate social responsibility playing an increasingly important role
- Fairtrade, Rainforest Alliance continue to move mainstream, UTZ makes strides
- Giving back important



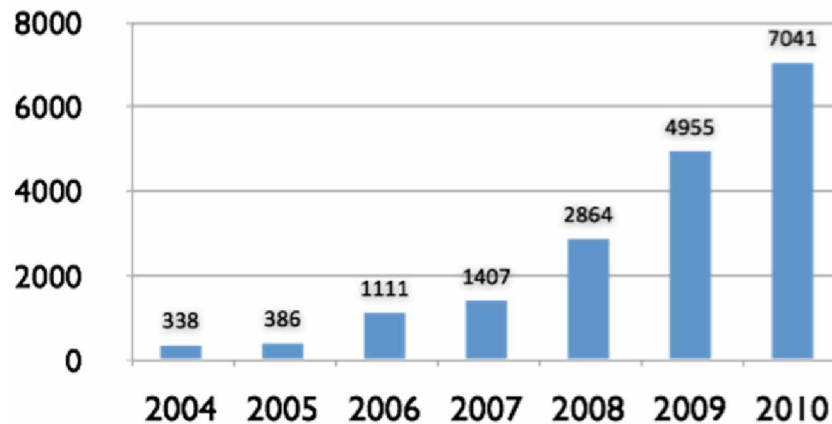
- Sustainable*
- Reduce*
- Reuse*
- Environment*
- 10% of all profits*
- Certified*
- Fairtrade*
- Biodegradable*
- Climate neutral*
- Lower energy consumption*
- Compostable*
- Environmentally friendly*
- Free Range*
- Waste reduction*



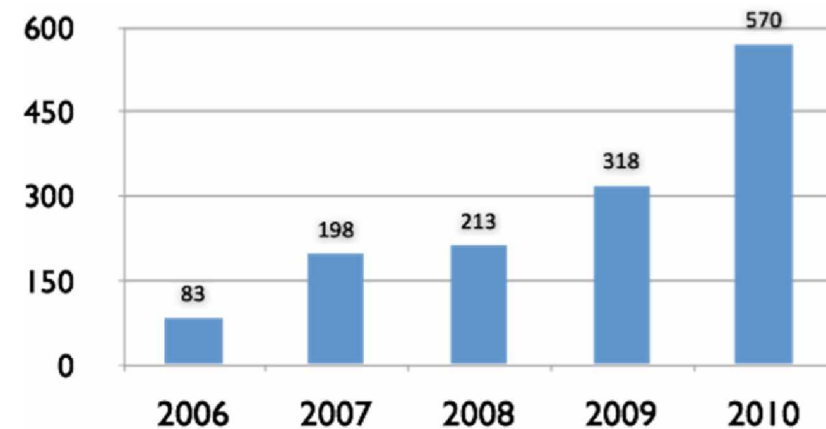
Sustainability Is Increasingly Important for CPG Companies

- ▶ Dramatic increases in consumer messaging and new product launches

Global Product Launches with Ethical Claims



Global Product Launches with “Sustainable Messages” on Packaging



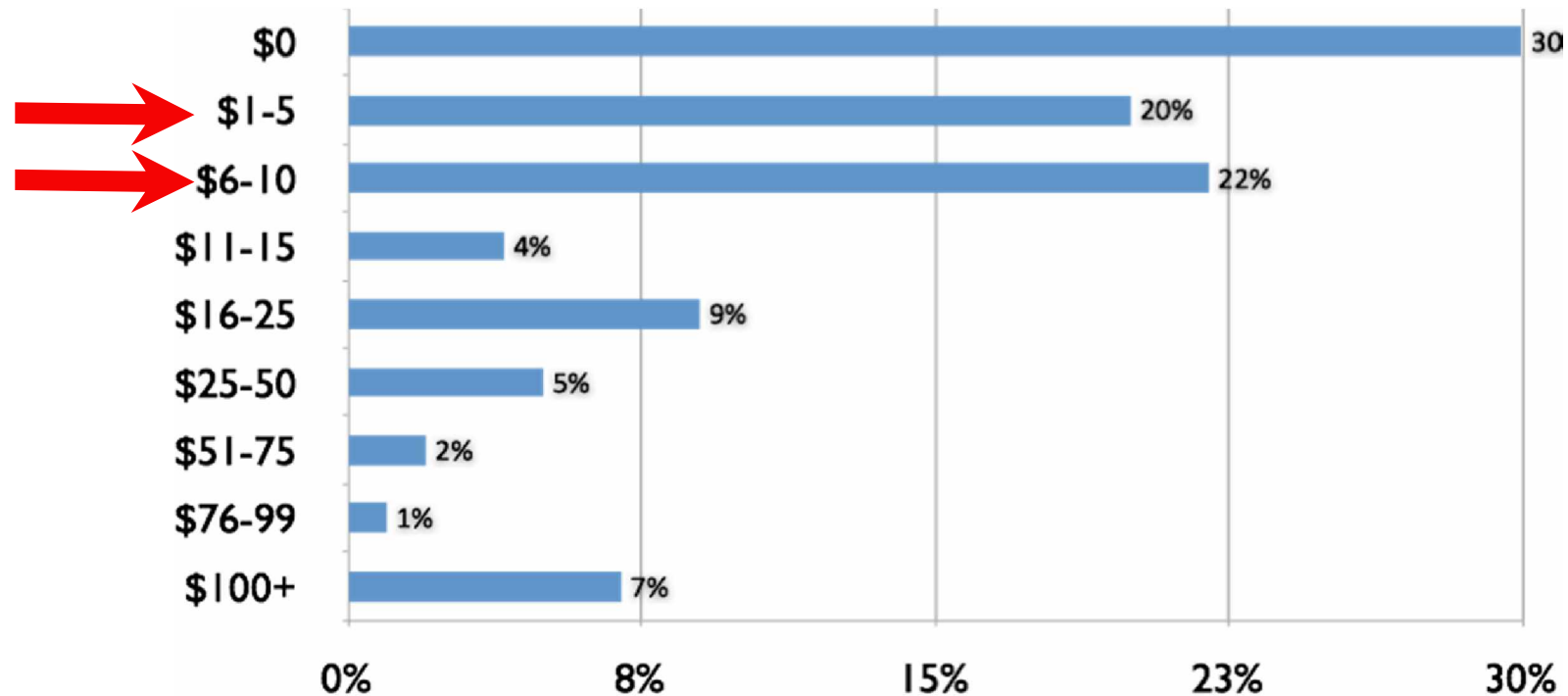
Source: Innova Newsletter December 2010

Innova, Ingredient Trends- Top 5



About Half of Consumers (45%) Will Spend Up to 10% More For a Socially Responsible Product

