



# INFORM Project

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- Case studies of commercialised non-food products
  - Rapporteur – Harry Gilbertson



## Specific Activities

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- ❑ Devise and obtain agreement for Case Study quality criteria and approval procedures
- ❑ Undertake 12 detailed study visits in a consistent and coherent style
- ❑ Produce interim and final reports
- ❑ Plan for possible future Case Studies
- ❑ Contribute to overall INFORMM work-stream as requested by members

# Current Status of INFORRM Case Studies

	Company		Crop – RAW MATERIAL	Product - USE	Replaces
<b>Be</b>	<b>Trenal</b>	<b>X</b>	Oil seed rape/Soya - OILS	Inks – PRINTING	Mineral Oil
	<b>Vandeputte</b>	<b>X</b>	Linseed - OILS	Cleaner - FLOORING	Synthetics
	<b>Galactic</b>		Sugar-beet - SUGAR	Lactic Acid - BIOPOLYMERS	- - -
<b>Fr</b>	<b>Appia</b>	<b>X</b>	Sunflower - OILS	Bitumen solvent – ROADS	Mineral Oil
	<b>Action-Pin</b>		Oil seed rape - OILS	Solvent - DETERGENT	Mineral Oil
<b>Ge</b>	<b>Flachshaus</b>	<b>X</b>	Flax (Potato) – FIBRE (STARCH)	Insulation – BUILDING	Mineral fibre
	<b>Confidential</b>		Oil seed rape - OILS	Transmission Oil – AGRIC M/C	Mineral Oil
	<b>Confidential</b>		Flax/Hemp	Moulded panel - AUTOMOTIVE	Metal/Plastic
<b>NL</b>	<b>Rodenburg</b>	<b>X</b>	Potato - STARCH	Bioplastics – INJ MOULDING	Plastics
	<b>AVEBE</b>	<b>X</b>	Grass - FIBRE	Bioplastics – INJ MOULDING	- - -
<b>UK</b>	<b>Textron</b>	<b>X</b>	Oil seed rape - OILS	Lubricant/Coolant – METAL PDN	Mineral Oil
	<b>Confidential</b>		Wheat/Maize - STARCH	Foam - PACKAGING	Polystyrene

# SWOT ANALYSIS

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## ■ First Five Case Studies

■ – April 2002

- App = Appia
- Tex = Textron
- Fla = Flachshaus
- Tre = Trenal
- Rod = Rodenburg

# STRENGTHS

## Relative to Non-RRM Equivalents

### RAW MATERIAL

- Short supply chain (within company control)
- Low-cost material or by-product from existing stable industry
- Abundant supply (with good QA for foreseeable future)
- Improved price stability over alternatives
- Sustainable supply within a local region
- Recognised (by consumers) as being a renewable resource

### PROCESS

- Parent company familiar with process technology
- Reduced manufacturing down-time
- More economic when lower-cost factories come on-stream
- Reduced inventory costs (due to rationalisation of range)
- Lowered H&S risks for operatives and localised population

App Tex Fla Tre Rod

	App	Tex	Fla	Tre	Rod
					X
	X	X		X	X
	X	X		X	X
	X	X		X	X
	X	X		X	X
			X		X

	App	Tex	Fla	Tre	Rod
			X		X
	X	X			
	X		X		X
		X			
	X	X	X	X	

# STRENGTHS (continued)

Relative to Non-RRM Equivalents

## PRODUCT

### Technical performance/properties:

- improved human comfort/reduced odour/convenience*
- improved end-use function or quality*
- control of degradation rate appropriate to function*

### Marketing Issues:

- competes in mainstream market on price*
- widespread market applications (reduces business risk)*

### Safety/Pollution Issues:

- reduced risk of environmental pollution*
- reduced toxicity for end-users*
- no requirement for otherwise mandatory safety labelling*
- reduced overall consumption (environmental gain)*

### Disposal Issues:

- Improved biodegradability*
- Environmentally safe disposal/recycling*
- Reduced or zero carcinogenic OCAs or VOCs*

App	Tex	Fla	Tre	Rod
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X		X	X	
X	X	X	X	X
X	X	X	X	X

