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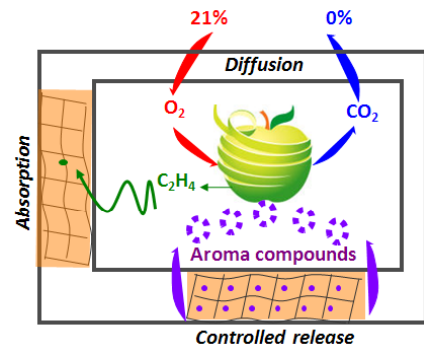
Tailorpack : Active tailor made and eco-friendly packaging for fresh fruit and vegetable preservation

Barbara Gouble^{1*}, Thibaut Cagnon², Patrice Reling¹, Carole Guillaume²

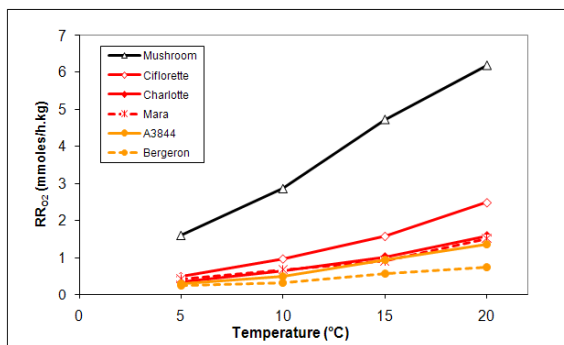
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Through a global and trans-disciplinary approach based on modelling tools, the Tailorpack project aims to design and dimension multilayered composite materials at a nanometric scale constituted by a fibres based support, protein and nanoparticles based layers for controlling mass transfer: gas, water vapour and active compounds. We present here the results concerning O_2 and CO_2 .



Product knowledge



Temperature influence on Respiration Rates of mushroom, strawberry (3 cv.) and apricot (2 cv.)

- Availability of physiological parameters for virtual MAP building: RR_{O_2} , RR_{CO_2} , Respiratory Quotient and Q_{10} (multiplying coefficient for a 10 $^{\circ}C$ increase).

- Availability of optimal storage atmospheres.

- Apparent K_m for respiration is under validation for strawberry and apricot with new respirometers.

	Storage days					
	0	1	2	3	4	5
Mushroom	2.51					
Ciflorette		2.89	2.42			
Charlotte	2.62	2.78	3.40			
Mara	2.24	2.53	2.64			
A3844	2.48	3.13	2.79	3.33	3.29	
Bergeron	2.34	2.16	2.89	2.39	2.48	2.25

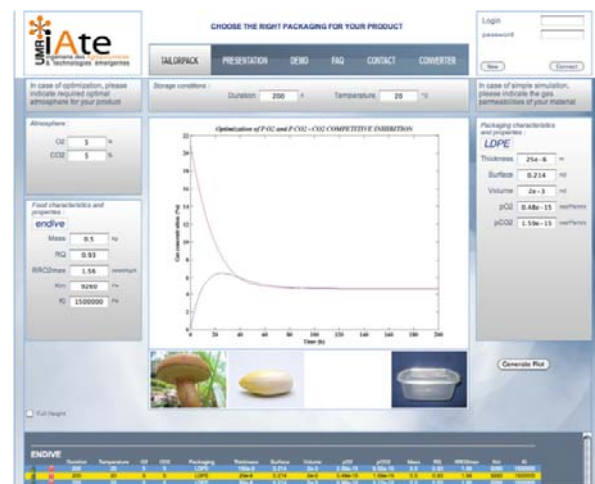
Q_{10} evolution of mushroom, strawberry (3 cv.) and apricot (2 cv.)

Modelisation

- Availability of packaging requirements according to virtual MAP

- Identification of O_2 and CO_2 permeability windows by using physiological parameters and optimal atmosphere

<http://www.tailorpack.com>



Validation

- At laboratory and pre-industrial levels, some packaging material have been elaborated and tested for their permeability characteristics.

- Transfer to industrial scale is under going and validation with F&V trials is planned in few weeks.

During 3 years, the Tailorpack project had led to collect a lot of data, to develop an internet website and to elaborate gluten/paper packaging.

Studies continue on layers by layers deposit, ethylene absorption and aroma compounds effects, with validations this year.

Tailorpack partners:

