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

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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.)](image1)

- Availability of physiological parameters for virtual MAP building: $RR_{O2}$, $RR_{CO2}$, Respiratory Quotient and $Q_{10}$ (multiplying coefficient for a 10°C increase).
- Availability of optimal storage atmospheres.
- Apparent Km for respiration is under validation for strawberry and apricot with new respirometers.

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</tr>
</tbody>
</table>

$Q_{10}$ 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](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.

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

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.

Tailorpack partners:

INRA, uImperial, iAte, Ctifl, Charles Sadron

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