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Are Product Recalls Insurable in the Netherlands
Dairy Supply Chain?

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Incentives and Regulatory, Technological, and
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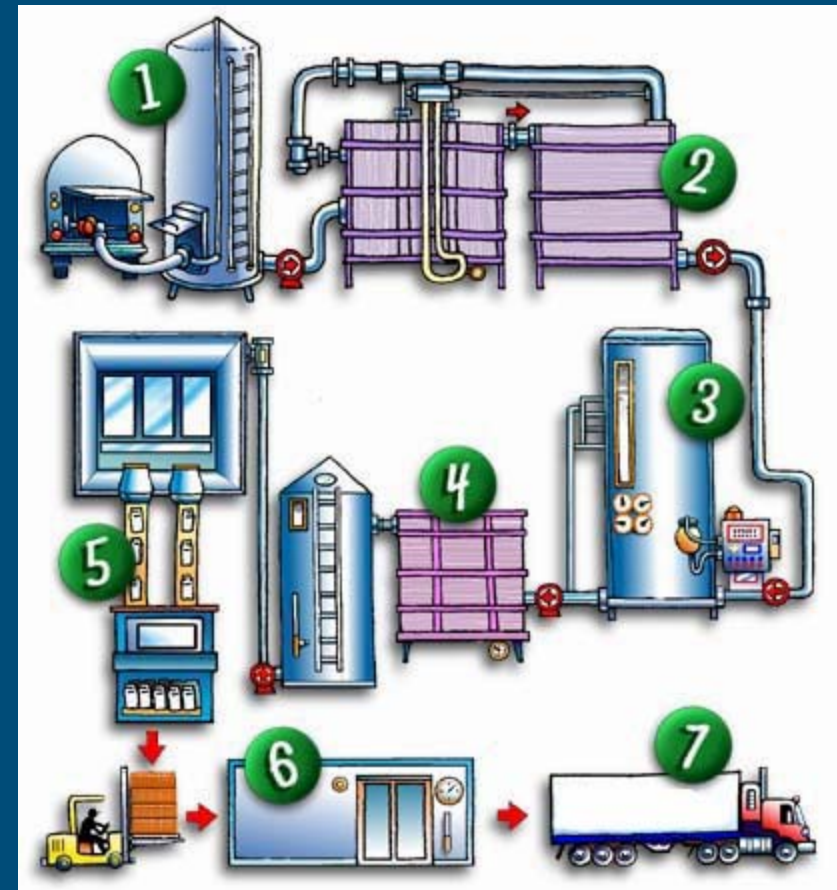
Business Economics

Wageningen University

AAEA, 22 July 2006

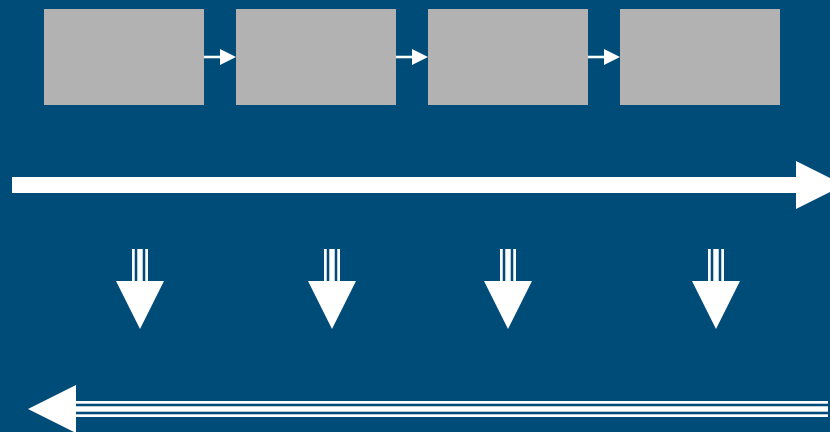
Background

- General Food Law
 - Traceability
 - Transparency
 - Recalls
- Recall insurance





Objectives (1)



Loss prevention

Product recall

Insurance ?



Objectives (2)

- Perils, losses, scope of losses
- Proper rules of behavior
- Risk assessment
- Third-party verifiability of due diligence



Perils & losses

■ Perils

- Food safety
- Quality
- Image

■ Scope of losses

- Non-conforming products or batch(es)
- Suspected products or batch(es)

■ Type of losses

- Decreased value of product
- Business interruption
- Liability losses



Precautionary action points (1)

- Food safety
- Chemical & micro-biological
- Feed, farm & processing
- 85 action points
- Adaptive conjoint analysis
- 22 experts



Precautionary action points (2)

Importance of top-five
action points

FEED	Chemical	31 %
	Microbiological	31 %
FARM	Chemical	47 %
	Microbiological	21 %
DAIRY PROCESSING	Chemical	78 %
	Microbiological	28 %

Risk assessment (1)

	Batch (1000 kg)	Time (hours)	Product Euro/kg)	Handling (Euro/kg)	Notification
Dairy farm (storage raw milk)	5	36	0.31	0.15	-
Dairy industry (collection raw milk)	20	3	0.32	0.15	-
Dairy industry (storage raw milk)	150	10	0.34	0.15	-
Retail (processed milk)	-	12	0.69	0.20	75,000



Risk assessment (2)

- 1 day of feed production = 30 dairy farms
- 4 collection vehicles = 2 storage tanks
- 1 package at retail level = 2 storage tanks
- Retail removes *specific* batches



Risk assessment (3)

	Recall expenses (1,000 Euro)
400 ton of contaminated feed, recall is announced 1 day after delivery	200 (feed) 35 (raw milk) 235 (total)
400 ton of contaminated feed, recall is announced 3 days after delivery	160 (feed) 32 (raw milk) 315 (processed milk) 507 (total)



