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**Innovating Nature**



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# Introduction

- **SECTOR**

- **Bio Technology and Chemicals**
- **Semi Process Industry: Polymer Transformer (PE, PP, Bio,...)**
- **Continuous production: 24 hours, 7 days**

Headquarters at Beerse (Belgium, 35 km from Antwerp)

Listed on the Brussels Stock Exchange (Euronext), since 7/98

Capitalization: approx. 25 million Euro

Ethibel quality mark

TOP 15 Company in Europe (in the sector)

European Market leader: Bio-Products

European Market leader: High quality printed film

Turnover: 120 million Euro; Tonnage: approx 85.000 tonnes

FTE: approx.. 500



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## Production Process

- **Extrusion (mainly blowfilm -(coex) ) of:**



- POLYETHYLENE, PP, PA
- BIODEGRADABLE POLYMERS

- **Printing and/of Conversion**



- High quality (printing) film
- Special conversion techniques and laminations

- **End products**

- Tailor Made
- Quality labels
- Innovative



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## Product Market Competences

<b><u>SECTOR</u></b>	<b><u>Products</u></b>	<b><u>Markets</u></b>
<b><i>Applied Bio Tech &amp; Specialities</i></b>	GFV Bags, Agrofilm Body bags, Mailing film, Carriers, Food packaging, Catering Hygiene films	<b><u>Niches:</u> In All segments</b>
<b><i>Packaging World</i></b>	Shrinkfilm, Pallet Covers, Sheets, Printed film, Stretch, Mailing film & bags	<b><u>Industry:</u> Food, Building, Glass, Chemicals Metal, Wood, Beverages,....</b>
<b><i>Agriculture</i></b>	Agriculture film, Stretch	<b><u>Agri-industry</u> Agri-distribution, Big farmer Cies</b>
<b><i>Waste Disposal</i></b>	All types of Refuse sacs	<b><u>Consumer:</u> F1 &amp; F2, municipalities</b>



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## Competitive Advantages

- Market & Organization:

- Pan European leader BIO polymer conversion
- European leader Printed film; especially know how
- Market penetration PMC
- Customer driven and lean
- Innovative Culture
- Open communication and motivated personnel
- Safety and environment

- R&D and Quality:

- Pioneer 100 % compostable bags
- Patents / licenses: Bio bodybags ('98), bio-mushroom growing film ('98), special BIO Sealmachine, Wave Top
- Department & Clustering
- Quality marks: ISO 9002, Komo, Lne, OK compost, Aib Vinçotte (or tailor made)



