

기능성 우유음료의 개발과 시장현황

박중수

한국테트라팩

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Market status of Functional Dairy Products
(기능성 우유음료의 개발과 시장현황)

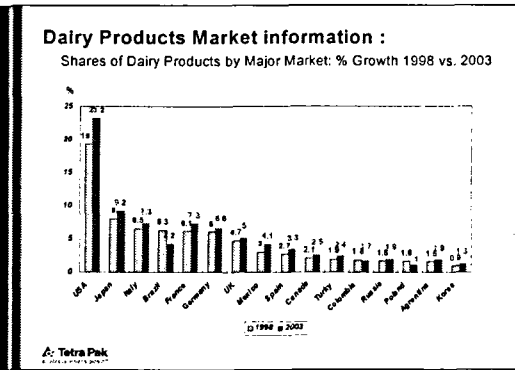
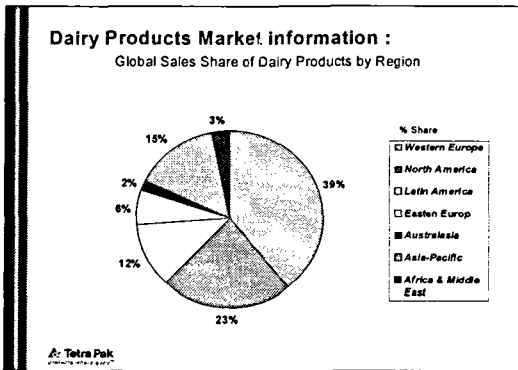
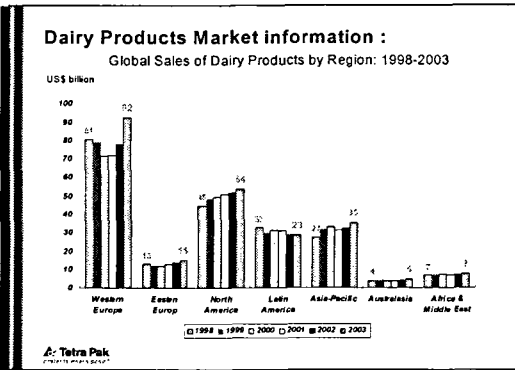
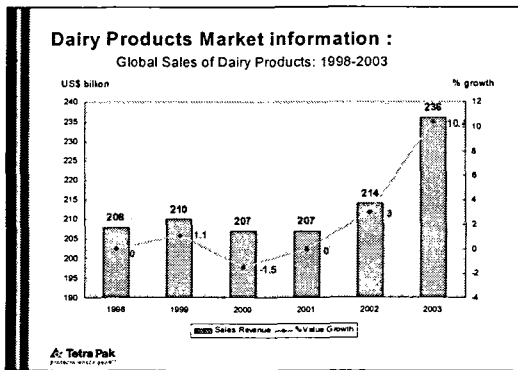
Tetra Pak Korea
June 2004

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FOOD & DRINKS GROUP

Market status of Functional Dairy Products

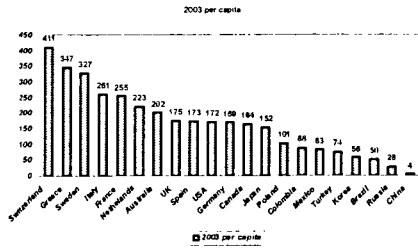
- Dairy Products Market Information:**
 - Global Market: Sales, Shares, Sector- Milk & Yoghurt
 - Market summary
 - Key Challenges and Strategies
- Active Functional Dairy products:**
 - Definition of Nutritional(Functional) dairy products
 - Nutritional Ingredients
 - Health Concept of the 21st Century: Pro-biotic
 - Pro-biotic Market data
- World Pro-biotic Products**
- Tetra Pak Offers**

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Dairy Products Market information :

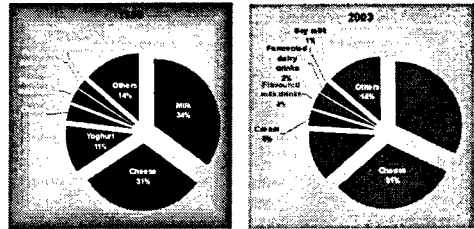
Per capita consumption by Major Market: 2003



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Dairy Products Market information :

