<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:30</td>
<td>Welcome</td>
<td>Lars Frederiksen, CEO</td>
</tr>
<tr>
<td></td>
<td><strong>Cultures</strong></td>
<td></td>
</tr>
<tr>
<td>10:30 - 11:30</td>
<td>- What are cultures and enzymes</td>
<td>Knud Vindfeldt, EVP CED</td>
</tr>
<tr>
<td></td>
<td>- Emerging markets</td>
<td>Sten Estrup, Com. Development</td>
</tr>
<tr>
<td>11:30 - 11:45</td>
<td><strong>Break</strong></td>
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<tr>
<td>11:45 - 12:30</td>
<td><strong>Cultures continued</strong></td>
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<tr>
<td></td>
<td>- Innovation</td>
<td>Esben Laulund, Innovation</td>
</tr>
<tr>
<td></td>
<td>- Clinical studies incl. EFSA update</td>
<td>Birgit Michelsen, Scientific Marketing</td>
</tr>
<tr>
<td>12:30 - 13:15</td>
<td><strong>Lunch</strong></td>
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<tr>
<td>13:15 - 14:00</td>
<td><strong>Natural Colors</strong></td>
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</tr>
<tr>
<td></td>
<td>- What are natural colors</td>
<td>Carsten Bennike, EVP NCD</td>
</tr>
<tr>
<td></td>
<td>- Market potential/consumer trends</td>
<td>Peter Thorninger, Com. Development</td>
</tr>
<tr>
<td>14:00 - 14:15</td>
<td><strong>Break</strong></td>
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<tr>
<td>14:15 - 15:10</td>
<td><strong>Natural Colors continued</strong></td>
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<tr>
<td></td>
<td>- Application technology</td>
<td>Kim Binderup, Product Development</td>
</tr>
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<td></td>
<td>- Sustainable sourcing</td>
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</tr>
<tr>
<td></td>
<td>- Sales approach</td>
<td>Peter Thorningier</td>
</tr>
<tr>
<td>15:10 - 15:15</td>
<td><strong>Wrap up</strong></td>
<td>Lars Frederiksen</td>
</tr>
<tr>
<td>15:30 - 16:30</td>
<td><strong>Tour of facility</strong></td>
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</tbody>
</table>
Our vision remains: Improving food & health

- We want to innovate, produce and supply solutions that increase the success of our customers in selected food and health industries
- We strive to understand and document the health benefits of probiotics
- We see the opportunity of, over time, transforming Chr. Hansen into a life science company
- We build on our core competences to develop novel applications which support our vision
Three global mega trends supporting growth

- Growth in the industrial food production
- Increased focus on health and wellness
- Increasing consumer demand in emerging markets

Size and expected growth in markets relevant for dairy cultures

Millions tons of industrialized end-product (cheese, fermented milk and probiotics)

Source: Chr. Hansen market intelligence survey
Our business model is intact

Growth

Entry barriers

Scalability

A trusted name in the industry

Scalable business model

Long-term customer relationships and intimacy

Strategic ingredients with a high value to cost ratio

EBIT margin

Time

Fundamental growth

Market expansion through conversion

Market expansion through greater functionality

Market share growth

Existing market

Potential market

5% global market share:

Chr. Hansen
Despite change to business mix

Cultures & Enzymes
- Good growth in regular cultures for cheese and yoghurt while probiotic cultures negatively effected by EFSA uncertainty

Health & Nutrition
- Continued double digit growth

Natural Colors
- Exceptional growth in natural colors driven by accelerated conversion and inflated sales prices due to increased raw material prices
Cultures & Enzymes Division
- Cement market leadership

Goals...

- Strengthen our market leader position in dairy cultures and enzymes
- Develop sustainable and leading position in businesses beyond dairy

... embedded in four strategic objectives

1. Improve our ability to document value creation at customers
2. Continuous innovation through fast and close customer understanding and interaction
3. Efficient planning and production with yield improvements
4. New business based on our technology and knowledge platform
Health & Nutrition Division
Human health

Goals...

- Strengthen market leadership in probiotics for Dietary Supplements
- Penetrate the Infant Formula segment
- Expand probiotics business in the OTC segment

...embedded in four strategic objectives

1. Grow the existing dietary supplements business
   - Obtain documentation and 13.5 EFSA claims on key products

2. Make probiotics a “must have” for Infant Formula
   - Build stronger relationships with global and strong local producers of instant formula

3. Leverage probiotics knowledge into the over-the-counter segment

4. Expand our presence globally
   - Asia and South America
Health & Nutrition Division
Animal health

Goals...

- Gain market share leadership in key segments
- Expand the business with new innovations and new markets

... embedded in four strategic objectives

1. Grow the business within key segments:
   - Cattle, poultry and swine

2. Focus on documentation of product performance
   - Document product claims, economic benefit and positioning with solid data

3. Expand the business into new markets
   - E.g. penetrate Asia through partnerships

4. Develop biotech innovations for the agricultural industry
   - E.g. commercialize bacillus-based product for plant health in collaboration with FMC Corporation
Natural Colors Division
- Seize the moment

Goals...

- Expand the use of natural colors through conversion
- Broaden the portfolio through innovation
- Superior application knowledge matching the needs of multinationals

... embedded in four strategic objectives

1. Capture the conversion potential in our focus industries: Beverages, Confectionery, Ice-cream and Prepared foods
2. Maintain market leadership within mature industries: Dairy and Fruit Prep
3. Understand our customer’s innovation needs and ensure that paradigm shifts originate from Chr. Hansen
4. Strengthen set-up and structure of sourcing and product supply
### Our long term ambitions maintained

Long term ambitions (3-5 years) based on unchanged business mix (November 2010)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>8-10%</td>
<td>Gradual increase</td>
<td>14-17%</td>
<td>6.5-7.5%</td>
<td>-6%</td>
<td></td>
<td>2.2-2.5</td>
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</tbody>
</table>

#### 2010/11 (July 2011)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>14-15%</td>
<td>At or above 25%</td>
<td>In line with long term target (14-17%)</td>
<td>(6.5-7.5%)</td>
<td>-6%</td>
<td>-26%</td>
<td>-2.0</td>
</tr>
</tbody>
</table>

* Includes capitalized development costs
<table>
<thead>
<tr>
<th>DSB</th>
<th>TDC</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acting CEO</td>
<td>CEO/Senior Executive Vice President, Business Nordic</td>
<td>Chairman of Faroese Telecom (May 2010 - )</td>
</tr>
<tr>
<td>CFO</td>
<td>CEO TDC Shared Services (2004-2005)</td>
<td>Education: M.Sc. in Business Economics from Aarhus School of Business</td>
</tr>
</tbody>
</table>

**Klaus Pedersen**
CFO Chr. Hansen

- **DSB**
  - Acting CEO (March 2011 - Sept 2011)
  - CFO (Nov 2010 - March 2011)

- **TDC**
  - CEO/Senior Executive Vice President, Business Nordic (2005-2009)
  - CEO TDC Shared Services (2004-2005)
  - CFO, Sunrise (TDC Switzerland) (2001-2004)

- **Other**
  - Chairman of Faroese Telecom (May 2010 - )
  - (Member since May 2009)
  - Education: M.Sc. in Business Economics from Aarhus School of Business (1992)
Cultures

Natural red
## Speakers

<table>
<thead>
<tr>
<th>Knud Vindfeldt</th>
<th>Esben Laulund</th>
<th>Sten Estrup</th>
<th>Birgit Michelsen</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVP head of CED and member of executive management</td>
<td>SVP Innovation, CED</td>
<td>SVP Commercial Development, CED</td>
<td>Director, Scientific Marketing</td>
</tr>
<tr>
<td>Previously at Tholstrup Cheese and Arla Foods</td>
<td>Previously at Danish Dairy Board</td>
<td>Previously at Arla Foods</td>
<td>Previously at Ferrosan, BASF and Danisco</td>
</tr>
</tbody>
</table>
Agenda

Cultures

What are cultures and enzymes

Emerging markets

Innovation

Clinical studies
Site Avedoere
What are cultures and enzymes?

What they are:
- Natural live bacteria - mainly lactic acid bacteria

What they do:
- Vital to the manufacturing of cheese and yogurt
- Provide features such as texture and flavor

How they are made:
- Produced by fermentation and supplied in concentrated ready-to-use forms (frozen or freeze dried)
Cultures are used in the dairy, meat and wine industries

<table>
<thead>
<tr>
<th>Product area</th>
<th>Technology</th>
<th>Description / featured benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese</td>
<td>Cultures</td>
<td>Acidification of milk assisting coagulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of cheese flavor and texture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved yield, process speed and consistency</td>
</tr>
<tr>
<td>Fermented milk (e.g. yogurt)</td>
<td>Cultures, Probiotics</td>
<td>Acidification of milk needed for milk clotting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of flavor and texture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gut health maintenance (Probiotics)</td>
</tr>
<tr>
<td>Meat</td>
<td>Cultures</td>
<td>Acidification of fermented meat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accelerated meat ripening speed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased product consistency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved product preservation, texture and flavor</td>
</tr>
<tr>
<td>Wine</td>
<td>Cultures</td>
<td>Improved process speed and consistency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved taste</td>
</tr>
</tbody>
</table>
How do we produce cultures

Raw materials

Media

UHT process

Culture bank Hoersholm

PIM*

DIM**

Fermentation

By-product

Concentration

Clean rooms

Pelletizing

Packaging

Freeze-drying

Freeze Dried

Packaging

Frozen

* PIM: Pre Inoculation Material
**DIM: Direct Inoculation Material
***CIP: Clean In Place
***SIP: Sterilization In Place
Different growth drivers

**Fundamental growth**

- GDP growth
- Increased demand for healthy food
- Increase in middle income groups in emerging markets

**Conversion**

**Greater functionality**

Probiotics penetration (volume)

- Probiotic Yogurt
- Non-probiotic Yogurt

Penetration

GDP growth
Increased demand for healthy food
Increase in middle income groups in emerging markets

Non-probiotic Yogurt
Agenda

Cultures

What are cultures and enzymes

Emerging markets

Innovation

Clinical studies
Emerging dairy markets
- Impact for Chr. Hansen

- Driving growth in global milk production, Asia at 4.4%, higher in India and China
- Major part of 766 millions world population growth by 2020
- Middle class grow by 70 millions per year to become 800 millions people by 2020
- Diet change from grain to “high value” meat and dairy
- Massive urbanization drive GDP growth, shift from home cooking to convenience and packaged foods - and enabler for distribution of dairy products
- Customer consolidation and geographic expansion enable use of modern culture and enzyme technologies
- Customers addressing bottom of pyramid with basic and affordable dairy nutrition
Economic development is driving yogurt and cheese consumption
Room for growth in emerging economies

Note 1: Consumption figures include sour milk (e.g. butter milk)
Sources: Euromonitor 2009 (yogurt and cheese consumption, respectively and population)
Brazil
From early entry to next level

- Robust quality solution to meet higher demand for Mozzarella
- Offsetting high cost of capital making good Grana cheese faster
- Using bioscience to tap into large non-industrial cheese market
Russia
From early entry to next level

- 50 small-mid sized dairies being acquired by 2 major dairies last 5-10 years
- Danone-Unimilk merger in 2011
- PepsiCo acquire Wimm-Bill-Dann in 2011
- Extending shelf life from 1 to 3 weeks enable consolidation of production and distribution
- Customer loyalty from intensive process and quality training of local customer staff
China
Early investments paying off

- Mengiu & Yili, from local Mongolian based players to global top 20 dairy in 10 years

- Consolidation by key players expanded from milk land to big cities

- Yogurt consumption still around 2kg/capita, but 5 kg/”middle class” capita

- Estimating a “middle class” of 250 millions in China
India
Readiness is key for market in transition

- India is only 1-2 kg/capita of packaged yoghurt

- Largest milk producer in the world (+10 million tons/year), only 7% into fermented milk

- Assisting customers driving industrialization and converting milk into value-added yogurt products

- 1 billion people in bottom of the pyramid, demand for basic and affordable dairy nutrition, enable packed food for aspiring middle class

Established own office in 2004
Organization: ~100 incl. dahi pilot project
India
Fermented milk market is 7 million tons/year ~ 25% global volume

Market trend

Organized Sector
(6%)
- Make at least 500 kg per day
- Sold branded in pouches or cups
- Infrastructure in place for distribution to retailers
- Culture: DVS solution

Informal Sector
(22%)
- Make 20-50 kg per day
- Sweetmeat shops, caterers, restaurants over the counter
- Culture: Previous day’s dahi or dahi from organized sector

Household Sector
(72%)
- Make 0.5-1 kg per day
- Prepared and consumed at home
- Culture: Previous day’s dahi or dahi from organized sector

Note 1: Euromonitor 2009, organized, informal and household sector relative to global retail market
Source: Market characteristics based on Chr. Hansen estimates
“CIVETS” opportunities for the future
We have invested in people and infrastructure, building customer intimacy

Local experts in more than 30 countries

<table>
<thead>
<tr>
<th>CIVETS (population)</th>
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</thead>
<tbody>
<tr>
<td>Colombia (47m)</td>
</tr>
<tr>
<td>Indonesia (243m)</td>
</tr>
<tr>
<td>Vietnam (88m)</td>
</tr>
<tr>
<td>Egypt (85m)</td>
</tr>
<tr>
<td>Turkey (73m)</td>
</tr>
<tr>
<td>South Africa (49m)</td>
</tr>
</tbody>
</table>

CIVETS country
Direct sales force
Distributors
BREAK
Agenda

Cultures

What are cultures and enzymes

Emerging markets

Innovation

Clinical studies
R&D organization in Chr. Hansen

Objective

- Ensure new product and process development
- Business support
- Develop right competences
- Prepare future pipeline

Corporate Management

HND
- Innovation
- 40 employees

CED
- Innovation
- 185 employees
- ~25% Ph.D.
- ~25% Scientists
- ~50% Technicians etc.

NCD
- Innovation
- 40 employees

Global Sales
- ITC
- 70 employees
- *Global Sales ITC & Technical application

185 employees 40 employees 70 employees

*Global Sales ITC & Technical application
Chr. Hansen culture competences

- Platform based on deep technological knowledge and market understanding...
  - Strains, Metrics, Process, Product and application,
  - Probiotic screening
  - Library of over 10,000 microorganisms
  - Documentation

- ...Strong basis for innovation...
  - New applications, concepts (products)
  - Stable processes, Better yields, Lower unit costs (processes)

- ...in close cooperation with customers
  - 19 application centers around the world
  - Focused customer service
  - Local adaptation,
  - Trouble shooting

Collaboration with universities, research institutes and customers
## Four platforms enable innovation value creation

<table>
<thead>
<tr>
<th>Platform</th>
<th>New product development</th>
<th>Productivity improvement</th>
<th>Business support</th>
<th>Research competences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Product</strong></td>
<td>Develop cultures and enzymes</td>
<td>Set product specifications</td>
<td>Technical sales service</td>
<td>Flavor, Texture Composting,</td>
</tr>
<tr>
<td>and technology</td>
<td></td>
<td></td>
<td></td>
<td>Coagulation</td>
</tr>
<tr>
<td><strong>2 Process</strong></td>
<td>Develop processes for new cultures &amp; enzymes</td>
<td>Increase yield and stability</td>
<td>Production trouble shooting</td>
<td>Bio-processing, Fermentation</td>
</tr>
<tr>
<td><strong>3 Strain</strong></td>
<td>Screen, select and improve culture performance</td>
<td>Medium design</td>
<td>Scientific information</td>
<td>Microbial Physiology, Strain</td>
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<tr>
<td><strong>knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td>development, Bacteriophages</td>
</tr>
<tr>
<td><strong>4 Metrics</strong></td>
<td>Identify and set specification for new cultures and enzymes</td>
<td>Identify and set specification for production parameters</td>
<td>Product analysis and performance evaluation</td>
<td>Product performance Microbial</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td>taxonomy</td>
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</tbody>
</table>

34
Bringing ideas to life

Development procedure

1. Strain selection
2. Culture blends
   - Strain 1
   - Strain 2
   - Strain 3
3. Characterization
Strategic projects create potential

Major leap in product performance realized in strategic projects

Value proposition

Strategic project

Line projects

Customer projects build on it

How Chr. Hansen captured the US cheddar culture market (process)

Value proposition

Easy-Set

Quality USA Cheddar

Activity (Super Emil)
USA cheddar

Easy-Set

Activity (Emil)
USA cheddar

Easy-Set

Activity (Booster)
USA cheddar

Phage-resistant
UK Cheddar

DVS

DVS

Activity (RST)
UK cheddar

Yo-Flex – a strategic project (product)

