

CORNET MONITORING MEETING



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Project details



Development and Implementation of Smart Bio-based Packaging Systems for B2B Flowers sector

1 January 2013 – 31 December 2014 (CORNET 13th call)



Rijksdienst voor Ondernemend Nederland

SME UC members



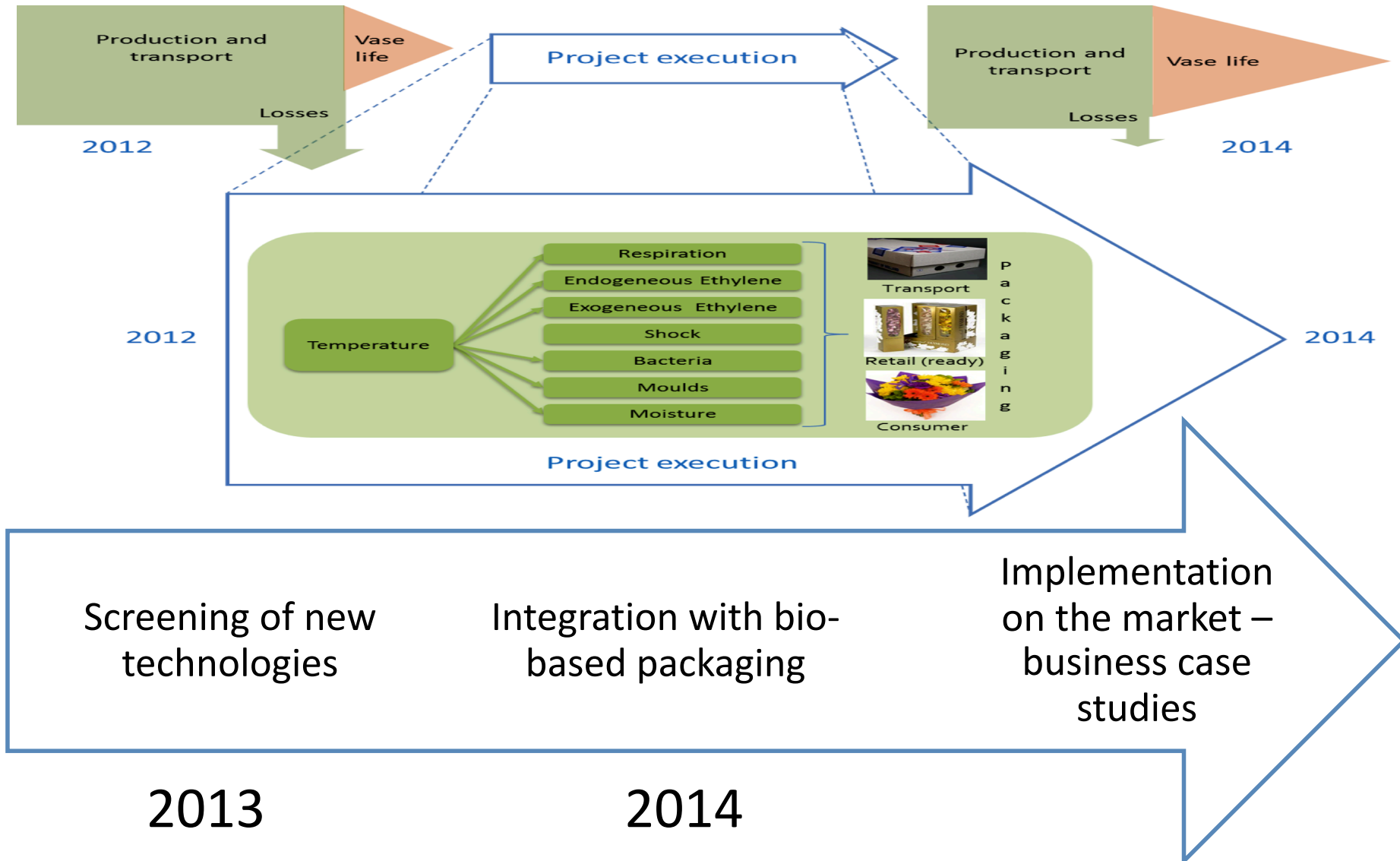
Goal



The scope of the project is to research possibilities of implementation of new innovative technologies for active bio-packaging such as e.g. antifungal systems for flowers packaging application.



Project plan



Technical progress (1)

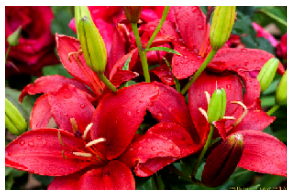


Selected flowers:



Roses: 'Red Naomi'

Gerberas: 'Kimsey', 'Macy', 'Suri', 'Moto'



Lilias: 'Monte Negro'

What is the main challenge for packaging of all species? Is there any universal solution?

Ethylene presence? Not all species are sensitive...

Respiration? It can be solved by using low barrier packaging materials...

Moisture? The same (but the mechanical properties have to be independent on higher humidity)...

Temperature of storage and transport? Storage room/cars with cool conditions...

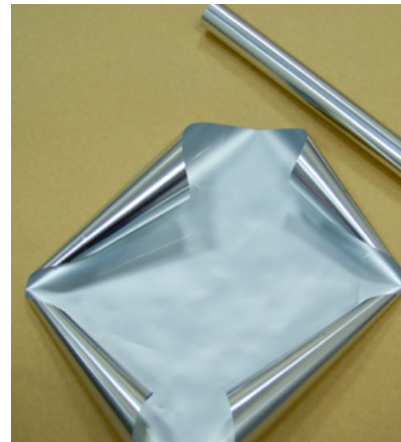
Mechanical protection? Some solutions are available on the market, the most important is the construction of packaging...

Antifungal and antimicrobial contamination? YES!

Technical progress (2) – Selected packaging materials



Active corrugated paperboard (with nanosilver)(Ekopak Plus)



Thermagard (Thermarite)



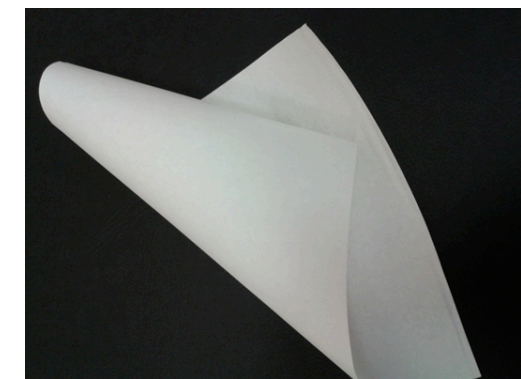
Thermafreeze (Thermarite)



Eco-foil sleeves (CDM)



Temperature indicators



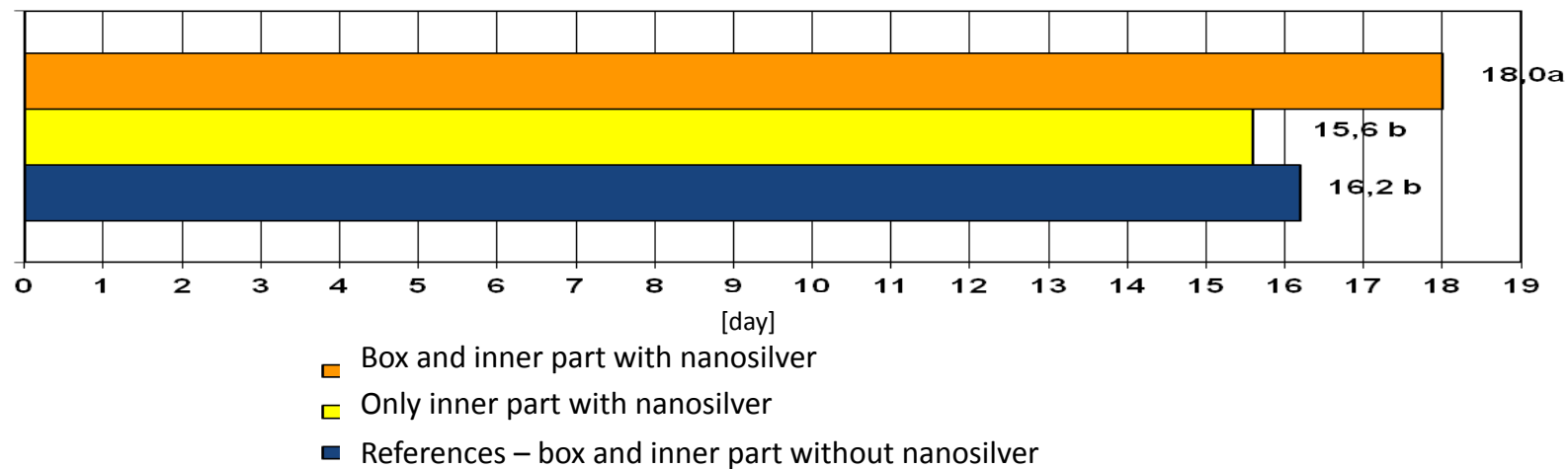
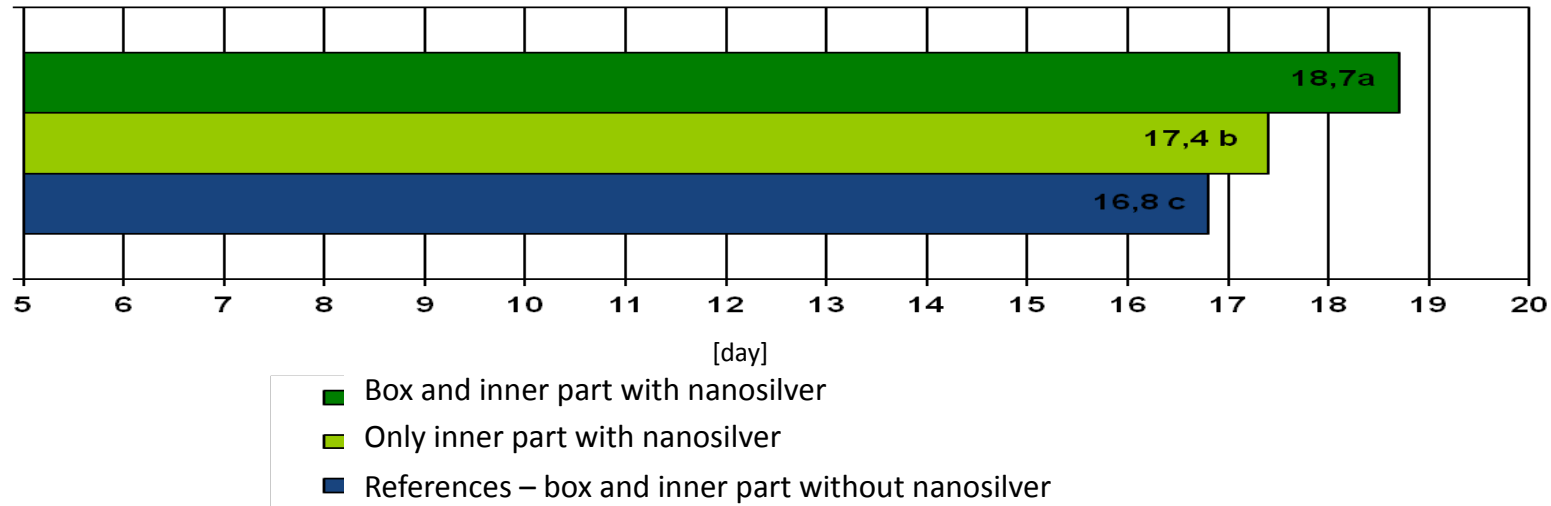
Low grammage paper for wrapping (Sappi Nijmegen)

