

**Ian Barnett**

Disclaimer

**EXECUTIVE SUMMARY**

Introduction

Legislation and regulation

Biodegradable packaging – technology, sectors and applications

Biodegradability and the packaging industry

Future outlook

**Introduction**

Summary

What is biodegradable packaging?

Sustainability the main driver

Biodegradable packaging and composting

    Increasing costs of hydrocarbons

    Concerns over the price of biodegradable packaging

Lack of recyclability

Consumer attitudes to bioplastics

Consumer packaging market

    The biodegradable plastics market

**Legislation and regulation**

Summary

Introduction

Packaging legislation in the European Union

    Regulatory overview

    Current EU regional picture

Bioplastics/biodegradable legislation in the EU

    Certification and labeling

    EU Directives

    Lead Markets Initiative

    Funding

Future outlook

Packaging legislation in the United States

    US regulatory overview

US bioplastics/biodegradable legislation

    Certification and labeling

US non-government organizations

    The Bioplastics Recycling Consortium (BRC)

    The Biodegradable Products Institute (BPI)

    The Sustainable Packaging Coalition (SPC)

    Walmart

Packaging regulations in Asia-Pacific

    China

    Japan

    Singapore

    Thailand

    Indonesia

Global trends

Biodegradable drivers

**Technology, sectors, and applications**

Summary

Introduction

Technology

    Biopolymers

    Smart materials

- Biodegradable barrier materials
- Self-regulating, self-monitoring packaging
- Sectors and applications for biodegradable packaging
  - Biodegradables are a vital target for investment
  - Bioplastics led by PLA
  - Oxo-biodegradable plastic – the new alternative
  - Recent commercial applications of biodegradable plastic packaging
  - Bioplastics market overview
  - Paper and board packaging

### **The biodegradability packaging industry**

- Summary
- Major packaging companies with interests in biodegradable
  - NatureWorks
  - Cereplast
  - Cardia
  - Novamont
- Manufacturers moving biodegradables into the mainstream
  - BASF
- Biodegradable materials and brand names
  - Nature Flex
  - Ingeo
  - Mater-Bio
  - Nature Plus
  - Ecoflex
- Retailer and manufacturer initiatives
  - Retailers
  - Manufacturers
  - Niche players

### **Future outlook**

- Summary
- Introduction
- Market outlook
  - Outlook for Suppliers
- Who is driving the market?
  - Price drivers
  - Policy drivers
  - Consumer demand
- Who is paying for the development and growth of biodegradable packaging?

### **Appendix**

- Scope
- Methodology
- Glossary/Abbreviations
- Bibliography/References

### **TABLES**

- Table: PLA uses in packaging industry
- Table: Plastics price comparison
- Table: Regional biodegradable packaging policies in the EU
- Table: Comparison of compostable and oxo-biodegradable plastics
- Table: Major suppliers of starch-based biopolymers
- Table: Leading players in paper and board market
- Table: Leading biodegradable materials used in the packaging industry

### **FIGURES**

- Figure: Share of global bioplastics market by production volume (%) 2009
- Figure: Coca-Cola's PlantBottle

Figure: Global consumer packaging market (\$bn),2006–2010  
Figure: Share of consumer packaging market by region (% value), 2009/2010  
Figure: Share of value of consumer packaging market 2010 by material (%)  
Figure: Seedling logo and OK Compost logo  
Figure: Key drivers of the development and use of biodegradable packaging  
Figure: Schematic of competing starch blends  
Figure: SWOT analysis of paper packaging  
Figure: NatureFlex NK film  
Figure: Ingeo Biobottle from Sant'Anna  
Figure: Ecoflex biodegradable film  
Figure: Tesco principles to reduce packaging  
Figure: Share of worldwide capacity of bio-based plastics (%) by region in 2020  
Figure: Global production capacity of compostable bioplastic (metric tons), 2009-2012  
Figure: Major cost barriers for suppliers of biodegradable packaging  
Figure: Which stakeholders are driving the growth in biodegradable plastics