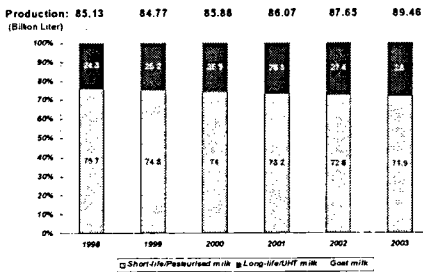
Global Sales of Dairy Products by Sector: 1998 vs. 2003



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Dairy Products Market information :

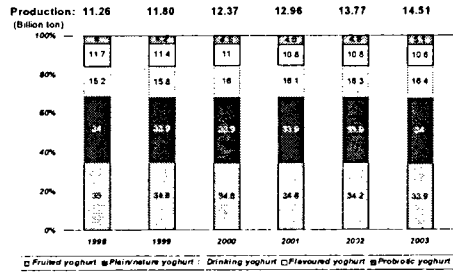
Global Sales of Milk by Subsector: 1998-2003



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Dairy Products Market information :

Global Sales of Yoghurt by Subsector: 1998-2003



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Dairy Products Market information: 2003

The state of the Dairy Products Market 2003

Market summary

- Drive by growth in the dominant Western European region
 - appreciation of the euro against the US dollar
 - added-value growth in mature market: France, Italy
 - consumer demand for dairy products with 'functional' properties
- Contribution of developing market: Asia-pacific, Africa
 - successful public health programs with UHT & ESL
 - smaller size packaging: smaller households, longer working hours, less formal mealtimes, easy-to-use, portable & disposable
- China continued to present potential for growth
 - school milk program designed to address calcium deficiency
- Pro-biotic drinking yoghurt offers a winning formula of dairy products
- Increased segmentation of the market also added value in 2003
 - consumer group: age, gender, medical condition, national culture

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Dairy Products Market information: 2004-

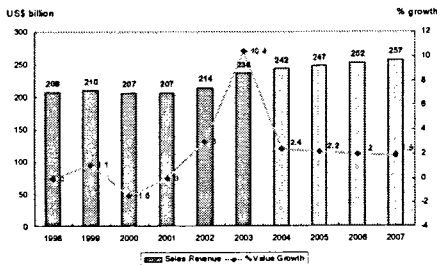
Key Challenges and Strategies for Future

Challenges	Strategies
To counter consumers concerns over the nutritional content	Focus on natural ingredients, assurances of the 'authentic' provenance of dairy products
To make dairy products compatible with modern urban lifestyles	Develop convenient, ready-to-eat healthy products in disposable packaging
To be globally active but sensitive to local preferences	Develop regional variants of global brands
To combat the threat from private label	Transform the commodity status of dairy products through branding
To increase consumption per capita in emerging markets	Strategic alliances, public education, marketing, distribution

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Dairy Products Market information :

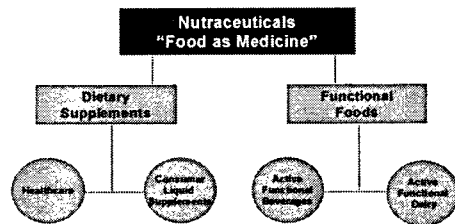
Global Sales of Dairy Products: 2004-2007 Forecast



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Active Functional Dairy products:

Nutritional category definition:



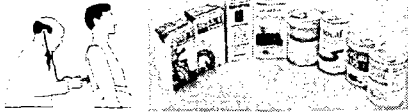
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Active Functional Dairy products:

Nutritional category definition:
DIETARY SUPPLEMENTS - HEALTHCARE

Definition:

"...A food formulated to be consumed or administered internally under the supervision of a health care professional. It is intended for the specific dietary management of a disease or a condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by "medical evaluation..."



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Active Functional Dairy products:

Nutritional category definition:
LIQUID SUPPLEMENTS - CONSUMER

Definition: "...Nutritionally dense retail products used to supplement intake or fully replace meals."



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Active Functional Dairy products:

Nutritional category definition:
LIQUID SUPPLEMENTS - CONSUMER

Many of the Health Care products but with a more retail oriented positioning, taste, and packaging. Additionally, those liquid foods whose nutrient composition includes artificially added high value ingredients specifically meant to enhance energy, strength, and well-being

- to attain or maintain a desired weight-level
- to limit recuperation time after exercise or other stressful event
- to limit effects of aging, and disease processes



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Active Functional Dairy products:

Nutritional category definition:
ACTIVE FUNCTIONAL BEVERAGE

Definition:

"...Liquid food whose nutrient composition includes artificially added high value ingredients..."



