Life Cycle Assessment(LCA)

of active and intelligent packaging

COST FP1405 Workshop
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COST Action FP1405

Active and intelligent fibre-based packaging – innovation and market introduction **(ActInPak)**

ActInPak is a pan European (COST) network of the leading experts in active and intelligent packaging of over 150 institutes, universities and companies from 37 countries. Main goal of action is to develop a knowledge-based network on sustainable, active and intelligent fibre-based packaging in order to facilitate its introduction on the market.

http://www.actinpak.eu
http://www.cost.eu/COST_Actions/fps/Actions/FP1405
https://www.linkedin.com/groups/COST-FP1405-ActInPak-8254568/about

Meeting Summary

Topics and discussions:

- Publication / Review Paper
- LCA – Background and presentation of demonstrator products
- Discussion on the goal and target group of LCA
- Discussion on the scope of LCA for all 3 demonstrator products
- Discussion on the functional unit for all 3 demonstrator products
- Availability of data from COST Action members

Meeting Summary

Publication / Review Paper

- Map the sustainability and health and safety aspects on active and intelligent packaging value chain model
- This way, all the discussed sustainability aspect will be easier to understand and visualise

DEADLINE: End of March 2017

Who: Greg – as a leader of WG3

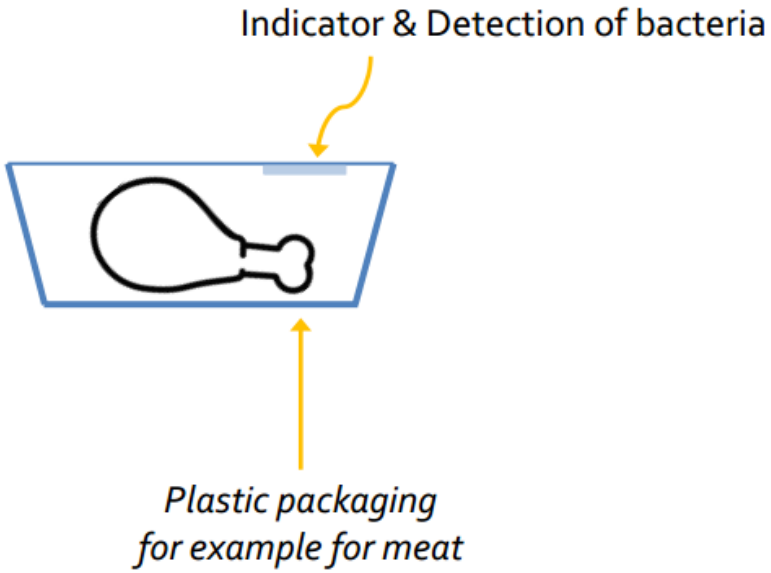
Meeting Summary

Presentation of demonstrator products

- 3 products - 1 intelligent / 2 active
- Products chosen and agreed upon in previous ActInPak COST action meetings
- Demonstrator products refined for LCA purposes:
  1. Intelligent indicator for meat products – assumptions that the indicator is binary – it either shows that the meat is fresh, or not.
  2. Packed bread active packaging – bread in active packaging does not have preservatives
  3. Fruits/Vegetables active corrugated box – strawberries chosen as the packed product.

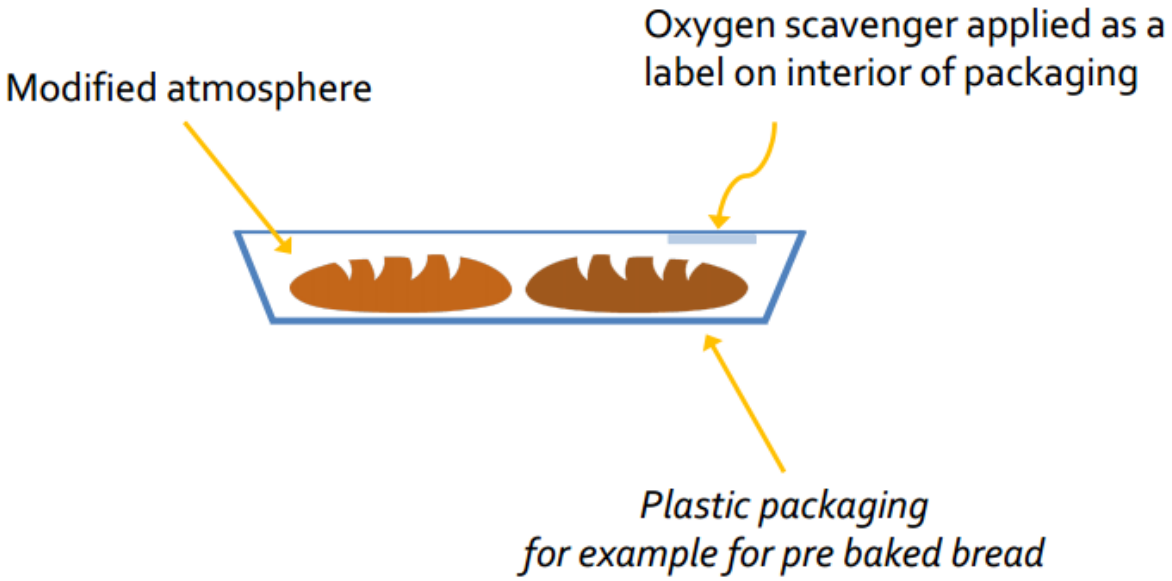
ActInPak Demonstrators

Demonstrator 1 – Intelligent



ActInPak Demonstrators

Demonstrator 2 – Active



ActInPak Demonstrators

Demonstrator 3 – Active

Antibacterial / anti mould
Corrugated layer sandwiched
between inner and outer layer

Corrugated box
for example for fruits

Meeting Summary

Discussion on the goal and target group of LCA - *Brain storm in 3 groups*

<u>Common group decision:</u>

Target of the LCA:

Brand Owner / Retailer / Packer

Meeting Summary

Discussion on the scope of LCA for all 3 demonstrator products - *Brain storm in 3 groups*

<u>Common group decision:</u>

Scope of all three LCA's:

Cradle to Grave – Product + Packaging – including three end of life scenarios

Meeting Summary

Discussion on the scope of LCA for all 3 demonstrator products - *Brain storm in 3 groups*

End of life scenarios:

- Recycling heavy
- Mixed
- Landfill heavy

Meeting Summary

Discussion on the functional unit for all 3 demonstrator products - *Brain storm in 2 groups*

1. **Intelligent meat packaging:**
   - ***100 kg of meat consumed***
2. **Active bread packaging:**
   - **100 kg of packed bread sold**
3. **Active strawberries packaging:**
   - **100 kg of strawberries consumed**

Meeting Summary

Intelligent meat packaging:

- ***100 kg of meat consumed***

Assumptions:

- **Packaging with indicator:**
  - Some loss before best before date (due to non optimal storage conditions)
  - Savings after best before date – indicator not activated after x days after best before date = increased consumption
- **Packaging without indicator:**
  - Certain loss after best before date

Meeting Summary

Active bread packaging:

- ***100 kg of packed bread sold***

Assumptions:

- **Packaging with active component:**
  - Bread without preservatives
  - Shelf life is the same as in packaging without active compment
- **Packaging without active component:**
  - Bread with preservatives
  - Shelf life is the same as in packaging with active compment

Meeting Summary

Active strawberries packaging:

- **100 kg of strawberries consumed**

Assumptions:

- **Packaging with active component:**
  - Direct impact on a shelf life- shelf life is longer
- **Packaging without active component:**
  - shelf life is normal

Meeting Summary

Availability of data from COST Action members

- **ITENE –** information about indicators
- **Selçuk Yildirim –** information about oxygen scavenger label for packed bread
- **Anouk Dantuma –** information about antibacterial / antimould layer

Meeting Summary

What happens next?

- Identification of data that we already have / can access / need:
  - Deadline – Max - end of April 2017

- Preliminary calculations
  - Deadline – End of June 2017