			X	X
X	X			X

X	X	X	X	X
X	X	X	X	
X	X	X	X	
	X			

X	X	X	X	X
X	X	X	X	X
X	X	X	X	X

# WEAKNESSES

## Relative to Non-RRM Equivalents

### RAW MATERIAL

Wholly reliant upon one source or one supply industry

Volatile cost and/or variable annual supply

Lack of effective PR body to promote benefits of crop material

Subject to political agreements (eg import/export tariffs)

Subject to (maintenance of current) agricultural subsidies

### PROCESS

Poor economies of scale (current levels)

Lack of vertical integration economics from crop to product

Process control difficult (non-homogeneous raw material)

App Tex Fla Tre Rod

X		X		X
		X		
	X	X	X	
X	X	X	X	X
X	X	X	X	

		X		X
X	X	X	X	
		X		

# WEAKNESSES (continued)

## Relative to Non-RRM Equivalents

### PRODUCT

- Some environmental benefits still uncertain – awaiting LCA
- Entering highly competitive market against mature products
- Poor image due to association with (general) agriculture
- Compatibility problem (increases conversion costs for end-user)
- Lack of proven performance, particularly on durability issue
- Technology within sector changing rapidly – possible obsolescence
- Further R&D would help to fully optimise product performance

	App	Tex	Fla	Tre	Rod
			X	X	
X	X	X	X	X	X
			X		X
		X		X	
			X		X
				X	X
X	X	X	X	X	X

# OPPORTUNITIES

## Relative to Non-RRM Equivalents

### RAW MATERIAL

- Shorter supply chain by further integration (to reduce costs)
- Lower-cost from increased scale of (agricultural) operations
- Life-cycle analysis could yield improved objectivity (for consumer)
- Political uniformity/stability needed (framework)
- Genetic improvement in crops (yields: gross/ha & % extraction)

	App	Tex	Fla	Tre	Rod
Shorter supply chain by further integration (to reduce costs)	X	X	X	X	
Lower-cost from increased scale of (agricultural) operations			X		
Life-cycle analysis could yield improved objectivity (for consumer)			X		X
Political uniformity/stability needed (framework)			X		
Genetic improvement in crops (yields: gross/ha & % extraction)	X	X	X	X	

### PROCESS

- IPR licensing opportunities
- Increases in economy of scale of processing
- Application of biotechnology (green chemistry)

IPR licensing opportunities	X		X		X
Increases in economy of scale of processing			X		X
Application of biotechnology (green chemistry)	X	X	X	X	X

### PRODUCT

- Significant export opportunity
- Technical performance improvements possible (R&D expenditure)
- Novel applications (not applicable to non-RRM equivalents)

Significant export opportunity	X				X
Technical performance improvements possible (R&D expenditure)	X	X	X	X	X
Novel applications (not applicable to non-RRM equivalents)					X

# THREATS

## Relative to Non-RRM Equivalents

### RAW MATERIAL

Changes in EU/global agricultural policies

Changes in agronomic practices (farmers growing other crops)

Prices of raw materials subject to global environmental effects

### PROCESS

Parent company/shareholders change investment strategy

Dependent upon low energy prices for processing

More economic when lower-cost factories come on-stream

### PRODUCT

Insufficient R&D or marketing funds available to support product

Competitors developing alternatives (from other RRM materials)

**Equal or better properties possible from non-RRM materials**

App Tex Fla Tre Rod

X	X	X	X	X
X	X	X	X	
X	X	X	X	X

X				
				X
				X

		X		
X	X	X	X	X
X	X	X	X	X



# Next Stage Studies

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- Remaining case studies need to be completed.
- Further questions need to be answered in order to reach conclusions as to viability of RRM businesses in general – see following slides.....







## Business Viability Questions - 3

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- ❑ Is/has been funded:
  - from internal parent (or related) company funds; and/or
  - from private external finance; and/or
  - partly by regional/national governments grants or loans; and/or
  - partly by EU regional/technical schemes
  
- ❑ Aims to:
  - compete 'head-on' with conventional, existing product(s); and/or
  - develop a niche market; and/or
  - capture an entirely new market, as yet unexplored by others.
  
- ❑ Will be perceived by competitors as:
  - a major threat to their own position; or
  - a minor threat of little significance; or
  - irrelevant as they are exploiting features lacking in conventional products.



RODENBURG

BIOPOLYMERS





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BIOPOLYMERS