Additional Amount Willing to Pay for a \$100 Socially Responsible Product

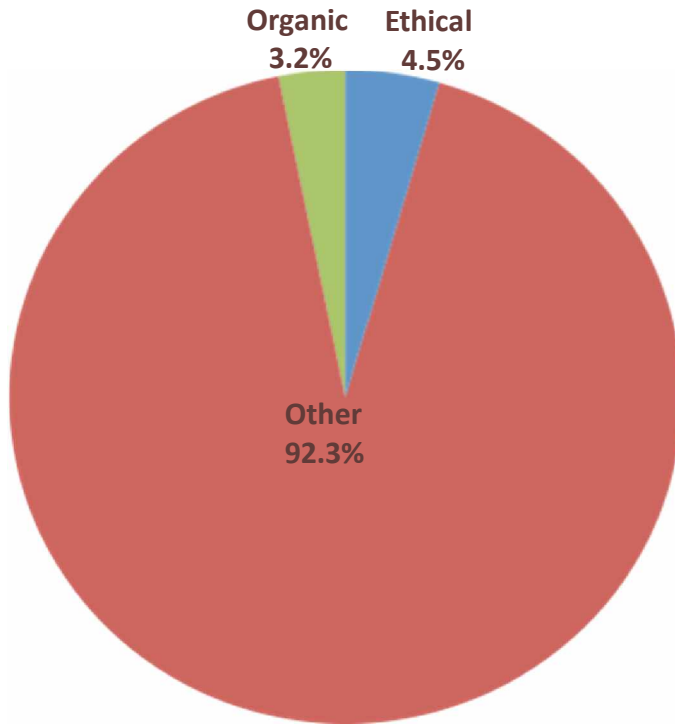


Source: CSR Branding Study, Feb 2010, Penn Schoen Berland, Landor and Burston-Marsteller



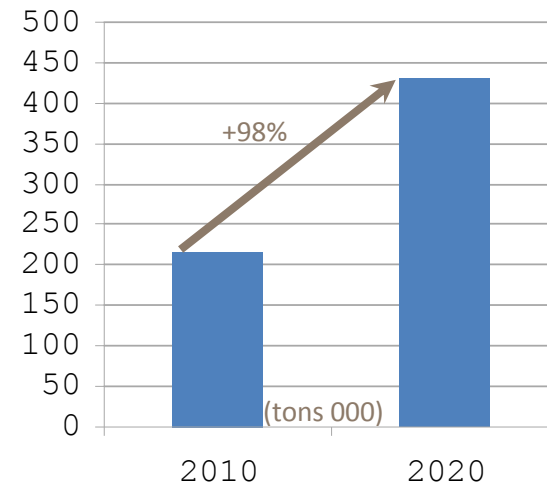
Ethical In Chocolate Confection Is Small But Growing

In 2010, "Ethical" Chocolate Is Relatively Small



BUT:

The US market for certified cocoa expected to nearly double by 2020



*Innova Chocolate Product Trends Jan-Jun 2010, Published January 2011
Tropical Commodity Coalition Barometer 2010. Note "Certified Organic Numbers are actually EU Organic Numbers)*



Location, Location, Location

Origin

Sourced

Certification

Region

Authenticity

Small batches

Locally grown & produced



3. Location, location, location

Local appeal the new sustainable trend

- Demand for **local products to support suppliers**
- Interest in **traditional and regional foods**
- Desire for **authentic products from specific regions**

Region

Origin

Locally grown

Locally produced

Sourced

Food miles

Protected

Designation of Origin

Farm

Small batches

Family

Reared with care

Certification

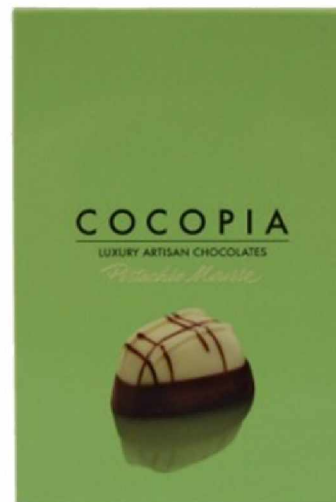
Authenticity

Traditionally made



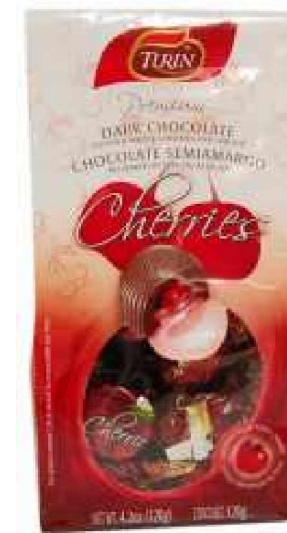
Italy

'Extra Dark Chocolate' with cacao selected from the Dominican Republic



UK

'Luxury Artisan Chocolates' with the finest roasted and refined Sicilian pistachios



Mexico

'Premium Dark Chocolate' with Italian Whole Cherries



Premium Stands Out

Pleasure

Taste

Guilt free

Offer

Luxury

Treat

Indulgence

Take a moment



4. Premium Stands Out

A question of adapting to changing consumer demands

- *Recession, cutbacks and lack of confidence continue*
- *Center-ground squeezed between **discount** and **premium***
- *Demand for **small treats** and **indulgences**: quality ingredients, crispy & crunchy textures, smoothy & multi-texture fillings...*
- ***Dark chocolate and Cacao %** are key trends*
- *Overall shift in premium chocolate market*

Indulgence

Select

Pleasure

Take a moment

Treat yourself

Guilt free

Affordable

luxury

Introductory

offer

Bonus

Buy 2, get 1 free

Luxury for less

Introductory

price

Special price

Every day value



US: Scharffen Berger 62% Cacao Nibby Dark Chocolate with Roasted Cacao Nibs





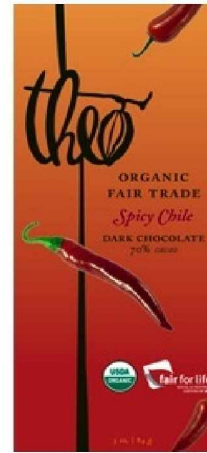
4. Premium Stands Out

A question of adapting to changing consumer demands



Kraft: Milk chocolate with **strawberry yogurt filling**, in a recloseable foil wrap.

United States: Theo Classic Collection **Spicy Chile** Dark Chocolate. A rich 70% dark chocolate



United Kingdom: Cadbury Dairy Milk Bubbly Milk Chocolate with Milk Chocolatey Bubbles.



United States: Dagoba Organic Chocolate with **Lemon Ginger**. Organic dark chocolate made with lemon essence, and crystallized ginger.



United States: Bioplex Pure Nutrition **Pumpkin Seeds** Coated with Milk Chocolate. Roasted pumpkin seeds coated with milk chocolate



NEWTREE (Belgium) VELVETY notes of apricot and cherry, the SPICY sensations of cinnamon, ginger and pink peppercorn, the FRESHNESS of mint and bitter orange and enjoy the **FLOWERY flavors of lavender**.



Seniors draw attention

Aging well

Active

Nutritionally balanced

Easy to open

Easy to Digest

Treat

Easy to read label

Reduced acid

Improved health



5. Seniors draw attention

Nutrient-dense, palate-pleasing & affordable

- Recognition of **extent of aging population issue**
- Potential from **specific nutritional requirements; vitD, folic acid, glucosamine, chondroitin...**
- Demand for **targeted products** with *adapted textures, flavors,...*
- Need for **easier-open packaging** and **clearer labeling**

Specifically formulated

Easy open

Easy to digest

Nutritionally balanced

Guideline daily amount

Reduced acid

For strong bones

For a healthy heart

Reduce cholesterol levels

Aging well

Improved health

Active

Easy to read labels



Targeted nutrition to help stay active and strong

Did you know that some experts recommend at least 25g of protein per meal to build lean muscle? Protein is important to help stay strong and energetic.

Each bottle of Ensure® high protein has 25g of high quality protein, is low in fat and has 10% of calories from sugars. Stay active, stay strong!





Forty is the new twenty

Nutrition

Stress Free

Vitality

Balance

For a long life

Energy

Anti-aging

Guilt Free



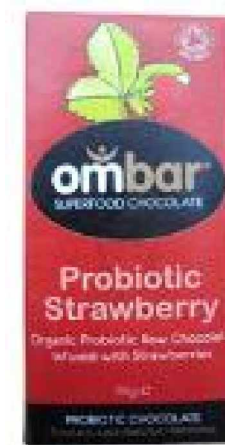
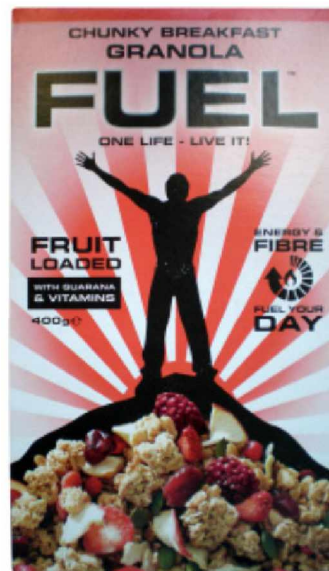
6. Forty is the new twenty

The art of Aging Gracefully



- Desire to *maintain active lifestyle*
- Demand for products to *aid 'successful aging'*: heart health, cognitive or brain health, eye health,...
- Potential for *targeted nutrition*
- More interest in *anti-aging ingredients*: resveratrol, omega-3, lutein, zeaxanthin, coenzyme Q10, ginkgo biloba, polyphenols, L-carnitine and green tea

Germany offers Schoko-Bang a Dark chocolate with **Green Matcha Tea**.



UK: Ombar Superfood **Chocolate Probiotic Chocolate: Probiotic Strawberry**

- Active
- Anti-aging
- For a long life
- Functional ingredients
- Longevity
- Health & fitness
- Nutrition
- Staying young
- Vitality
- Energy
- Stress Free
- Improved lifestyle
- Balance
- Guilt free



Grounded in science

Studies Evidence

Approved *Ground breaking research*

Technological advances

Recommended Product trials

Scientifically proven



7. Grounded in science

- Greater use of “*scientifically proven*” claims
- Need for *repacking, repositioning of ingredients not approved* without claims but message delivering

- Scientifically proven
- Approved
- Proprietary
- Recommended
- Guaranteed results
- Clinically tested
- Studies
- World first
- Technological advances
- Product trials
- Evidence
- Ground breaking research
- R&D
- Optimal performance

Chocolate is the new super fruit, claim Hershey scientists

By Jane Byrne, 07-Feb-2011
Related topics: Functional Chocolate, Markets

Cocoa powder and dark chocolate has equivalent polyphenol content and greater antioxidant and flavanol content than various super fruits, claims a new study by research scientists based at the Hershey Center for Health and Nutrition.

Chocolate giant submits cocoa flavanol-blood health claim to EFSA

By Shane Starling, 10-Jan-2012

Post a comment

Related topics: Health claims, Botanicals, Regulation, Antioxidants, carotenoids, Phytochemicals, plant extracts, Cardiovascular health

Barry Callebaut has submitted an article 13.5 health claim dossier to the European Food Safety Authority (EFSA) linking cocoa flavanols and healthy blood flow.

Cocoa can be the new cranberry, says food marketing guru

By Shane Starling, 02-Feb-2012
Related topics: Products & Marketing

Cocoa and its extracts have the potential to rival the success of cranberries as healthful powerhouses, especially if a recently applied for European Union health claim is approved this year, says a leading consultant and author.

Post a comment



Regulators force a rethink

Daily amounts *Government*
Recommendations

Regulations
Reduced *Reformulation*
Daily amounts



8. Regulators Force a Rethink

- **Controversy over role of governments/regulators** in healthy lifestyles:
- Changes in formulation to **improve nutritional profiles: salt, sugar, trans fat and fat**
- **Voluntary undertakings** from some multinationals
- **Concerns** over consumer **acceptance of reformulated lines**

Dietary guidelines

Government

Reformulation

Nutritional profile

Less

Reduced

Regulations

Exercise

Recommendations

Daily amounts



US: Hershey:
Milk chocolate
with filling.
Reduced Fat.



**US: Fannie
May No Sugar
Added Fine
Chocolates**



Customization

Exclusive

Facebook

Unique

Targets

For You

Customization

Tailored



9. Customization

- Rise of new communication via social media
- Smaller players can compete more successfully
- Multinationals need to emphasis local aspects and sourcing
- More tailoring of products to small groups or individuals

Customization

Individual needs

Tailored specifically

Unique

Early adopters

Facebook

Twitter

New marketing methods

Niche to Mainstream

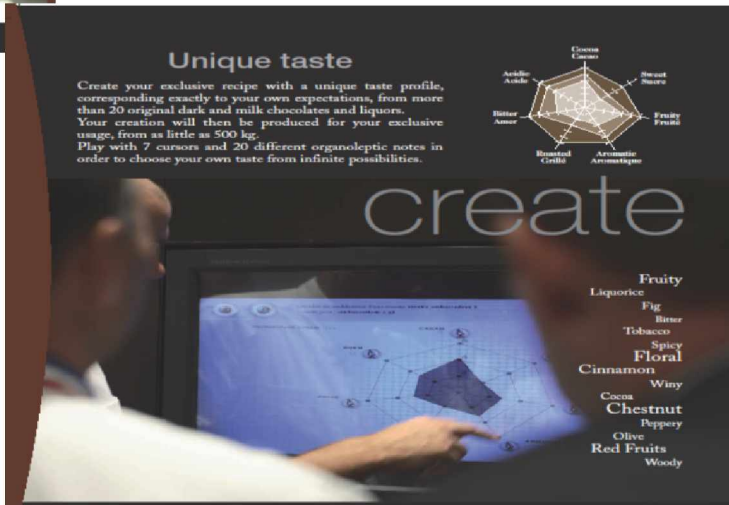
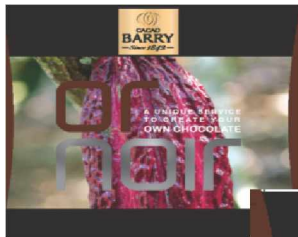
Targets

Consumer Groups

Specialization

Exclusive

For you



PERFECT PERSONALISED CHOCOLATE:
Boxes of tailor made Maison Cailler chocolates will be handpicked to match people's individual preferences.



Boom for protein

Peas

Vegetarian

Lentils

Natural source of protein

Meatless

Beans

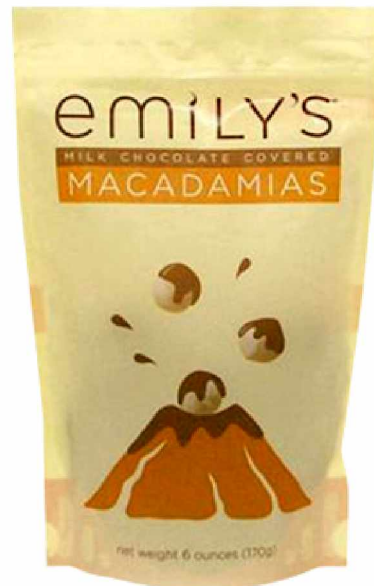
High Quality Protein



10. Boom for protein

Eating less meat gains interest

- Rising population numbers and need to feed everyone
- Demand for **new protein sources**, conventional and unconventional: *soy, wheat, lupin, potato...*
- **Sustainability** a key issue in promotion of **protein sources**



United States: Emily's Milk Chocolate Covered Macadamias
Big buttery macadamia nuts, bursting with **protein and fiber**, an energizing treat.



United States: Tuxedos Milk Chocolate Covered Almonds. Contains calcium, iron, **fiber, and protein**. Premium California almonds.

- Vegetarian society**
- Approved**
- Pure protein**
- Complete protein**
- High in protein**
- Natural source of protein**
- High quality protein**
- Meatless**
- Protein packed**
- Fiber & Protein**
- Sustainable protein source**
- Beans**
- Lentils**
- Peas**
- Legumes**



2012:
Innovation in Chocolates
Healthy Chocolates





5 KEY CONSUMER & MARKET DRIVERS... in food & drinks, today and tomorrow



**Health &
Wellness**

Indulgence



Legislation

**What is Barry
Callebaut doing to
meet these
consumer trends?**

**Travel &
Migration**



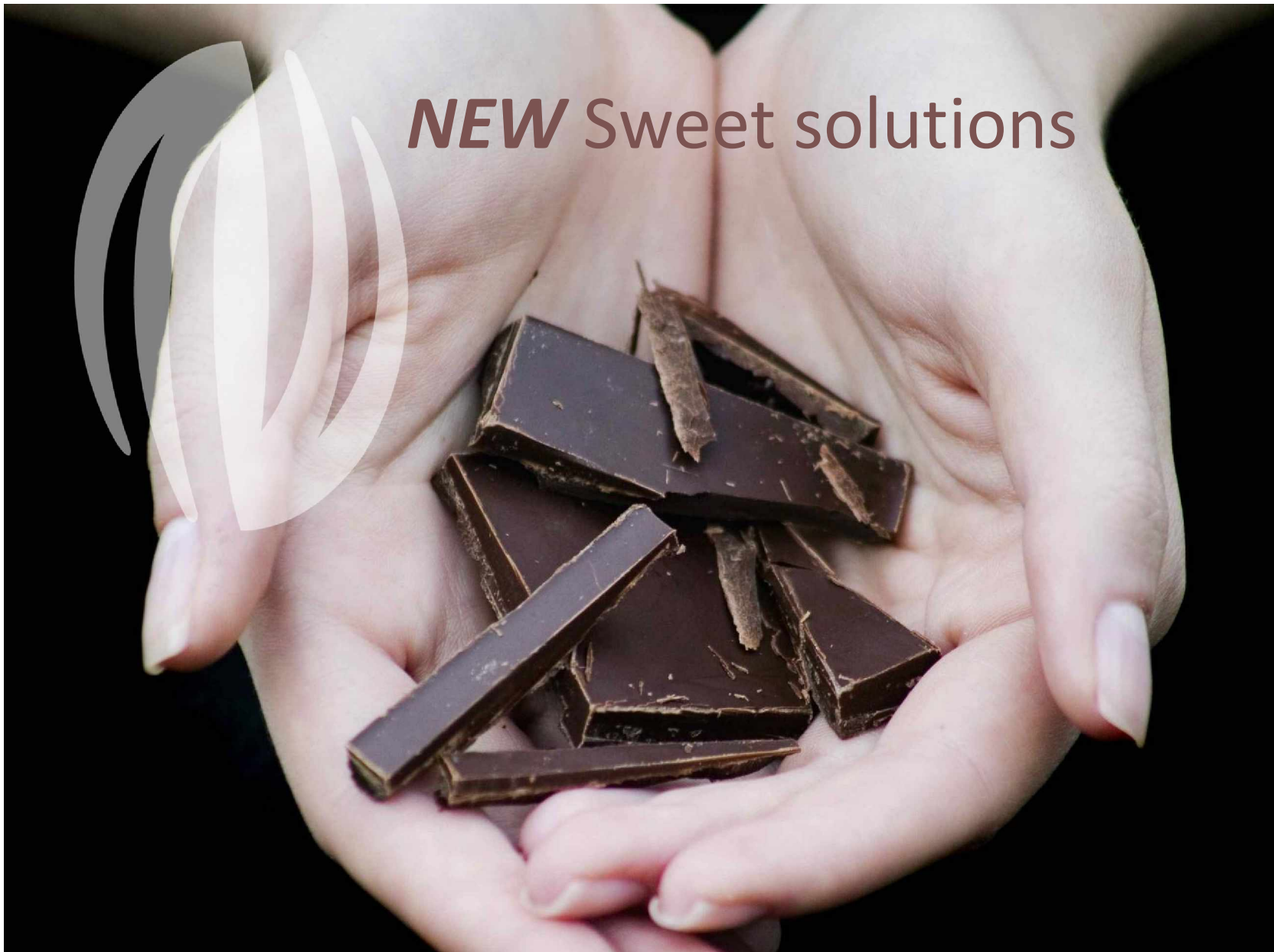
**Simplicity &
Ethics**





**Barry Callebaut is the
Innovator in the
Chocolate Industry**

Let us show you why

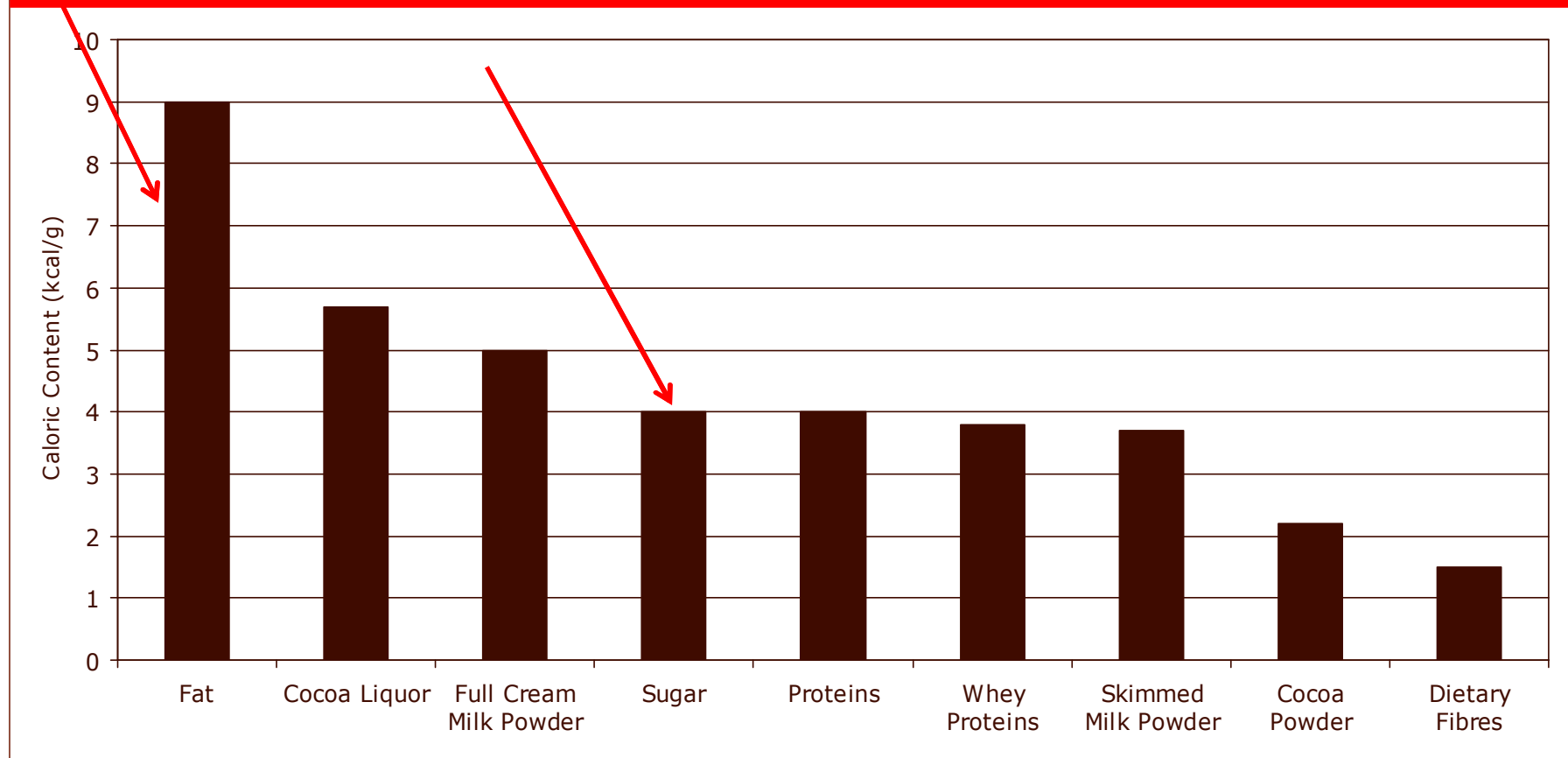


NEW Sweet solutions



Rebalanced Chocolate

What if you could fundamentally change the nutritional profile of chocolate?



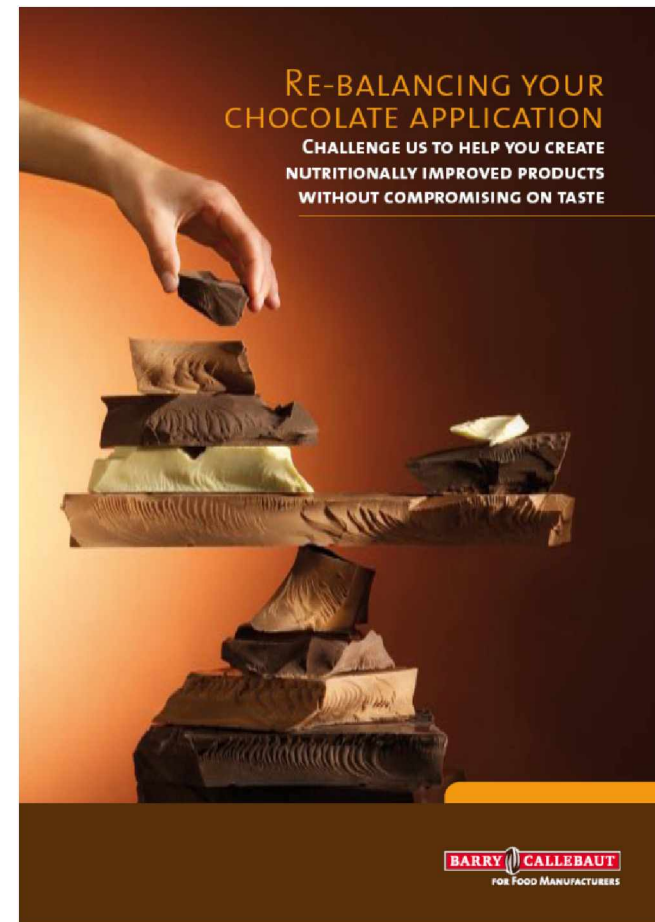


Rebalanced Chocolate Solutions

SUGAR REDUCTION
sugar partly replaced by
Dietary Fibers

WAS / SUGAR FREE
sugar totally replaced by
Maltitol / Lactitol / ErOH
(+ dietary fibres)

FAT/SAT FAT REDUCED
(ONLY 25% OF FAT)
Unique Processing Technology





Rebalanced Chocolate – Sugar Reduction

Goal:

- ✓ At least 25 - 30% Sugar reduction/fiber enrichment without compromising product quality

Rebalanced chocolate MUST:

- ✓ Achieve *parity* taste acceptance vs. standard chocolate
- ✓ Deliver significantly improved nutritional profile
- ✓ Not contain artificial sweeteners or additives
- ✓ Not increase fat content
- ✓ Not produce digestive discomfort or laxative effects



Chocolate with Stevia extract

*New sweet chocolates
to fall in love with*



Confidential Barry Callebaut Inc

BARRY CALLEBAUT
FOR FOOD MANUFACTURERS



Chocolate with steviol glycosides



Stevia rebaudiana Bertoni is a **herb**, also known as “Sweet leaf” or “Sugar leaf”