Viscosity
- Extra High
- Very High
- High
- Low

Mouth thickness

Flavor intensity
- Strong
- Medium
- Very Mild

Low fat

Product Differentiation

YoFLY
Drinkable yogurts

2010/11

2009
YoFlex

2006

2002

1996

1988

2010/11

YoFLY
Drinkable yogurts

Product Differentiation

Low fat

2009
YoFlex

2006

2002

1996

1988

2010/11

YoFLY
Drinkable yogurts

Product Differentiation

Low fat

2009
YoFlex

2006

2002

1996

1988
Global platform with local reach
Close customer interaction

- Application centers

Application centers meeting local challenges

- Adapt products to customers production processes
- Adapt customers production processes to Chr. Hansen products
- Difference in milk quality
- Local preferences
A company of opportunities

- Product and technology
- Process
- Strain knowledge
- Metrics
- Probiotics

**IMPROVING FOOD & HEALTH**
- Expert in bioscience
- Growth in industrialized markets
- Growth in emerging markets
- New dairy applications
- New food applications
- Food safety

**IMPROVING HEALTH**
- Front runners in probiotics
- Women’s Health
- Infant Health
- Gastrointestinal Health
- Animal Health
- Immune Health

**BIOSCIENCE PLATFORM**

**IMPROVING FOOD**
- New dairy applications
- Growth in emerging markets
- Food safety

**IMPROVING HEALTH**
- New food applications
- Growth in industrialized markets
- Expert in bioscience
Clinical documentation

Drivers

- Regulatory demands
- Consumers
- Documentation quality as point of differentiation
Clinical documentation -
From proof of principle to confirmatory studies

Food supplements pre EFSA:
In market without claim approval

Food supplements now:
Claim approval needed

Phase 1
15-30 pts
Lab & animal studies

Phase 2
<100 pts

Phase 3
100-1000 pts

Phase 4

Indication & Marketing authorization
Documenting effects of probiotics is challenging

**Medicinal product**  
Single target  
Large effect  
Patients

**Probiotic**  
Multiple targets  
Smaller effects  
Healthy general population
Chr. Hansen Strategy
Indication areas

Immune Health
Gastrointestinal Health
Women's Health
Infant Health
Our strategy:
Best documented probiotics in market

- Strategic focus area
- In house competencies in clinical research
- Clinical study program
  - Chr. Hansen sponsored studies
  - Academia based clinical research
- Collaboration with key customers
Chr. Hansen sponsored study
BB-12® and L. casei 431® within immune health

Study design

- Randomized, double-blind, placebo-controlled study in 220 healthy adults
- Daily supplementation with BB-12®, L. casei 431® or corresponding placebo
- Influenza vaccine given to trigger response of the immune system
- Immune response (antibodies) to vaccine assessed
- Vaccine study recommended by experts as best model available to study the immune system
Chr. Hansen sponsored study
BB-12® and L. casei 431® within immune health

Study Flow Chart

<table>
<thead>
<tr>
<th>Screening period</th>
<th>Supplementation period</th>
<th>Follow-up period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day -14</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>112</td>
</tr>
</tbody>
</table>

- Screening visit
  - Eligibility check

- Vaccination visit

- Randomization visit
  - Randomization
  - Collection of blood and saliva samples

- Evaluation visit
  - Collection of blood and saliva samples

- Follow-up
Chr. Hansen sponsored study
BB-12® and L. casei 431® within immune health

Results:
Greater increase in specific antibody response after vaccination in BB-12® group vs. placebo
Customer collaboration project
LA-5® and BB-12® in the prevention of Antibiotic Associated Diarrhea in Indian adults

Study Design
- Randomized, double-blind, placebo-controlled
- 343 adults under antibiotic treatment
- 4 billion CFU/day in capsules
- 2 weeks duration. First week with concurrent antibiotic treatment

Endpoints:
- Incidence, duration and severity of diarrhea

Results
- Significantly reduced duration of diarrhea in probiotic group compared to placebo (figure)
- Significant reduction in severity of diarrhea (manifested as watery stool) in the probiotic group (31.6% vs. 96.0%)
- Non significant reduction of incidence of diarrhea in probiotic group (10.8% vs. 15.6%)

Conclusion
- BB-12® and LA-5® reduced duration and severity of diarrhea
### EFSA Status

**Transition period for all Article 13.1 claims will extend at least into mid-2012**

<table>
<thead>
<tr>
<th>Nov 2009 - Jul 2011</th>
<th>(1H 2012)</th>
<th>?</th>
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</thead>
<tbody>
<tr>
<td>EFSA opinion Batch 1 - 6</td>
<td>EC publication positive list</td>
<td>Parliament hearing period</td>
</tr>
<tr>
<td></td>
<td>EC positive list final</td>
<td>Transition period 6 months</td>
</tr>
<tr>
<td>Opportunity to resubmit data</td>
<td>National enforcement of EU regulation</td>
<td>Rejected claims to be taken off labels</td>
</tr>
</tbody>
</table>

### Impact on Chr. Hansen

- **Short term:** Negative effect from uncertainty
- **Long term:** Well positioned with documented strains and competencies to carry out necessary clinical studies

### Status

- Positive results from Immune Study
- Three studies in the process
- Filing of 13.5 claims when sufficient data available and solid understanding of requirements
EFSA status

April 2011:

EFSA Guidance document on claims related to gastrointestinal and immune health

September 2011:

EFSA Scientific Opinion on Statistical Significance and Biological Relevance

--

Information gained from negative opinions under 13.5 published by EFSA

Chr. Hansen clinical studies aligned with current EFSA recommendations
L U N C H
<table>
<thead>
<tr>
<th>Time</th>
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<td>Welcome - Chr. Hansen Business Direction</td>
<td>Lars Frederiksen, CEO</td>
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<td>Cultures - What are cultures and enzymes - Emerging markets</td>
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<tr>
<td>14:00 - 14:15</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>14:15 - 15:10</td>
<td>Natural Colors continued - Application technology - Sustainable sourcing - Sales approach</td>
<td>Kim Binderup, Product Development; Peter Thorninger</td>
</tr>
<tr>
<td>15:10 - 15:15</td>
<td>Wrap up</td>
<td>Lars Frederiksen</td>
</tr>
<tr>
<td>15:30 - 16:30</td>
<td>Tour of facility</td>
<td></td>
</tr>
</tbody>
</table>
Natural Color Opportunities
Presentation of Natural Colors Division
### Speakers

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carsten Bennike</td>
<td>EVP head of Natural Colors Division and member of executive management</td>
<td>Joined Chr. Hansen in 2011, Previously at Hempel and Cadbury</td>
</tr>
<tr>
<td>Peter Thorninger</td>
<td>VP Commercial Development Natural Colors Division</td>
<td>Joined Chr. Hansen in 2009, Previously at Boston Consulting Group</td>
</tr>
<tr>
<td>Kim Binderup</td>
<td>VP Product development Natural Colors Division</td>
<td>Joined Chr. Hansen in 2009, Previously at Boston Consulting Group</td>
</tr>
</tbody>
</table>
Agenda

Natural Colors

- What are natural colors
- Market potential and consumer trends
- Application technology
- Sustainable sourcing
- Sales approach
Natural Colors Division
- Seize the moment

**Goals...**
- Expand the use of natural colors through conversion
- Broaden the portfolio through innovation
- Superior application knowledge matching the needs of multinationals

**... embedded in four strategic objectives**

1. Capture the conversion potential in our focus industries: Beverages, Confectionery, Ice-cream and Prepared foods
2. Maintain market leadership within mature industries: Dairy and Fruit Prep
3. Understand our customer’s innovation needs and ensure that paradigm shifts originate from Chr. Hansen
4. Strengthen set-up and structure of sourcing and product supply
3 extraction sites, 2 R&D centers and 4 regionally located blending sites

- North America, West Allis
- Peru, Lima
- Brazil, Valinhos
- Denmark, Avedoere
- Italy, Canossa
- China, Tianjin
- R&D Centers
  1) Hoersholm
  2) Montpellier

Major site
Minor blending site
Chr. Hansen with focus on natural colors

Coloring foodstuff
- Juices, extracts and coloring food ingredients (e-number free)

Natural colors
- Extracted from biological sources mainly plant-derived, but also from fungi, algae and insects

Nature-identical colors
- Colors found in nature, but produced ‘chemically’

Synthetic colors
- Not found in nature - made ‘chemically’

Inorganic colors
- E.g. TiO₂, gold, silver
Natural colors are sold into a variety of food industries and applications

<table>
<thead>
<tr>
<th>Beverages</th>
<th>Dairy &amp; spreads</th>
<th>Confectionery</th>
<th>Ice cream</th>
<th>Fruit prep</th>
<th>Prepared food</th>
<th>Other</th>
<th>Meat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder soft drinks</td>
<td>Cheese</td>
<td>Dragee</td>
<td>Popsicles</td>
<td>Yoghurt</td>
<td>Bakery</td>
<td>Wine</td>
<td>Sausages</td>
</tr>
<tr>
<td>Carbonated soft drinks</td>
<td>Yoghurt</td>
<td>Wine-gums</td>
<td>Ice cream</td>
<td>Cookies</td>
<td>Cereals</td>
<td>Other food and beverage applications</td>
<td>Savory</td>
</tr>
<tr>
<td>Functional drinks</td>
<td>Desserts</td>
<td>Soft dragee</td>
<td></td>
<td>Cakes</td>
<td>Soups &amp; sauces</td>
<td>Snacks</td>
<td></td>
</tr>
<tr>
<td>Fruit &amp; vegetable juices</td>
<td>Butter &amp; margarine</td>
<td>Extruded</td>
<td></td>
<td>Beverages</td>
<td>Snacks</td>
<td>Ready meals</td>
<td></td>
</tr>
<tr>
<td>Alcoholic beverages</td>
<td></td>
<td>Chewing gum</td>
<td></td>
<td></td>
<td>Preserved food</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Image of beverages, dairy & spreads, confectionery, ice cream, fruit prep, prepared food, other, and meat categories with icons representing each category.
Main colors
Red, orange and yellow shades

<table>
<thead>
<tr>
<th>Industry</th>
<th>Share of Shades</th>
<th>Product groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverage</td>
<td></td>
<td>Formulated colors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Encapsulated colors with better stability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Emulsified colors soluble in water</td>
</tr>
<tr>
<td>Confectionery</td>
<td></td>
<td>Standard Pigments (non-formulated)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Carmine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Annatto</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Turmeric</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Beta carotene</td>
</tr>
<tr>
<td>Ice Cream</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Euro-monitor 2008 & Innova GNPD launches
Agenda

Natural Colors

- What are natural colors
- **Market potential and consumer trends**
- Application technology
- Sustainable sourcing
- Sales approach
### Three strong growth drivers for natural colors

**Regulation, consumer trends and labelling**

<table>
<thead>
<tr>
<th>Key growth drivers in natural colors</th>
<th>Implication for natural colors market</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regulation</strong></td>
<td></td>
</tr>
<tr>
<td>➢ Warning label on Southampton six colors in EU from July 2010 - latest adopted by Russia</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td>➢ FDA did a public hearing including vote on labelling (March 2011)</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td><strong>Consumer health concerns</strong></td>
<td></td>
</tr>
<tr>
<td>➢ Trend towards fewer and more natural ingredients and away from artificial additives</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td>➢ A focus on sustainable and renewable sources</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td><strong>Labelling trends</strong></td>
<td></td>
</tr>
<tr>
<td>➢ EU: Push towards clean labelling — no E-numbers</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td>➢ Additive regulation in US</td>
<td>![Upward Arrow]</td>
</tr>
<tr>
<td><strong>Price pressure &amp; fluctuations</strong></td>
<td>![Downward Arrow]</td>
</tr>
<tr>
<td>➢ Technical challenges on stability</td>
<td>![Downward Arrow]</td>
</tr>
<tr>
<td>➢ Price point of natural vs. synthetic</td>
<td>![Downward Arrow]</td>
</tr>
<tr>
<td>➢ Raw-material fluctuations making conversion more risky for the big brands</td>
<td>![Downward Arrow]</td>
</tr>
<tr>
<td>➢ CSR issues</td>
<td>![Downward Arrow]</td>
</tr>
</tbody>
</table>
Strong conversion potential for natural colors in food and beverages