Risk assessment (4)

	Recall expenses (1,000 Euro)
A retailer finds a can of contaminated milk, produced 2 days ago. The source of contamination cannot be readily detected	1,455 (processed milk) = 63% 58 (raw milk) = 3% 800 (feed) = 34% 2,313 (total)



Third-party verifiability of due diligence (1)

- An example To avoid the risk of crossing red traffic lights:
 - Precautionary action point = brakes
 - Relevant control measure = brakes in working order
 - Due diligence = regular checks on the good condition of the brakes
 - Verifiable due diligence = validity of checks & registration of results
 - PROPER application of ADEQUATE measure & OBJECTIVE proof that proper application is ensured

Third-party verifiability of due diligence (2)

Verifiability of top-five
action points

FEED

Chemical
Microbiological

Fully
Fully

FARM

Chemical
Microbiological

Partly / fully
Not / partly / fully

DAIRY PROCESSING

Chemical
Microbiological

Fully
Fully



Conclusions

- Perils, losses, scope of losses
- Proper rules of behavior
- Risk assessment
- Third-party verifiability of due diligence

Product recall insurance is feasible
IF well-defined & limited in scope
& with proper incentives for risk prevention



Discussion

- Food-related chain liability issues
 - Similar issues
 - Alternative insurance solutions?

MPA 2002 (> 95 feed companies, > 600 pig farms)	Million Euro
Losses	> 100
Claims 2006	7.1 + 1? + 33? + ?
Indemnification 2006	3



Miranda Meuwissen has a background in economics & risk management (livestock insurance, food safety issues, eu-project on risk management). She is currently working for IRMA (Institute for Risk Management in Agriculture) & Business Economics, both at Wageningen University, The Netherlands. Email address is miranda.meuwissen@wur.nl.

“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations” - 7/22/2006, Long Beach, CA

AAEA section cosponsors: FSN, AEM, FAMPS, INT

Industry perspectives on incentives for food safety innovation

Continuous food safety innovation as a management strategy

Dave Theno, Jack in the Box, US

Economic incentives for food safety in the fresh-cut produce supply chain

Susan Ajeska, Fresh Express, US

Innovative food safety training systems

Gary Fread, Guelph Food Technology Centre, Canada

Organizational and technological food safety innovations

Is co-regulation more efficient and effective in supplying safer food?

Marian Garcia, Dept. of Agricultural Sciences, Imperial College London

Andrew Fearne, Centre for Supply Chain Research, University of Kent, UK

Chain level dairy innovation and changes in expected recall costs

Annet Velthuis, Cyriel van Erve, Miranda Meuwissen, & Ruud Huirne

Business Economics & Institute for Risk Management in Agriculture,

Wageningen University, the Netherlands



Regulatory food safety innovations

Prioritization of foodborne pathogens

Marie-Josée Mangen, J. Kemmeren, Y. van Duynhoven, A.H. and Havelaar, National Institute for Public Health & Environment (RIVM), the Netherlands

Risk-based inspection: US Hazard Coefficients for meat and poultry

Don Anderson, Food Safety and Inspection Service, USDA

UK HAS scores and impact on economic incentives

Wenjing Shang and Neal H. Hooker, Department of Agricultural, Environmental & Development Economics, Ohio State University

Private market mechanisms and food safety insurance

Sweden's decade of success with private insurance for *Salmonella* in broilers

Tanya Roberts, ERS, USDA and Hans Andersson, SLU, Sweden

Are product recalls insurable in the Netherlands dairy supply chain?

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Recapturing value from food safety certification: incentives and firm strategy

Suzanne Thornsburry, Mollie Woods and Kellie Raper

Department of Agricultural Economics, Michigan State University

Applications evaluating innovation and incentives for food safety

Impact of new US food safety standards on produce exporters in northern Mexico

Belem Avendaño, Department of Economics, Universidad Autónoma de Baja California, Mexico and Linda Calvin, ERS, USDA

EU food safety standards and impact on Kenyan exports of green beans and fish

Julius Okello, University of Nairobi, Kenya

Danish *Salmonella* control: benefits, costs, and distributional impacts

Lill Andersen, Food and Resource Economics Institute, and Tove Christensen, Royal Danish Veterinary and Agricultural University, Denmark

Wrap up panel discussion of conference

FSN section rep. – Tanya Roberts, ERS, USDA

AEM section rep. – Randy Westgren, University of Illinois

INT section rep. – Julie Caswell, University of Massachusetts

FAMPS section rep. – Jean Kinsey, University of Minnesota

Discussion of everyone attending conference

Note: speaker is either the 1st person named or the person underlined.

Thanks to RTI International for co-sponsoring the workshop.



“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations” - 7/22/2006, Long Beach, CA (con’t)

Workshop objectives

- Analyze how new public policies and private strategies are changing economic incentives for food safety,
- Showcase frontier research and the array of new analytical tools and methods that economists are applying to food safety research questions,
- Evaluate the economic impact of new food safety public policies and private strategies on the national and international marketplace,
- Demonstrate how new public policies and private strategies in one country can force technological change and influence markets and regulations in other countries, &
- Encourage cross-fertilization of ideas between the four sponsoring sections.

Workshop organizing committee

Tanya Roberts, ERS/USDA, Washington, DC - Chair
Julie Caswell, University of Massachusetts, MA
Helen Jensen, Iowa State University, IA
Drew Starbird, Santa Clara University, CA
Ruud Huirne, Wageningen University, the Netherlands
Andrew Fearne, University of Kent, UK
Mogens Lund, FOI, Denmark
Mary Muth, Research Triangle Institute Foundation, NC
Jayson Lusk, Oklahoma State University, OK
Randy Westgren, University of Illinois, IL
Darren Hudson, Mississippi State University, MI