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Active Functional Dairy products:

Nutritional category definition:
ACTIVE FUNCTIONAL BEVERAGE

Specifically positioned to

- enhance energy, mental focus, strength, and well-being
- limit effects of aging, and disease processes
- offer preventive health care measures
- provide dosage of active ingredients sufficient to make a difference



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Active Functional Dairy products:

Nutritional category definition:
ACTIVE FUNCTIONAL DAIRY PRODUCTS (AFD)

Definition:

" Dairy based food & beverage products with added health benefit, also foodstuff which - through the addition of new or new-composed ingredients - can help to prevent from illness or even heal diseases"

Examples

- Pro-biotic
- Pre-biotic
- Dietary fiber



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Definition of Pro-biotic

PROBIOTICS:

Live microbial food ingredient that have a beneficial effect on human health when consumed in adequate amounts



Probiotics

+

Prebiotics



SYNBIOTICS



PREBIOTICS:

Non digestible food ingredient that selectively stimulates the growth/activity of probiotics in the colon

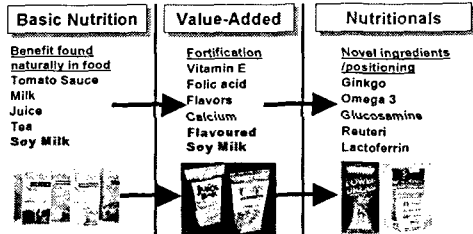
SYNBIOTICS:

An optimal combination of a probiotic and a prebiotic

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Active Functional Dairy products:

Nutritional category definition:



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Active Functional Dairy products:
Ingredient list – Active Functional Dairy

Probiotics cultures

- Acidophilus
- Bifidus
- Lactobacillus
 - GG
 - L1A
 - LC1
 - Casei
 - Reuteri
- Life Top Straw

Synbiotics

- Combinations of both Probiotics and prebiotics

More than five added vitamins and more than one added mineral

Prebiotics

- Inulin
- Oligosaccharides
- Gelatin
- Wheat Fibre
- Soluble Dietary fibres
- Fortified cereals

Novel Ingredients

- Omega 3
- Colostrum
- Lactoferrin
- Lactoperoxidase
- Benecol

Active Herbs

- Spirulina
- Ginseng
- Ginko Biloba
- St. Johns Worth
- Echinaces

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2004/05/06/07/08/09/10/11/12

Active Functional Dairy products:
Ingredient list – Active Functional Beverages

Novel Ingredients

- Omega 3
- Colostrum
- Lactoferrin
- Lactoperoxidase
- Taurine
- Creatine
- Glucosamine
- Caffein
- Q10
- Added protein
- Others

More than five added vitamins and more than one added mineral

Prebiotics

- Inulin
- Oligosaccharides
- Wheat Fibre
- Soluble Dietary fibres
- Fortified cereals

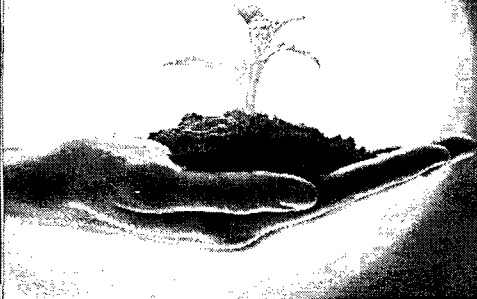
Life Top Straw

Active Herbs

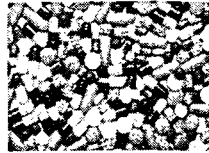
- Spirulina
- Ginseng
- Ginko Biloba
- St. Johns Worth
- Echinaces
- Guarana

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Health Concept of the 21st Century



Health Concept: Pro-biotic
From CURATIVE treatment...



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Health Concept: Pro-biotic
...to PREVENTATIVE maintenance



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Forces for CHANGE



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Health Concept: Pro-biotic
What is Probiotic ?

