

PURAC's Business in the Meat Market

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Personal Introduction: Bert de Vegt

■ Education

- Master in Food Science Wageningen University 1994
- MBA Nyenrode 2002

■ PURAC

- 1995 Technical Sales Engineer Food - PURAC Northern Europe
- 1996 Technical Service Rep, Meat & Poultry – PURAC America
- 1998 National Sales Manager – PURAC America
- 2000 Market Manager Meat & Poultry, PURAC Division
- 2004 Commercial Director Latin America, Sao Paulo Brazil
- 2007 Vice President Market Unit Meat & Poultry

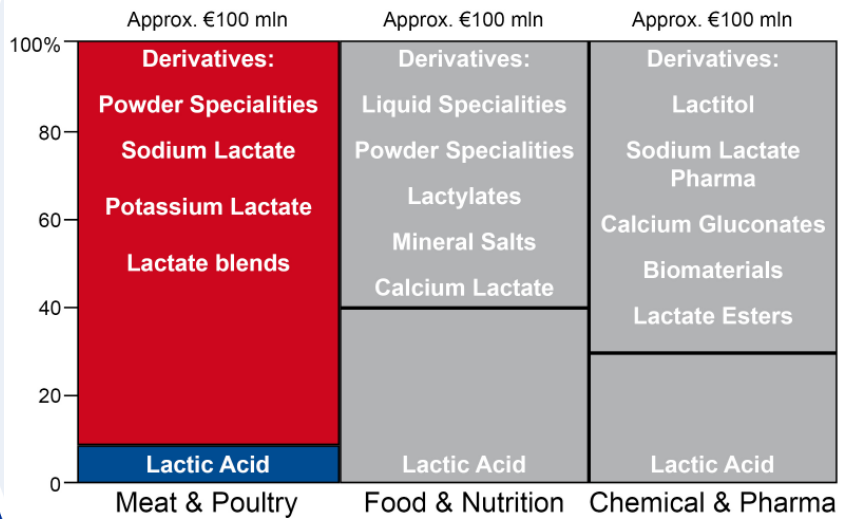


Agenda

- Description Market Unit Meat Business
- The Global Meat Market
- Market Trends
- PURAC Developments in the Meat Market
- Conclusion



PURAC serves three distinct markets - mainly with derivatives



**Three market units, several customer segments,
many applications, one core ingredient:
Lactic Acid and its derivatives**

| Market Units | Meat & Poultry | Food & Nutrition | Chemical & Pharma |
|-------------------|--|--|--|
| Customer Segments | Meat processors Fish processors Slaughtering | Beverage Bakery Dairy Dressings Confectionary | Pharmaceutical Chemical Micro-electronics Poly Lactic Acid Feed |
| Applications | Preservation Safety Decontamination Acidification Taste Fortification | Acidification Taste Fortification Sodium reduction Yield Preservation | Cleaning Anti-microbial pH regulator Solvent Mineral supplement Descaling Metal complexing |



PURAC in Meat & Poultry

- PURAC products for meat applications:

- PURAC lactic acid
- PURASAL sodium & potassium lactate salts
- PURASAL *Opti.Form* lactate based specialty salts



- Lactic acid/Lactate is a natural constituent in meat:

“we add an ingredient which is already naturally present in meat”

- Main functions

- PURAC lactic acid is used as a **surface wash to kill** (pathogenic) bacteria on carcasses
- PURASAL lactate salts are used as an ingredient to **extend shelf life** and **increase product safety**