High grade extract (steviol glycosides) is used as a high intensive sweetener



Claims areas based on stevia strengths



Available in **Milk & Dark**



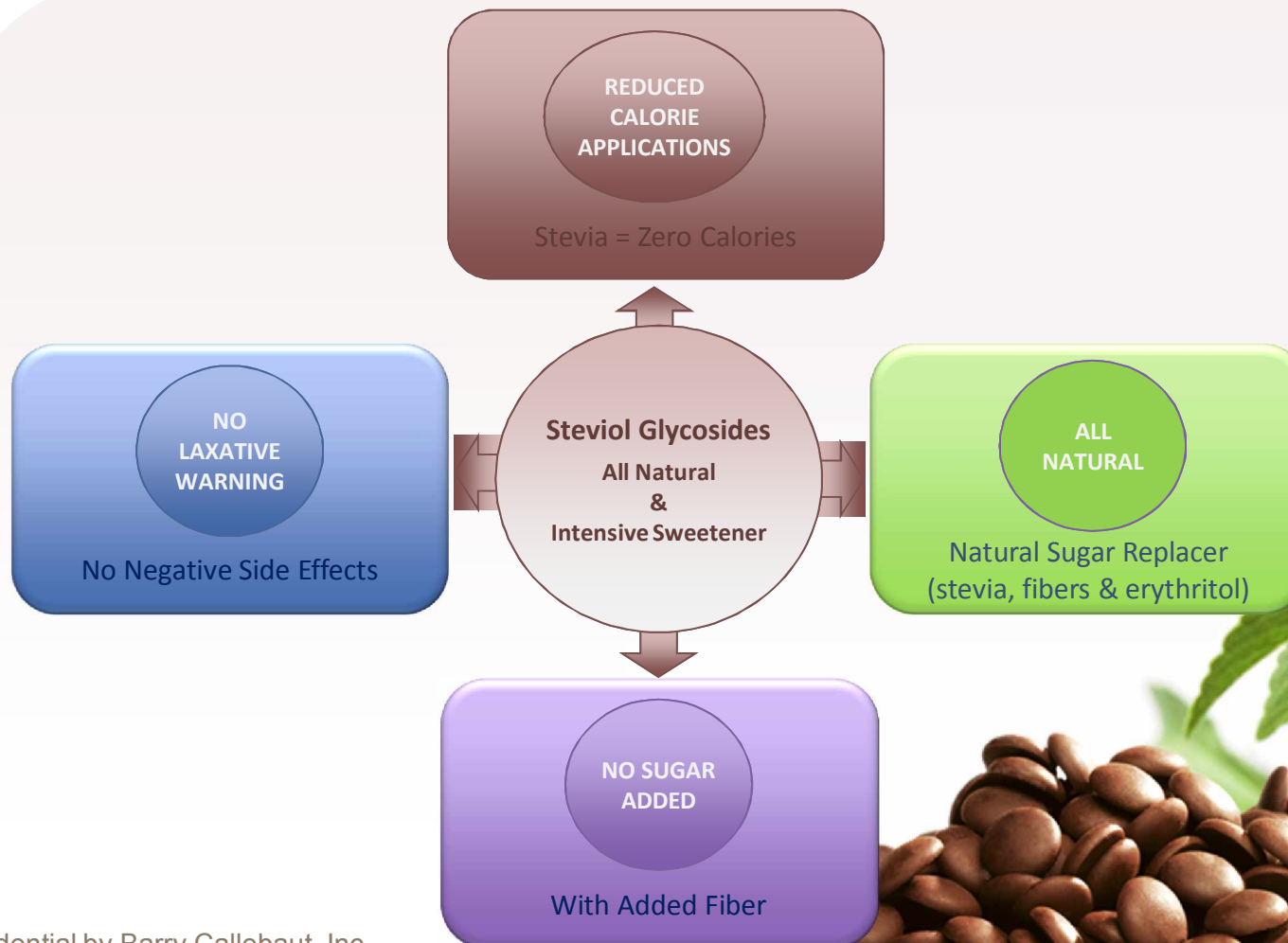
All applications possible depending on choice of recipe; Customizable sweetener solutions



Stevia concept **possible** in all sugar containing products



Positioning based on strengths of Stevia





Reason why & claims



Reason why

- Trend towards **less sugar** consumption
- More **healthy** and **natural** alternatives
- EU and other countries commitments to make WHO global strategy on Diet, Physical Activity & Health successful



Claims

- With sweeteners from stevia
- With steviol glycosides from the stevia plant
- With stevia-extract, steviol glycosides
- With sweetener of natural/plant origin
- Steviol glycosides occur naturally in stevia leaves
- Naturally sweet
- Naturally sweet taste



Sweet by Fruits™ Chocolate



**With 100% natural sugars
straight from the fruit**



Sweet by Fruits™ Chocolate

**Finally! Chocolate sweetened
by *nature* itself**



- ✓ This chocolate contains the best of the cocoa fruit and orchard fruits: sugars from apples and grapes
- ✓ Great taste with a sweet fruity touch
- ✓ Lovely mouth feel
- ✓ No added refined sugars
- ✓ No artificial sweeteners
- ✓ Only sugars straight from fruits and entirely from fruits
- ✓ Minimal processing: within hours after harvesting, the fruit juice is squeezed and the sugars physically extracted
- ✓ No chemical extraction or processing
- ✓ Ideal for a wide variety of applications: confectionery, biscuits, etc...
- ✓ Ideal for adults and children looking for a more conscious, healthier lifestyle



Chocolate is the fuel for the heart



Cocoa health potential...



**COCOA CONTAINS HUNDREDS OF DIFFERENT COMPONENTS OF WHICH
MANY HAVE POTENTIAL HEALTH BENEFITS**

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ACTICOA[®] Chocolate - Cocoa Flavanols

ANTIOXIDANTS

Molecules capable of slowing or preventing the oxidation of other molecules and provide protection against free radicals

FLAVONOIDS*

Biggest class of antioxidants. Polyphenolic compounds found in a variety of foods of vegetable origin (cocoa)