- Probiotic comes from the word probiosis, means 'CO-EXISTENCE'
- Probiotics are LIVING MICRO-ORGANISMS that benefit the host by improving the balance of intestinal flora
- Commercial Probiotics are made from beneficial bacteria that is found either in NATURE or in HEALTHY HUMAN BODIES



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2004/05/06/07/08/09/10/11/12

Health Concept: Pro-biotic
True Commercial Probiotics

- Bacterial strain must be reported in scientific literature
- Clear evidence of health-enhancing properties
- Able to survive acid and bile in stomach, colonize in GI tract so as to play a governing role in the balance of microbes
- Act like "natural" antibiotic, inhibiting disease-causing pathogens
- Must be safe to consume
- Must be amenable to commercial-level production
- Must not negatively affect other beneficial micro-organisms in the gut



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2004/05/06/07/08/09/10/11/12

Health Concept: Pro-biotic
Why Probiotic supplement is needed ?

- Modern lifestyle altered the balance of intestinal micro-organisms
- Beneficial bacteria become depleted due to stress, diet, infections, medications, traveling, etc
- This sets the stage for elevated levels of harmful bacteria
- Dietary inclusion of Probiotics can shift the balance back in order to maintain optimal health



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Health Concept: Pro-biotic
Health Benefits on Human

Health benefits	Indicative	Confirmed
Lactose intolerance	⊕	✓
Diarrhea	⊕	✓
Immune system	⊕	✓
Blood-cholesterol	⊕	✓
Constipation	⊕	✓
Colon Cancer	⊕	✓
Ulcers, IBS, IBD	⊕	✓
Urogenital infections	⊕	✓
Calcium absorption	⊕	✓

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Health Concept: Pro-biotic
Probiotic Liquid Dairy Products

- Probiotic yoghurt & yoghurt drinks
- Dose delivery (LAB) drinks
- Kefir & other traditional cultured products



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Health Concept: Pro-biotic
Probiotic Yoghurt & Yoghurt Drinks

Yoghurt *L. bulgaricus, S. thermophilus*
 $>10^7$ cfu/g*)
 with added probiotic cultures
L. acidophilus, L. reuteri, Bifidobacterium, etc
 $>10^6$ cfu/g* when labelled

* Minimum culture content Codex draft 2002

Remark: CFU = Colony Forming Units



Stirred



Drinking



Set



Symbiotic

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Health Concept: Pro-biotic
Dose Delivery Lactic Acid Bacteria (LAB) Drinks

- Fermented dairy based products with high content of Probiotic culture ($10^8 - 10^{11}$ per dose/package) often packed in 60 – 120 ml packages
 - Established markets in Asia & Latin America
 - Introduced in Europe 1995



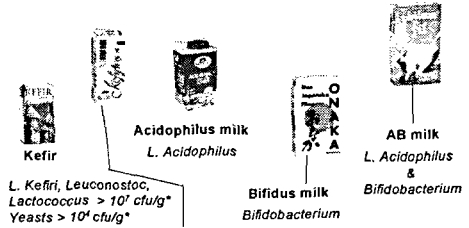
Lactobacilli



Bifidobacteria

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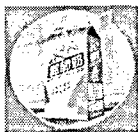
Health Concept: Pro-biotic
Other Fermented Probiotic Dairy Products



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Health Concept: Pro-biotic
Non Fermented Probiotic Dairy Products

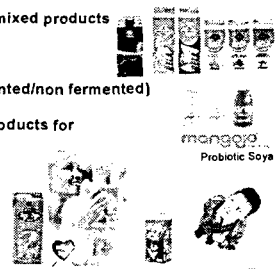
- Probiotic culture added to chilled milk
- No fermentation
- Taste & texture like fresh pasteurised milk



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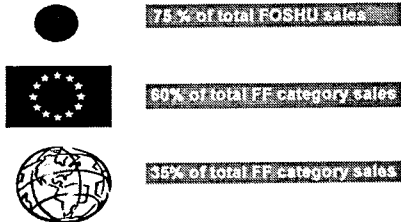
Health Concept: Pro-biotic
New Product Applications

- Juice and Juice/milk mixed products
- Energy/health drinks
- Soya products (fermented/non fermented)
- Special formulated products for
 - Elderly
 - Infants and children
 - People under stress
- Schoolmilk



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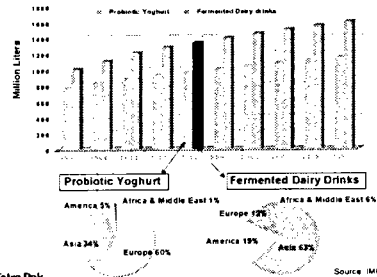
Pro-biotic Market data
Pro-Pre-biotics a Major Functional Food (FF) Category