2011 Est. global food & beverages color market (EUR millions)

- Natural colors\(^1\): ~600
- Natural identical: ~165
- Synthetic colors: ~450

2011 Est. natural color penetration (Volume)

- Natural color: ~20%
- Full potential: ~EUR 3.0 billion

Note\(^1\): Natural market includes coloring Foodstuff segment of EUR 50–100 millions
Source: Industry reports (SRI, F&S, RTS; The Food Group); EIU; Management estimates
Largest potential in Asia (ex. Japan), North America and South America

Natural colors penetration in food and beverages (volume)

% of new launches of confectionery that contains natural colors

Source: Management estimate

Note 1: Asia, Pacific, Middle East and Africa excluding Japan
Source: Mintel NPD database, 2007-10
Different stages in different regions
Private label move in “mature” markets; Branded products in “emerging” markets

North America

Canada, 2009
Claim “natural colors”

South America

Peru
Claim “without artificial colors”

Europe

UK’s largest supplier in the private label sector
Europe’s largest producer of jelly beans
17% growth since change to natural

Confectionery giants head industry move to natural, Leatherhead
By Helen Glaberson, 20-Aug-2011
Related topics: Financial & Industry, Chocolate and confectionery ingredients

Confectionery giants such as Nestlé, Haribo and Cadbury have been at the forefront of efforts to move away from artificial additives, as the general industry makes a shift to natural food products, according to Leatherhead Food Research.

Over the past few years, confectioners have been responding to consumer concerns over artificial additives and ingredients, said the market researcher in its recent Food Industry Update report.

Studies questioning health risks posed by artificial colours such as tertammine have also helped sparked the trend towards natural, with high levels of new product activity in the area, said Leatherhead.

Source: GNPD, Mintel Group

APMEA

Private label
Country: Australia 2010
Claim: Natural color
Recent Chr. Hansen and AC Nielsen study
86% of consumers follows news stories about colors

**Question:** To what extent do you follow (read, watch, listen to) news stories about the use of synthetic vs. natural colors?

<table>
<thead>
<tr>
<th>Extent of Following</th>
<th>Total</th>
<th>China</th>
<th>India</th>
<th>Brazil</th>
<th>Russia</th>
<th>Mexico</th>
<th>Poland</th>
<th>Australia</th>
<th>UK</th>
<th>France</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>14%</td>
<td>7%</td>
<td>14%</td>
<td>5%</td>
<td>8%</td>
<td>12%</td>
<td>15%</td>
<td>17%</td>
<td>21%</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>I follow only headlines</td>
<td>18%</td>
<td>20%</td>
<td>34%</td>
<td>34%</td>
<td>12%</td>
<td>12%</td>
<td>17%</td>
<td>23%</td>
<td>24%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>I follow some of it</td>
<td>35%</td>
<td>43%</td>
<td>32%</td>
<td>32%</td>
<td>49%</td>
<td>42%</td>
<td>36%</td>
<td>36%</td>
<td>36%</td>
<td>30%</td>
<td>28%</td>
</tr>
<tr>
<td>I follow most of it</td>
<td>24%</td>
<td>29%</td>
<td>17%</td>
<td>9%</td>
<td>13%</td>
<td>22%</td>
<td>24%</td>
<td>19%</td>
<td>16%</td>
<td>14%</td>
<td>15%</td>
</tr>
<tr>
<td>I follow everything</td>
<td>10%</td>
<td>17%</td>
<td>17%</td>
<td>17%</td>
<td>5%</td>
<td>3%</td>
<td>5%</td>
<td>3%</td>
<td>3%</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Recent Chr. Hansen and AC Nielsen study
92% of consumers are concerned about synthetic colors

**Question:** To what extent are you concerned about usage of synthetic colors in food & beverage?

<table>
<thead>
<tr>
<th>Level</th>
<th>Total</th>
<th>China</th>
<th>Russia</th>
<th>Brazil</th>
<th>Poland</th>
<th>India</th>
<th>Australia</th>
<th>Mexico</th>
<th>France</th>
<th>UK</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>8%</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
<td>5%</td>
<td>6%</td>
<td>7%</td>
<td>7%</td>
<td>13%</td>
<td>13%</td>
<td>19%</td>
</tr>
<tr>
<td>Little concerned</td>
<td>19%</td>
<td>12%</td>
<td>27%</td>
<td>26%</td>
<td>20%</td>
<td>13%</td>
<td>24%</td>
<td>17%</td>
<td>25%</td>
<td>27%</td>
<td>23%</td>
</tr>
<tr>
<td>Somewhat concerned</td>
<td>37%</td>
<td>60%</td>
<td>62%</td>
<td>37%</td>
<td>51%</td>
<td>31%</td>
<td>39%</td>
<td>44%</td>
<td>37%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Very concerned</td>
<td>36%</td>
<td>34%</td>
<td>25%</td>
<td>25%</td>
<td>50%</td>
<td>29%</td>
<td>32%</td>
<td>25%</td>
<td>22%</td>
<td>21%</td>
<td></td>
</tr>
</tbody>
</table>

USA: 21%, UK: 22%, France: 25%, Brazil: 25%, Poland: 29%, India: 31%, Mexico: 44%, Australia: 39%, Russia: 37%, China: 60%.
Recent Chr. Hansen and AC Nielsen study
Most consumers have noticed color claims

Question: Have you ever noticed a color claim on front of a food & beverage product?