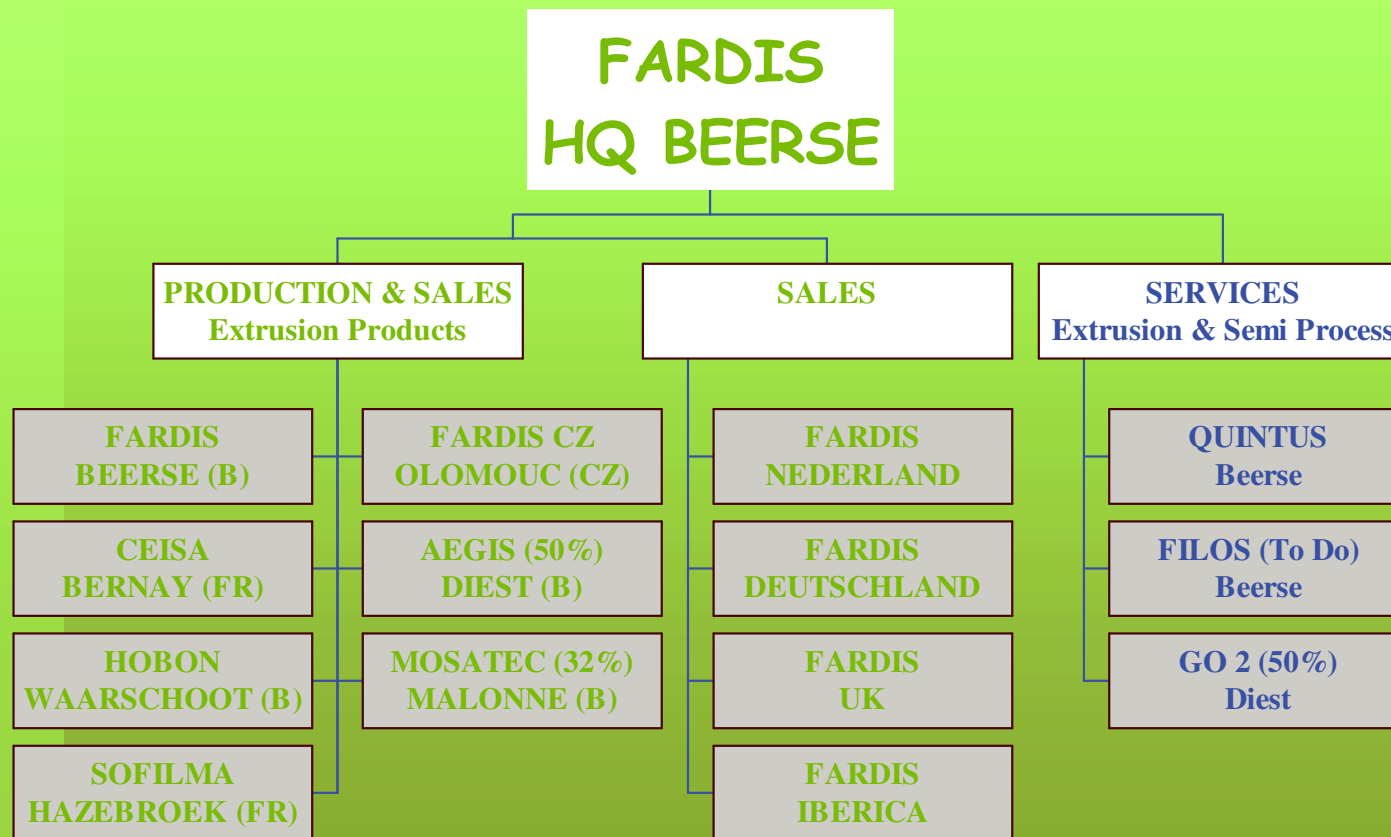
**SUSTAINABILITY**



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# Organization

Chart Title





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## Biodegradable products

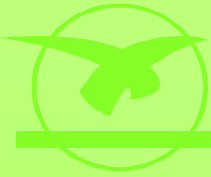
- First tests 1992
- 1995 commercialisation
- Only AIB Vinçotte or DIN 54900 certified products
- Development of film and bags 1995-
- Development of other products 2000-



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## Biodegradable Products

- **Waste Bags**
- **Agricultural films**
- **Mortuary products**
- **Mailing film**
- **Carriers**
- **Food packaging**
- **Catering products**



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## Waste Bags

- Commercial since '95
    - Organic waste bags
    - Organic waste string bags
    - Dog litter bags
- Starch-based biopolymers





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## Agricultural films

- Commercial since '98



- Mushroom growing film



- Mulch film

All types of bio polymers

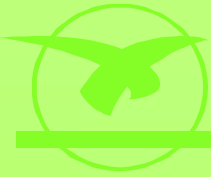


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## Mortuary products

- Commercial since '97
  - Body bags
  - Starch based bio polymers





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## Mailing film

- Commercial since '99
  - Mailing film
  - All types of Bio-polymers





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## Carriers

- Commercial since 2000

- Carrier bags  
Starch based bio-polymers





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## Food Packaging

- Commercial since 2001
- Trays
  - Starch & cellulose based with aliphatic polyester laminate
- Cling film and flow pack film
  - Aliphatic polyesters



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## Catering products

- Commercial since 2001



- Cups and plates
  - PLA and bio coated paper
- Cutlerly
  - Knives
  - Forks
  - Spoons
  - Sporks
  - Forks for fries
  - Starch based biopolymer



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## Recent Developments



- Bread bags,
- Cheese and butter packaging
- Fruit and vegetable film
- Meat and poultry film
- Air cushion film
- Skin pack film
- Baby diaper film
- Anti static film
- Adhesive film



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## Conclusion

- Fardis believes there is a future for biodegradable products.
- Technically the available qualities are good.
- Important success factors now are:
  - Niches in demand have to grow.
  - Bio-polymers must become more cost effective.
  - Composting facilities in Europe needs to grow.
  - Legislation required to reduce waste which can be avoided.
- Fardis will continue to develop new products as demand grows