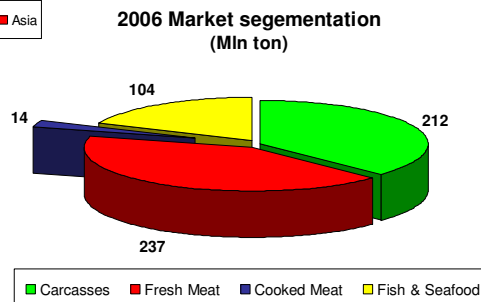
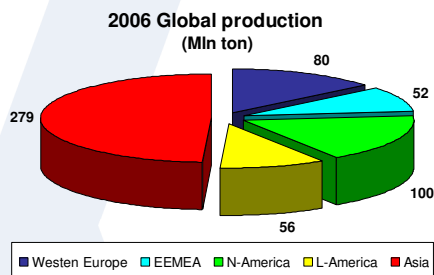
Applications

| Safety | Shelf Life |
|---|---|
| Pathogen control / kill: Listeria, Salmonella, E.Coli, Campylobacter | Micro-organism Colour |
| Applications | |
| Cooked Cured | Ham (low salt) Frankfurters/hot dog (low fat) Corned beef/pastrami |
| Cooked Uncured | Turkey/chicken breast Roast beef (deli items) Cooked sausages/bratwurst |
| Fresh | Fresh raw pork sausages Marinated/enhanced chicken, pork, beef Bacon |
| Decontamination | Beef, pork and poultry |



Global Meat, Poultry & Fish Market

Size of meat market (Mln mton)



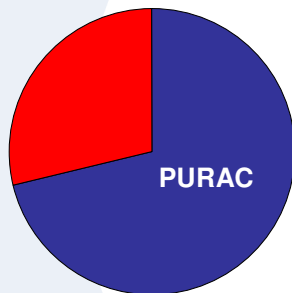
Relevant Market Segments

- Slaughtering
- Fresh Meat (raw, either ground or whole pieces)
- Fresh Further Processed (raw, with added spices and ingredients)
- Cooked Further Processed (hams, hotdogs)
- Dried/Fermented meat (salami)
- Fish
- Frozen Meat, Poultry and Fish products

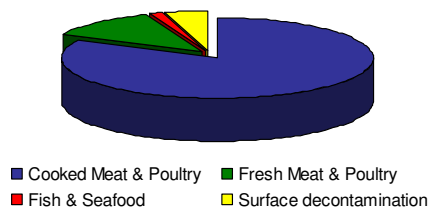


Global Lactates (sodium and potassium) in Meat Market

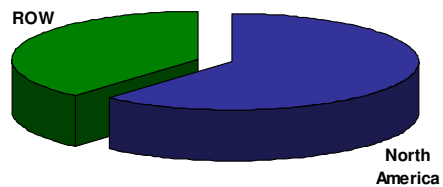
Lactate Competition 2006



Meat & Poultry market segmentation

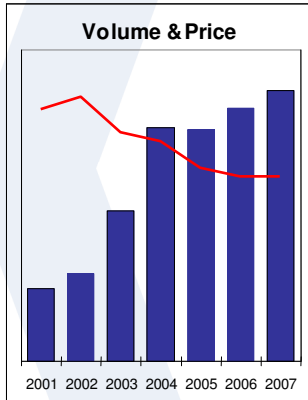


PURAC Meat & Poultry market 2006



Developments Meat Market North America

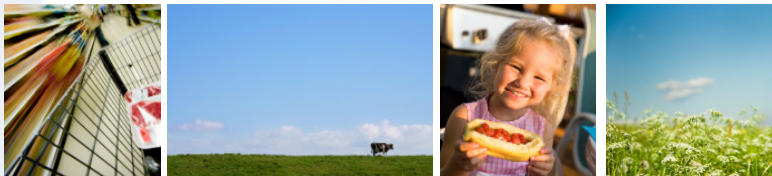
PURAC sales development in North American market in USD



- Lactates in meat market boomed in 2002-2004 due to Listeria legislation in the USA
- Competition stepped in offering low prices
 - Low technology barriers
 - High concentration of large customers
- Prices stabilized in 2007 in a more mature market
- Started too late with product innovation
- Differentiate product portfolio:
 - Quality
 - Efficacy
 - Application segment