[Chart showing color claims across different countries and genders]
Question: What does color claims imply to you, when you are buying a food & beverage product?

Recent Chr. Hansen and AC Nielsen study
Different reflections upon natural colors

- Improved food safety: 47% of Total Global Consumers
- Responsible manufacturer: 46%
- I´m protecting my children from synthetic colors: 37%
- Makes me feel better: 32%
- Improved nutritional value: 27%
- High manufacturing costs: 11%
- The product does not have the colors I´m used to: 8%
- None of the above: 6%
- Don´t know: 9%

41% among women
32% among men
Recent Chr. Hansen and AC Nielsen study
78% of consumers are prepared to pay more for natural colors

Question: To what extent would you be prepared to pay more for a food & beverage product if it contains natural colors compared to the similar product containing synthetic colors?

Not at all: 22%
I would pay a little more: 46%
I would pay somewhat more: 26%
I would pay much more: 6%

Total: 100%

France: 45%
India: 6%
China: 9%
Poland: 10%
Russia: 10%
Brazil: 16%
Mexico: 30%
Australia: 36%
UK: 40%
USA: 45%

Other countries: 1%
### Key issues working with “mother nature”

<table>
<thead>
<tr>
<th>Issue</th>
<th>Natural colors</th>
<th>Synthetic colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Often light, oxygen, pH and heat sensitive</td>
<td>Very stable at typical conditions</td>
</tr>
<tr>
<td>Shades</td>
<td>Gaps in color palette for some applications</td>
<td>Full spectrum available</td>
</tr>
<tr>
<td>Raw material variation</td>
<td>Often difference between suppliers, harvests, and sources</td>
<td>None</td>
</tr>
<tr>
<td>Food/ beverage matrix</td>
<td>Occasional interaction with other ingredients (e.g. flavors)</td>
<td>Rarely issues</td>
</tr>
<tr>
<td>Impurities</td>
<td>Compound found naturally in product occasionally gives issues (e.g. off-flavor)</td>
<td>Rarely issues</td>
</tr>
</tbody>
</table>
We work with our customers at different stages...

<table>
<thead>
<tr>
<th>Customer type</th>
<th>Typical level of engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>International key account</td>
<td>- Joint R&amp;D projects covering entire value chain</td>
</tr>
<tr>
<td>Focus customer</td>
<td>- Customization to optimize products for customer applications</td>
</tr>
<tr>
<td>Other customers</td>
<td>- Blending of existing products and technical support</td>
</tr>
<tr>
<td>Distributors</td>
<td>- Blending of existing products</td>
</tr>
</tbody>
</table>
...Creating value from four platforms

**Platform**

1. **Pigment chemistry**
   - Evaluate new & existing raw materials for natural colors
   - Pigments & contaminant analysis

2. **Formulation**
   - Recipe for converting pigment into natural color product

3. **Process**
   - Design extraction and formulation processes

4. **Application**
   - Customize products to ensure performance in customer’s application
Pigment chemistry and formulation knowledge required

**Pigment chemistry is basis of our business**

- Identify new pigment sources

**Formulation: Effect of emulsion**

- Extraction raw materials with approved solvents
- Oleoresins and purified crystals

- Yellow/orange pigments are oil-soluble
- Formulation to avoid separation & creaming

- Emulsion to make pigments water-dispersible and to bring technical features

- High color potency, excellent brightness
- Easy-to-use formulation, concentrated colors
Different challenges in converting
Typical considerations when panning with natural colors

<table>
<thead>
<tr>
<th>Dimension</th>
<th>What you must consider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of panning</strong></td>
<td>Type of panning influence color appearance</td>
</tr>
<tr>
<td><em>soft</em></td>
<td></td>
</tr>
<tr>
<td><em>hard</em></td>
<td></td>
</tr>
<tr>
<td><strong>pH of syrup</strong></td>
<td>Many natural colors change shade according to pH</td>
</tr>
<tr>
<td><em>pH 3.3</em></td>
<td></td>
</tr>
<tr>
<td><em>pH 7.5</em></td>
<td></td>
</tr>
<tr>
<td><strong>Syrup heat treatment</strong></td>
<td>Heat treatment of syrup can change the shade</td>
</tr>
<tr>
<td><em>20º</em></td>
<td></td>
</tr>
<tr>
<td><em>80º</em> for 2 hrs</td>
<td></td>
</tr>
<tr>
<td><strong>White precoating</strong></td>
<td>Dark background color from e.g. chocolate gives dull colors</td>
</tr>
<tr>
<td>-<em>TiO₂</em></td>
<td></td>
</tr>
<tr>
<td>+<em>TiO₂</em></td>
<td></td>
</tr>
<tr>
<td><strong>Ingredients in centers</strong></td>
<td>Flavors and low pH in centers may change the shade</td>
</tr>
<tr>
<td>+<em>shellac</em></td>
<td></td>
</tr>
<tr>
<td>-<em>shellac</em></td>
<td></td>
</tr>
</tbody>
</table>
### Different challenges in converting
### Typical considerations when panning with Natural Colors

<table>
<thead>
<tr>
<th>Dimension</th>
<th>What you must consider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drying</strong></td>
<td>- Humidity can cause resolution and recrystallization of sugar</td>
</tr>
<tr>
<td><strong>Metals</strong></td>
<td>- Colors like red beet and anthocyanin sensitive to metallic ions</td>
</tr>
<tr>
<td><strong>Light stability &amp; packaging</strong></td>
<td>- Light exposure might influence colors</td>
</tr>
<tr>
<td><strong>Polishing</strong></td>
<td>- Color changed by water based polishing material</td>
</tr>
<tr>
<td><strong>Off-flavor</strong></td>
<td>- Inherent off-notes for certain pigments at high dosages</td>
</tr>
</tbody>
</table>
Red Strawberry Fragaria: Re-inventing Carmine

New carmine solution for yogurt & fermented milk

New patent pending carmine solution improves the color stability in yogurt fruit preparations.