Source: Letherhead Food RA "The market for gut benefit foods", November 2001

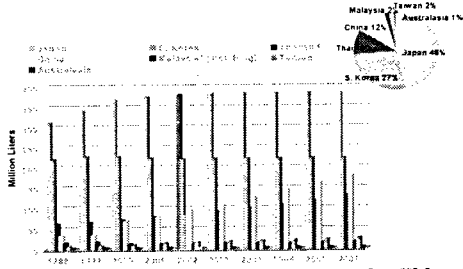
Tetra Pak Remark: FOSHU = Food for Specific Health Use

Pro-biotic Market data
Global Market Size of AFD 2002: over 2.2 billion liters



Tetra Pak Source: IMS Euromonitor

Pro-biotic Market data
Fermented Dairy Drinks: Top 7 Asia Markets Yr. 2002



Tetra Pak Source: IMS Euromonitor

Pro-biotic Market data
EU Research Projects

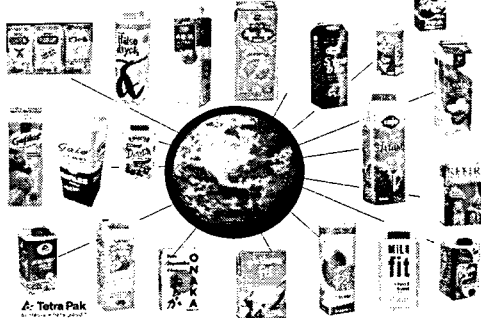
PROEUHEALTH
Food, GI-tract Functionality
and Human Health Cluster



- 64 research groups from all 15 EU countries and Australia
- More than 50 companies registered as industry partners
- 8 umbrella projects in the following areas
 - Developing research tools
 - Understanding mechanisms
 - Investigating effects on health
 - Pro- and prebiotic technology – industrial applications

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World Pro-biotic Products



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World pro-biotic products
Bifiel – Yakult Japan



Launch Target 1989 Female Price 100 yen

- What's contained?
- 0.6g galacto oligosaccharide
 - 2.5g dietary fiber
 - Vitamin B6, B12, E
 - 200 ug folic acid
 - 100mg collagen
 - 4mg iron

- Bifidobacterium breve Yakult
 - Streptococcus thermophilus
 - Lactococcus lactis
- (More than 10 billion Bifidus)

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World pro-biotic products
Actimel / Danone



- Launched in Belgium 1994
- 1,5 billion bottles per year 2002
- 21 market, mainly Europe

Lactobacillus Casei Immunitass
100 milion / ml → 10 billion / bottle



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World pro-biotic products
Italy :
Lactic Acid Bacteria Drink in TBA 100ml



Parmalat 1999

- Lactic Acid Bacteria Drink "KYR"
- Bifido, L. Acidophilus, L. Casei
- Positioned as active healthy beverage for teenager and adults
- 35 days shelf life a 4 C
- TBA 100 ml (chilled distribution)

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World pro-biotic products

Switzerland :
LC 1 flavoured milk drink in TPA 250Sq



Nestle 2000

- Strawberry, Orange and Exotic, 0% fat
- For teenagers and young adults
- Oligofructose and *L. Johnsonii*
- 4 weeks shelf life a < 5C
- TPA 250 (chilled distribution)

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World pro-biotic products

Ireland:
Low-fat milk with probiotic culture in Tetra Brik 500 Square FlexiCap



Glanbia plc 2003

- "Avonmore Milk Plus" with taste like regular milk
- Lactobacillus GG probiotic culture under licence from Valio
- For health-conscious consumers
- TBA 500 Square FlexiCap
- Premium price
- Pre-dating 10 days

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World pro-biotic products

Finland:
Functional probiotic claims to lower blood pressure



Valio Ltd. 2000

- "Evolus" cultured milk drink in 3 flavours with bioactive peptides
- First of its kind in Europe
- Fermentation splits milk protein
- 150 ml a day helps to reduce blood pressure by 5-10%
- For people 35+ years
- Fat-free, high-calcium, low-lactose
- "Star Product 2001" award

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World pro-biotic products

Sweden:
Largest Tetra Top launch in Europe by innovative dairy:
21 products in 3 sizes



Norrmejerier 2001

- 15 milk/yoghurt varieties
- First whipping cream in TT 500 Midi ScrewCap
- Flavoured fruit yoghurt for young children
- Probiotic yoghurt drink
- TT 330/500 Midi and TT 1000 Base: all with ScrewCap
- User-friendly Internet site