Technical progress (3) - Testing

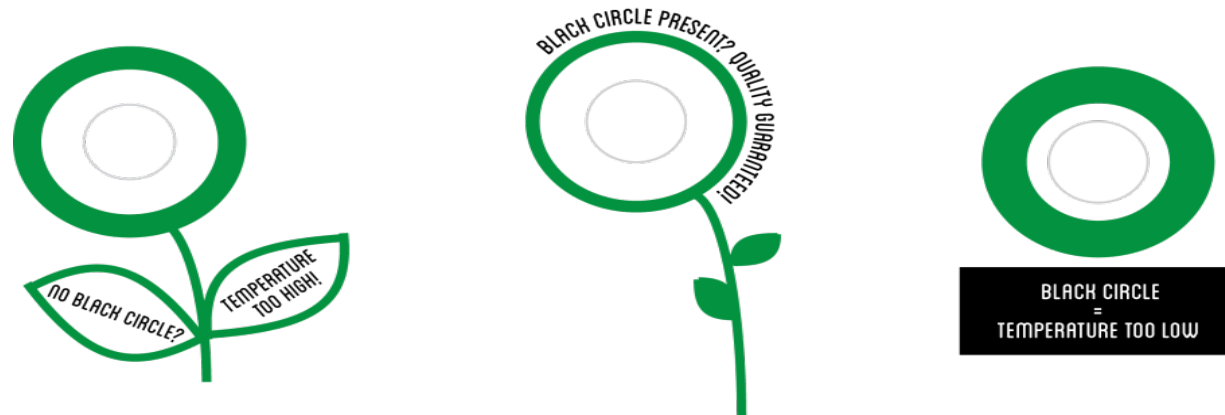


28 days
after
cutting!

Technical progress (4) - Testing

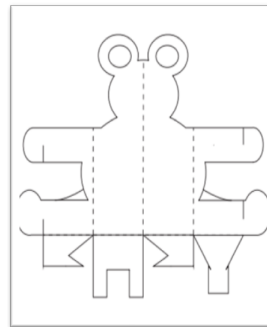
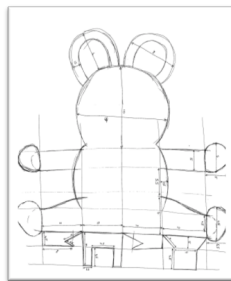


Technical progress (5) – Concept development



Three preliminary concepts of temperature indicators, left to right: consumer application, transport application, industrial application.

Gift box:



Deliverables and milestones



- WP1 Materials selection and packaging functionalization (1/'13 – 9/'13)
 - Some delays due to formalities in Poland, but the WP1 done on time – the selection of the most important features of packaging (with taking into the account flower's needs) helped at the selection of suitable packaging materials with specific properties ;
- WP2 Design of active and intelligent packaging as prototype (6/'13 – 2/'14)
 - The prototype (made on standard production line!) has been delivered by SME at the end of WP2.
- WP3 Business case studies (12/'13 – 12/'14)
 - Still in progress!
- WP4 Dissemination (1/'13 – 12/'14)
 - Some activities (e.g. scientific publications) will be done soon – some tests are still in progress!
- WP5 Management (1/'13 – 12/'14)
 - Some activities (such as e.g. management meetings) have been rescheduled, due to possibilities to arrange meetings together with other activities of partners (e.g. COST workshop).

Deliverables and milestones



- **WP1 Materials selection and packaging functionalization (1/'13 – 9/'13)**
 - D1.1. Report on state of the art ✓
 - D1.2. Report on issues for flower type(s) ✓
 - D1.3. Criteria matrix (combined with D1.2.) ✓
 - D1.4. Report with test results ✓
 - M1.1. Flower type(s) selected ✓
 - M1.2. Issues are defined ✓
 - M1.3. Short list of technologies based on criteria matrix ✓
- **WP2 Design of active and intelligent packaging as prototype (6/'13 – 2/'14)**
 - D2.1. Report on final selected compounds ✓
 - D2.2. Packaging concept draft ✓
 - D2.3. Report on test results for combined compounds ✓
 - D2.4. Prototype of packaging system ✓
 - M2.1. Specific business cases are selected ✓
 - M2.2. Prototype is developed ✓
- **WP3 Business case studies (12/'13 – 12/'14) – in progress!!**
 - D3.1. Produced packaging system per separate case study
 - D3.2. Report on functionality of prototype
 - D3.3. Final report
 - M3.1. Production packaging system completed
 - M3.2. Business cases are executed
- **WP4 Dissemination (1/'13 – 12/'14)**
 - D4.1. Logo, brochure, design layouts ✓
 - D4.2. Website ✓
 - D4.3. Newsletters ✓
 - D4.4. Fact sheets
 - D4.5. Materials and presentations of workshops ✓
- **WP5 Management (1/'13 – 12/'14)**
 - D5.1. Project implementation plan ✓
 - D5.2. Secure environment between partners ✓
 - D5.3. Minutes of the management meetings ✓
 - D5.4. Minutes of the SME UC meetings ✓
 - D5.5. Project interim reports ✓
 - D5.6. Annual project reports ✓
 - M5.1. Consortium Agreement is prepared and signed by all partners ✓
 - M5.2. Project Implementation plan is prepared and endorsed by all partners ✓

SME UC meetings



When	Where	Topics of discussion
April 2012	The Netherlands	SME UC meeting (preparation)
December 2012	The Netherlands	SME UC meeting (kick-off)
January 2013	The Netherlands	SME UC meeting
June 2013	Poland	Kick-off Polish partners/SME UC (selection of materials)
December 2013	Poland	SME UC (prototyping)
April 2014	The Netherlands	SME UC
June 2014	Poland	SME UC (results: storage and transport tests)
July 2014	The Netherlands	SME UC
December 2014 (soon)	Poland	SME UC (final results)
Soon	Netherlands	SME UC
Soon	Poland/The Netherlands	Final meeting + follow up
+ Several talks with individual or combined SME UC members were performed in both countries to discuss materials, progress, etc.		

Dissemination activities - Scientific

When	Presenter, Where	Type
October 2013	CBIMO/ZUT, Poland	Presentation, Chemika Expo, 2013
February 2014	CBIMO/ZUT, Poland	Publication, Packaging Polska 02/2014, 16-17
May 2014	CBIMO/ZUT, Germany	PTS International Innovative Packaging Symposium, poster
October 2014	CBIMO/ZUT, Spain	ICAR 2014, International conference, poster
September 2014	CBIMO/ZUT, Poland	Mentioned during other presentation/poster;
October 2014	CBIMO/ZUT, Poland	Poster, Chemika Expo 2014
June/July and October 2014	CBIMO/ZUT + KCPK , Poland, The Netherlands	2 x STSM (COST FP1003)
December 2014 (soon!)	CBIMO/ZUT	2-3 publications (in progress) in International Journals

Dissemination activities - Industrial



When	Presenter, Where	Type
April 2012	KCPK, Netherlands	Industry workshop on flower packaging, with presentation of SFP concept
January 2013	WvP, Netherlands	Publication on website: http://www.wereldvanpapier.nl/innovatieprojecten/smartflowerpack/
January 2013	KCPK, Netherlands	Publication on website: http://www.kcpk.nl/ep/projecten/sfp
February 2013	CBIMO/ZUT + GCC, Poland	Publication/note, Industrial journal: Chemia i Biznes, 2/13
March 2013	CBIMO/ZUT, Poland	Note, "Ważenie, dozowanie, pakowanie", 03/2013
April 2013	GCC, Poland	Local radio, broadcast
April 2013	GCC, Poland	Industrial/business website: www.plastech.pl
June 2013	GCC, Poland	Publication, Tworzywa Sztuczne w Przemysle 06/2013, 1/2013
September 2013	KCPK, Netherlands	General SFP Newsletter
October 2013	GCC, Poland	Info on the website: www.pi.gov.pl
December 2013	WvP, Netherlands	Industry workshop

Dissemination activities - Industrial



When	Presenter, Where	Type
March 2014	GCC, Poland	Publication, "Chemia i Biznes" 3/2014
May 2014	CBIMO/ZUT, Poland	Presentation, Industry workshop ("Dotacje na Innowacje w poligrafii 2014-2020")
September 2014	CBIMO/ZUT, Poland	Presentation + poster, industry workshop, „Biodegradowalne materiały polimerowe szansą dla rozwoju przyjaznych środowisku produktów w Europie Środkowej. Wyzwania na pograniczu nauki, przemysłu i rynku konsumenta” (PL)
October 2014	GCC, Poland	Presentation, industry workshop, Chespa
November 2014	CBIMO/ZUT+GCC, Poland	Publication on the website: www.packaging-polska.pl

Exploitation perspectives - Foreseen applications



Transport



Storage

Extension of the shelf life = reduction of losses!

The concepts that were developed during the project are:

- ✓ Transport packaging for gerberas
- ✓ Internet packaging for roses
- ✓ Gift packaging

All of them with active paper, and intelligent (colour changing) indicators!!

Exploitation perspectives - Partners and activities



SME UC partners are interested in application as soon as possible:

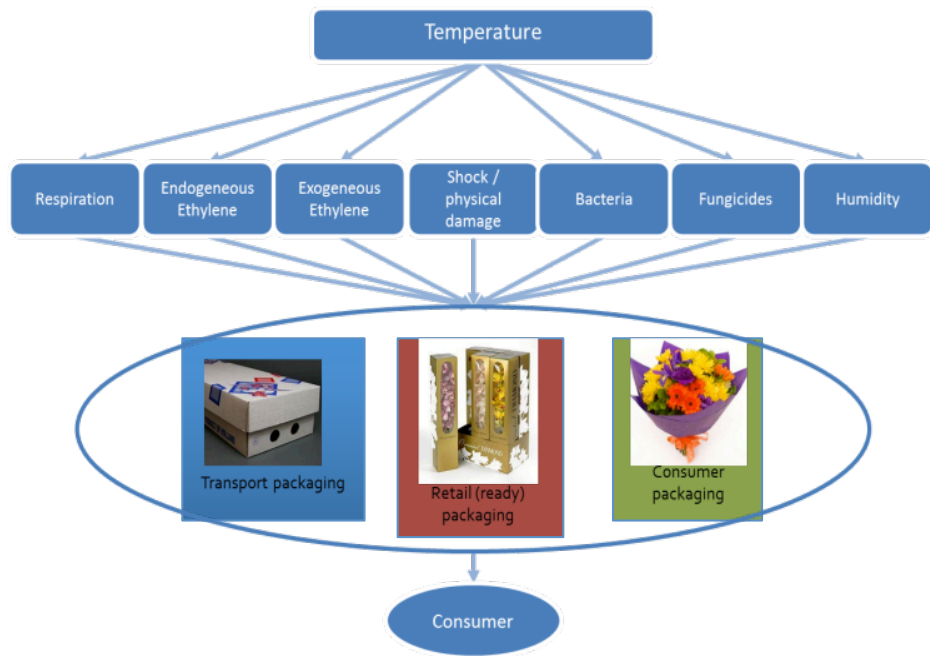
- FTG and BIM: active coatings;
- EkoPak Plus: antimicrobial and antifungal packaging (corrugated boxboard);
- CDM: active coatings for foil sleeves application;
- Drukpol Flexo: printing of temperature indicators;

Exploitation perspectives – Business cases



Targeted business cases:

- Transport packaging – the business box used to transport flowers from the grower to flower auction to final reseller;
- Retail (ready) packaging – a box used to pack the flowers at the growers and sell the product via internet, or use as a retail ready packaging (so the reseller doesn't have to repack the flowers);
- Consumer packaging – a packaging that will be used by the reseller to pack the flowers for the consumer, for example foil to make a bouquet or a gift packaging.



Collaboration issues



- Issues with delivery of all samples on time (also flowers) – also the duration of experiments is longer than expected – to evaluate all aspects for one cultivar 2 months are needed only for storage tests!
- Not all planned tasks were successful - the tests had to be modified and adapted to the purposes of the project – all partners had to be flexible!
- The approach to the subject was too optimistic (too much work work - too short time!) – the limited time was the limit of ideas!
- Not all SME UC companies are as active as they promised

Lessons learnt and suggestions for improvement



- + High SME's involvement
- + High level of applied research and implementation
- + Application not too complicated – clear procedure
- + Subject free of choice, good for SME involvement

- National funding agencies have their own rules regarding application (including their own proposal form), reporting, funding – to simplify the formalities e.g. the same forms of proposal/reports for all countries are recommended
- Quick-response/fast-reaction system is needed to solve unexpected problems/changes during the realization of the project
- Participating countries are limited



THANK YOU FOR YOUR ATTENTION

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