Consumer trends

- **Convenience** *"Less time, simplify life"*
- **Health / Integrity** *"We are what we eat/Healthy living"*
- **Indulgence**



Trends Meat: Convenience

Trends:

- Easy to prepare
- Easy to consume
- Easy to open/use (convenient packaging)

Competitive advantage Lactates:

- More handling requires preservatives
- From frozen to refrigerated => preservatives
- Case ready/enhanced meat: preservation systems needed



These examples represent the concept and do not necessary imply the presence of PURAC ingredients inside the product shown

Trends Meat: Health / Integrity

Trends:

- Low Salt and reduction of sodium levels
- Vitamin & mineral enrichment
- Natural labeling / clean label



Competitive advantage Lactates:

- Sodium /potassium lactate → natural present in meat
- High quality potassium lactate available
→ no sodium + reduction salt level
- Calcium lactate → Fortification with Calcium



This examples represent the concept and do not necessary imply the presence of PURAC ingredients inside the product shown

Recent Product Launches



No nitrite
Convenient packaging



Minimally processed



Increase tenderness

No artificial flavorings



These examples represent the concept and do not necessarily imply the presence of PURAC ingredients inside the product shown

Growth Drivers Meat & Poultry Market



Safety very much driven by legislation

PURAC supports Market Trends

Legislation:

- Focus on reduction of incidence levels pathogens
- Decontamination approval EU
- Installment of Food Safety Authorities (worldwide)

Competitive advantage Lactates:

- Lactates have known effect on pathogens like *Listeria*, *Salmonella*, *E.coli*
- No other ingredients in market with similar proven effect on *Listeria monocytogenes*
- Lactates are world wide approved as ingredients (GRAS)



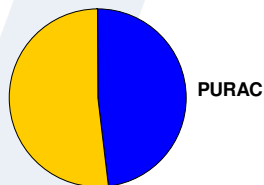
Business Outlook

- Current market size of meat preservatives is estimated to be €200 million
 - Lactates, nitrite, benzoates, sorbates etc.
- Estimated market growth of 5-7% CAGR over a 10 year period
 - + Due to the increase in GDP/capita (Asia, Eastern Europe, Latin America) meat consumption will shift from no meat => fresh meat => further processed meats
 - + Further shift from frozen to refrigerated products
 - + Nitrites, sorbates, benzoates under scrutiny and will be replaced by natural preservation systems with a higher cost in use
 - + More strict legislation towards food safety
 - Novel preservation techniques like high pressure technology and post pasteurization



Building on Strengths

Market share anti microbial in Meat



- PURAC holds around a 50% share in meat preservatives
 - All Lactate based preservatives
- PURAC has capabilities/skills
 - Meat application know how
 - Microbiology - Preservation
 - Fermentation
- Innovator: bringing new solutions to the market place



Building on Strengths



- Application & Product know
 - Well trained sales force in meat/food science
 - Meat innovation center in Gorinchem
- Customer intimacy
 - Network of sales offices around the world
 - Co-development projects with key accounts world wide
 - Vendor Managed Inventory, consignment stock
 - Regional Application Centers



Market Unit Meat: Tools: prediction models (1)

The *Opti.Form* Listeria Control Model 2007

Website address: www.opti-form.com

For customers only, requires username and password



Market Unit Meat: Tools: prediction models (2)

“How safe are your cured & uncured products?”



Conclusion

- PURAC market leader preservatives in meat
- Experienced strong growth in 2002-2004 which attracted competition leading to price erosion. Price erosion halted.
- Maintain our current strong preservation position in meat
- Focus areas: shelf life and safety
- Differentiation through innovation
- USA market is relatively mature though continues to grow
- Growth areas: geographical expansion, fresh meat & fish
- Expected growth of 5-7% CAGR over a 10 year period



Meat & Poultry Market

An intriguing world to be in.....



<http://groups.google.com.ar/group/Maxikosco>