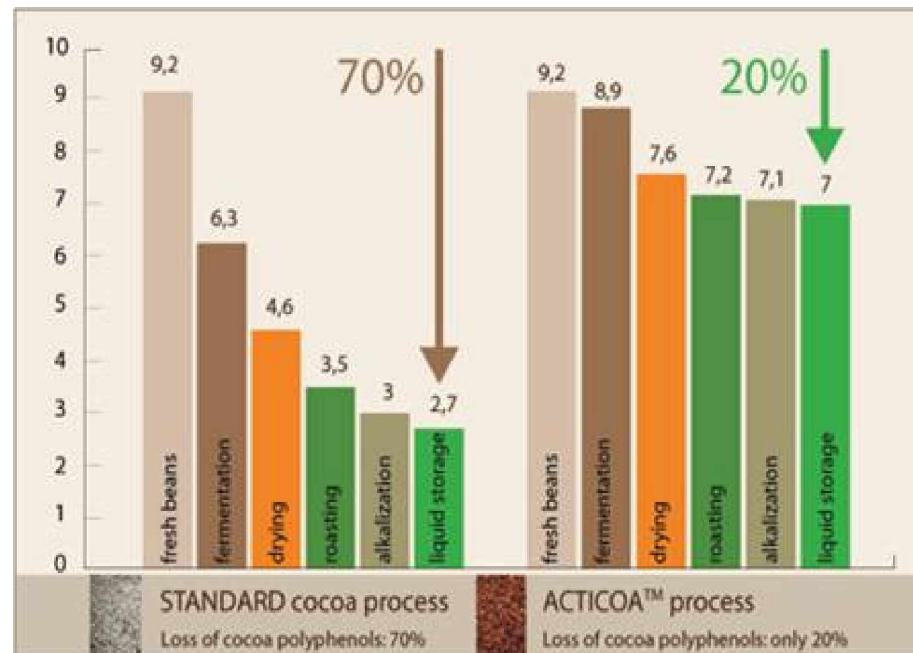
FLAVANOLS

Specific subclass of flavonoid compounds specifically recognized for their ability to act as antioxidants



ACTICOA® Process

- ✓ ACTICOA® chocolate is produced **without adding extracts or other chemical substances**
- ✓ ACTICOA® **preserves the natural high levels of active flavanols present in the cocoa bean**



- ✓ ACTICOA® makes the difference: this process **preserves up to 80% of the naturally present flavanols in the finished product**
- ✓ ACTICOA® cocoa and chocolate therefore offer **uniquely high amounts** of the natural antioxidants from the cocoa bean





EFSA Health claim



7 years of fundamental research

9 different countries tested

18 clinical research partners

500 healthy participants



EFSA Health claim

July 2012: The European Food Safety Authority gave a positive opinion :



“cocoa flavanols** help maintain endothelium- dependent vasodilation which contributes to normal blood flow”



cocoa flavanols contribute to a healthy blood flow

** Based on the intake of **200 mg cocoa flavanols** provided by 2,5 g high flavanol cocoa powder or 10 g high flavanol dark chocolate per day



ACTICOA® Consumer-Friendly Wording

Alternative claim wording, some examples:*



- ✓ ACTICOA® chocolate products are clinically-proven to improve blood flow.
- ✓ ACTICOA®, the natural, scientifically substantiated cocoa solution contributing to a healthy blood flow
- ✓ ACTICOA® is proven to stimulate blood flow ACTICOA® is effective to improve your blood flow and manage your well-being.
- ✓ Healthy veins, healthy blood flow
- ✓ Improves blood vessel health
- ✓ Enhances nutrient flow into the muscles
- ✓ Reduces cold feet and hands in the winter
- ✓ Improves blood flow to the brain

Any commercial claim with a scientific link to **improved blood circulation** can be requested to the European commission.

*Example Claims - All claims should be verified for legal and regulatory compliance





ACTICOA[®] Chocolate

Barry Callebaut has created a special process which retains the flavanols that naturally occur in cocoa beans that are normally lost during chocolate production

ACTICOA[®] Chocolate

- ✓ Retains the excellent flavor of true chocolate
- ✓ Is made using a special process that preserves 80% of the naturally occurring cocoa flavanols. Standard cocoa processing retains only 30% of cocoa flavanols
- ✓ Is produced without adding extracts – preserving those antioxidants that are naturally present in the cocoa bean
- ✓ Is a natural source of cocoa antioxidants





High Protein Innovations

- Vegetable Protein
- Greek Yogurt



Vegetable Protein - Pea

Ingredient Overview



- ✓ The use of vegetable protein, as an ingredient, is growing worldwide.
- ✓ Rich in protein.
- ✓ The extraction process eliminates most of pea-type flavors.
- ✓ Concentrated and highly digestible.



Nutritional Benefit



- ✓ The essential amino acid profile of vegetable proteins is very close to that of the ideal protein for human nutrition.
 - Lysine: human growth and bone health
 - Branched-chain amino acids: maintenance of muscle protein
 - Arginine: Physical effort and immune system efficiency
 - Glutamine + Glutamic acid: source of energy for muscles during stress

- ✓ Contains 80% unsaturated fatty acids, as opposed to high levels of saturated fatty acids in dairy proteins.



Green is Good!



- ✓ Introduction of peas in a conventional crop rotation enables a reduction in: fossil energy demand, greenhouse gas emissions, acidification, ozone formation.
 - Does not require nitrogen fertilizers.

- ✓ Pea Protein is extracted from dry pea (*Pisum sativum*) without the use of chemical solvents.

- ✓ When replacing dairy protein for pea protein there is a reduction in:
 - Water consumption
 - Feed plus cereal consumption
 - Animal waste (nitrogen and organic matter rejection)



Greek Yogurt Confectionery





Greek Yogurt Confectionery

Great combination of health and indulgence

- ✓ 2 - 3 x more protein than standard yogurt coating



Leverage the trend within the refrigerated yogurt category

Product Information:

- ✓ Offered in EZ melts or chip inclusions
- ✓ Ready to use for a variety of applications, including bakery, snacks, desserts or ice cream
- ✓ Handling and processing are the compounds



Sustainability in Every Aspect..

From farmer to consumer

Sustainable cocoa/chocolate





Partnering with farmers for sustainable cocoa cultivation

The Quality Partner Program is a long-term commitment based on direct partnerships between Barry Callebaut and selected cocoa farming cooperatives.



Let's keep the passion
burning...



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