

Title of Workshop

Future of (Sustainable) Plastic Packaging of Consumer Goods: What roles have biopolymers in future packaging industry and trade under LCA Approach?

Subtitle

"The quest for really (effectively) sustainable alternatives"

Objectives

Assessment of key sustainability attributes and concerns in a holistic view

Short Description of Workshop Outline (max. 2000 characters) including Relevance and Background

Packaging needs to meet and balance multiple demands: Protection, Filling, Logistics, Marketing, Usage and Waste. For liquid products plastic packaging offers many advantages compared to glass, metal or carton. The main concerns regarding sustainability of plastics packaging are related to the feedstock situation, carbon footprint / greenhouse gas impact and waste generation and recyclability. A holistic view is necessary to assess the overall ecological footprint but neglecting social and economic aspects.

Key sustainability Attributes and Concerns:

- **Bio based content (bio-based plastics vs. fossil based)**
 - Ecological, Economic, Social Criteria (land-/indigenous people rights), Transparency
 - Sustainable agriculture and supply chains. Sustainable Production as a function of supply chain control not of feedstock or cultivation region. Producers and users of bio-based plastics will be judged on their ability to manage sustainable supply chains
 - Impact of substitution of plastic to the available arable land - Concerns over land use; Land available for increased food production (potentially): agricultural area vs. arable area (crop land)
 - Competition with Food - Arable land potential - Crop yields - Biomass technical potential vs. sustainable biomass potential
 - Perspective of Technology base / Cost / Political support
 - Feedstock sustainability & bioplastics – how other bio-markets influence the bioplastics chain
 - Competition of bio-based plastics with biofuel and bioenergy
 - Is food waste usable to produce biobased plastics?
 - Certification systems for sustainable bioplastics production from biomass resources?
 - How realistic is total substitution of conventional plastics by bio-plastics? – market share of biobased plastic production?
- **Compostability (biodegradable plastics)**
 - Standards for biodegradability? Most bioplastics only degrade in the tightly controlled, aggressive conditions of industrial composting units, not in home composting conditions in compost piles or simply in the soil/water. Which effects can result? How to quantify the benefit of composted biodegradable plastics?
 - Is it sustainable to degrade these materials or would it be more valuable to re-use or recycle?
- **Recyclability**
 - Risk of contamination of current recycling systems by bioplastics (in particular bio-degradables)

Expected Outcomes and Results: Recommendation for the "right way" towards sustainable plastic packaging

Outline:

Workshop Leaders:

Iris **KÖSTINGER**, Alpla, Hard, Vorarlberg, Austria

Andrea **BRUCKNER**, Austrian Energy Agency, Klima:aktiv, Vienna, Austria,

Moderation:

Michael **STADLOBER**, Melange C, Vienna, Austria

PART 01 - 9:00-10:30: Global Aspects: Product innovations in bio-based products and composites

- International developments and product innovation in bio-based plastics industry: Kristy-Barbara **LANGE**, Head of Communications European Bioplastics e.V.
- Global aspects and LCA approach in bio-based plastics and composites: Lena **SCHOLZ**, nova-Institut GmbH, „Biowerkstoffe“ and „Ökonomie und Ressourcenmanagement“, Hürth, Deutschland
- National initiatives on the right way and sustainable aspects in bio-based plastics: Andrea **BRUCKNER**, Austrian Energy Agency, Klima:aktiv, Vienna, Austria

PART 02 - 11-13:00: Scientific discussion: Opportunities and threats in bio-based products and composites

- Bio-based products and composites: all compostable and biodegradable? Ines **FRITZ**, BOKU Universität für Bodenkultur, ifa tulln
- Research Highlights - CORNET Bio-Packing: Michael **PITZL**, Österreichisches Forschungsinstitut für Chemie und Technik, Wiener Neustadt/Wien
- Sustainable and Efficient Production of Biopolymers from Industrial Waste Streams: Martin **KOLLER**, TU Graz
- Mineral Fillers for active Packaging, Markus **PIONTEK**, Montanuniversität Leoben
- Polymer Paper based on Renewable Resources. Polymer Competence Center Leoben GmbH (Cooperation Montanuniversität, Mondi Neusiedler GmbH, Omya International AG): Stefan **LASKE**, Montanuniversität Leoben, Austria
- End of Life and Waste management of bio-based products and composites: Gernot **KREINDL**, Institute for Sustainable Waste Management and Technology, Montanuniversitaet Leoben, Austria

PART 03 – 14:30-15:30: Market place: Product innovations (hot spots)

Session mode – short presentation and Q&A

- Johann **ZIMMERMANN** NaKu e.U., Austria
- Lars **ZIEGLER**, Tecnar, Ilsfeld-Auenstein, Germany
- Ady **JAGER**, NatureWorks BV, Netherlands/USA

PART 04 - 16-17:30: Critical Dialogue and World café

- **How many labels does the market need?** (Kristy-Barbara **LANGE**, European Bioplastics e.V.)
- **Must biobased products be biodegradable?** (Ines **FRITZ**, BOKU Universität für Bodenkultur, ifa tulln)
- **Sustainability of biopolymers** (Andrea **BRUCKNER**, Austrian Energy Agency, Klima:aktiv, Vienna, Austria)

- **End of life of biopolymers** (Gernot **KREINDL**, Institute for Sustainable Waste Management and Technology, Montanuniversitaet Leoben, Austria)
- **Which compromises have to be made today and in the mid-term when packing products in bio-based plastics?** (Isabell **SCHMIDT**, Deutsche IK - Industrievereinigung Kunststoffverpackungen e.V.)