Applications:
- Yogurt fruit preparations
- Fermented milk

Significant product benefits
- Reduces cost-in-use due to 15 - 20% lower dosage
- Less batch to batch variation as more robust in pasteurization process
- Prolongs product shelf-life
- Requires less space in stock due to the higher color unit content

Finalist in dairy category
Agenda

Natural Colors

- What are natural colors
- Market potential and consumer trends
- Application technology
- Sustainable sourcing
- Sales approach
Our sourcing strategy ensures supply in a sustainable way

Acknowledging the changes

Natural Colors on the move

Ensuring supply

Global expertise in formulation

Sustainable Farming

Product Safety

Quality control

CSR audit

Sourcing from multiple regions ensures supply

Buying from farmers and their associations - partnerships that ensures long term sustainability.

<table>
<thead>
<tr>
<th>Pigments</th>
<th>Region</th>
<th>2011-2015 Lead time</th>
<th>Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red lead</td>
<td>Europe</td>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Beet red</td>
<td>Europe</td>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Cocoa</td>
<td>Europe, China, India</td>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Salmon</td>
<td>Europe</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Paprika</td>
<td>Europe, India</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Annatto</td>
<td>Brazil, Peru, India</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Paprika</td>
<td>Europe, China</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Turmeric</td>
<td>India</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>Europe</td>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>Europe</td>
<td>6 months</td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>Europe</td>
<td>5 days</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>Europe</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Purple</td>
<td>Europe</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>Europe</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>Europe</td>
<td>12 months</td>
<td></td>
</tr>
</tbody>
</table>
Raw material market specifics

Characteristics

- Fragmented and opportunistic supplier base
- Crop uncertainty
- Price fluctuations
- Various regions and countries
- Political risks

Strategies

- Global sourcing network
- Supplier partnerships
- Long term strategies
- Time of purchase key to ensure supply and price
- Sourcing in both hemispheres
- Precise demand forecasting
- Security stock to accommodate fluctuating prices

Contract/Harvest Calendar

<table>
<thead>
<tr>
<th>Pigment</th>
<th>Region</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carmine</td>
<td>Peru, Argentina, China, India</td>
<td></td>
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<tr>
<td>Anthocyanin</td>
<td>Black carrot, Elderberry, Red cabbage, Annatto, Turmeric, Chlorophyll, Paprika, Natural carotene</td>
<td></td>
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</tbody>
</table>

Crop harvested (peak season) | Potential crop harvested | Contract begins | Input from product management
CSR - Starts at our suppliers

**Vendor management**
*Approval, Assessments, Audits and performance evaluation*

Starting with the high risk vendors

**Committee and use of certificates**

Round table membership on Natural carotene from Palm oil

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**Sustainable Partnerships**

*Technical and commercial support*

- High raw material quality
- High yields
- Good Agricultural Practices
- Sustainable both economic, social and environmental

---

**“Mais Vida” in Brazil**

*Sustainability at work*

Aiming at improving the life quality of the people in Araçoiaba city in the North Eastern part of Brazil

Chr. Hansen render its expertise and technical and commercial support in all steps of the annatto production process

Improved quality and food safety
Bonding between farmers and our site
Example: Black carrot anthocyanins
Identification of new sourcing markets

**Today:** Turkey supplies the majority

- Today Turkey represents majority of the world production of black carrot
- Special species used for black carrot
- Both juice and for coloring purposes

**Future:** More geographies to be added

- Identification of new supplier countries will allow an increased production
- Positive aspect of black carrot is that sowing more surfaces we can obtain higher quality of raw material
- The limit is that sowing period has a window of 2-3 weeks (one crop only is possible per year)
Agenda

Natural Colors

- What are natural colors
- Market potential and consumer trends
- Application technology
- Sustainable sourcing
- Sales approach
Customer needs vary by industry
Differentiated solutions required

<table>
<thead>
<tr>
<th>Application</th>
<th>Acidity</th>
<th>Heat</th>
<th>Light</th>
<th>Emulsion needs</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bevage</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>Confectionery</td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
<tr>
<td>Fruit prep</td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
<td><img src="image15.png" alt="Image" /></td>
</tr>
</tbody>
</table>

- Low
- High

Unique product offering per industry

- Differentiated value propositions to different industries
- Unique price lists
- Distinct launch materials
Chr. Hansen engages in working partnerships with multinationals

<table>
<thead>
<tr>
<th>Solving technical issues</th>
<th>Make it work in the application</th>
<th>Be involved in launching products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the stability of our colors through</td>
<td>Demonstrate technical superior product</td>
<td>Establish the benefit of the product with customer</td>
</tr>
<tr>
<td>Sourcing anthocyanin</td>
<td>Outline value of the technical benefits</td>
<td>Market it not only centrally but at all Customer sites globally</td>
</tr>
<tr>
<td>Improving the yield in the product through improvement of processes</td>
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</tbody>
</table>

- Allura Red 0.035%
- ColorFruit® Red 160 WS 0.07%
- Blackcarrot extract WS 0.065%
Multiple projects for conversion at multinationals done in Global Expertise Centers (GEC) world-wide.

**FOCUS INDUSTRIES**
1) Beverage
2) Confectionery & Ice
3) Fruit prep & Dairy
4) Prepared food

- Confection & Ice: Hørsholm
- Prepared food: Milwaukee
- Major ITC: Valinhos
- Major ITC: Singapore
- Beverage + Dairy/FP: Montpellier

**ITC**: International technology center
**GEC**: Able to do customization and create new products
WRAP UP