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World pro-biotic products

Yugoslavia:
Cultured symbiotic milk in Tetra Top ScrewCap
– first local functional food product



A.D. "IMLEK" 2001

- "Viva Plus" low-fat plain cultured milk drink
- Probiotic/prebiotic ingredients (Bifidobacterium longum 536, soluble dietary fibre)
- Males/Females 30+
- TT 250 Mini / 500 Base with convenient ScrewCap
- Flexo-process graphics

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World pro-biotic products

Austria:
Value-added milk products for adults in Tetra Top



Kärntnermilch 2001

- MILK fit - first national brand
- Open up enriched milk segment
- Alpha 8 Komplex: calcium, zinc, inulin (dietary fibre) +5 vitamins (A, C, D, E and Folic acid)
- Health-conscious adults
- Slogan - "for all people, who still need their body"
- Fresh milk, probiotic cultured milk, whey drinks
- Tetra Top 500 / 750 Base ScrewCap Stackable

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World pro-biotic products

Saudi Arabia:
Value-added probiotic cultured milk drinks from large dairy in Tetra Top packages



SADAFCO 2002

- "Livewell" Omega-3 full cream Laban drink for men 18-30 years
- "Livewell" Probiotic cultured drink in 3 flavours for women 18-30 years
- Growing number of health-conscious consumers
- TT 250 Mini GrandTab and TT 250 Midi ScrewCap with innovative graphics

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World pro-biotic products

Russia:
New-generation dairy products help boost Russian dairy



Ochyakovo Dairy 2003

- "Active Life": products with different sorts of yoghurt & biokefir
- "Bio" = Acidophilus and Bifidus cultures
- TT 330 / 750 ml Base ScrewCap
- Packaging, design, appeal and contents has succeeded in revitalizing the "boring" sour milk products
- "Active Life" has captured 67% of the market, a success that stems to a large degree from the Tetra Top carton

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World pro-biotic products

Taiwan:
Beer Yeast Drinking Yoghurt Claims to Reduce Weight



- Kuang Chuan 2003**
- Fat free vegetable, juice, brewer yeast & probiotic drinking yoghurt
 - High content of B vitamins & trace elements such as Chromium and Zinc
 - 15-45 years old health conscious woman who would like to lose weight

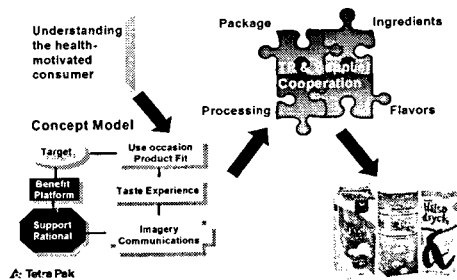
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Tetra Pak Korea Response to the Market Needs



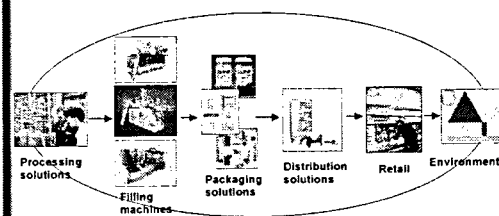
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Tetra Pak offers:
Comprehensive Supports from Concept to Product



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Tetra Pak offers:
Complete Processing, Packaging and Distribution Solutions



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Tetra Pak offers:
Supplier and Customer Alliances



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Tetra Pak offers:
We also Address Customers NEEDS like ...

- Market potential ?
- Latest market and product trends ?
- Success cases from other countries ?
- Probiotic knowledge ?
- Formulation ideas ?
- Barrier properties ?
- Legislations ?
- Shelf-life studies and more ...



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Tetra Pak offers:
Tetra Top Micro for Value-added Probiotics



TT Micro Size: 85ml-125ml

TT Micro 100ml

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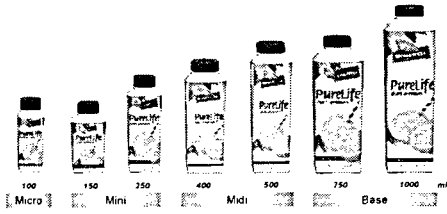
Tetra Pak offers:
Unique Carton Bottle with Extra Ordinary Display Qualities



TT Pacaya 1000ml

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Tetra Pak offers:
Tetra Top Brand Family Range of Probiotic Drinks



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PURE LIFE

감사합니다

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PURE LIFE