

A close-up photograph of several petri dishes filled with fresh raspberries. The raspberries are bright red and have a textured, bumpy surface. The petri dishes are clear plastic and are arranged in a grid-like pattern, with some in the foreground and others receding into the background. The lighting is soft, highlighting the natural colors and textures of the fruit.

Future materials and products
for advanced smart packaging



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What is AdPack?

AdPack will support the internationalisation of project partner SMEs towards Europe and specific third countries by fostering cross-border collaboration and trust building, as well as by providing high-standard added value services.

In the long-term, AdPack will foster growth and strengthen the competitiveness and sustainability of European SMEs.

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What is smart packaging?

Smart packaging is a set of active and intelligent packaging.

Active packaging interacts with a product or its internal or external environment through a physical, biological or chemical process to improve safety, preservation and quality. Intelligent packaging can monitor and report on the condition or environment of a product, tracking it through the value chain and has application for package integrity, safety, quality, traceability and verification.




Smart Packaging and **the food industry**


The main user of packaging is the food industry. Around 70% of all packages produced in the world are used for food. AdPack partners bring together competencies that strengthen the advanced smart packaging global value chain and foster a cross-sectoral approach by bringing together a market driven cluster - food, new technologies like nanotechnologies, plasma technologies and materials - plastic, up to final application clusters - packaging.




Smart packaging in the food industry

Smart packaging solves many of food packaging's problems since:

 Intelligent packaging involving sensors, RFID, NFC and other technologies can monitor the product quality during transportation and storage, as well as detect fraud or assure that the product is genuine, preventing counterfeit.

 Active packaging involving nano and plasma technology and innovative materials can increase the food products lifespan, preserve the food quality and its freshness. This can prevent one of the world's major change like food waste.





 Intelligent packaging using printed, mobile or IoT technologies can provide essential information about the product to consumers. This may provide traceability info to the consumer, from farm to fork, and other info about the product's qualities, functionalities, and also, how to be best consumed.



New plastics and polymer products in smart packaging



New plastics and polymer products are relevant to smart packaging since:

-  They are sustainable and therefore environmentally friendly, which is very important due to the high volume of packaging requirements in the food industry.
-  The security and freshness of the products are not compromised.
-  They are the fastest growing materials in the industry and can be applied to a wide range of products, from food containers to plates.
-  Most are renewable or even edible.

Nanotechnology and smart packaging

Nanotechnology is a key enabling technology in smart packaging since:



It can be used to indicate the quality of the food and prolong its shelf-life.



It can ensure a stable internal environment against hazardous circumstances.







It can produce barriers for protecting the product by allowing the package to “breathe” without compromising the sterility.



It helps increase resource efficiency and sustainability with more eco – friendly products.

Plasma technology in smart packaging

Plasma technologies contribute to the development of smart packaging since:

-  Bio protective layers generated by plasma can increase the product lifespan and preserve the quality/freshness
-  Plasma-based surface treatment e.g. barrier coatings enable the use of new materials and mono-materials for packaging (environmentally friendly)
-  Cold plasma is a useful tool for surface decontamination of foodstuff and food packaging materials
-  Plasma technology can generate sensors in/on packaging



Source: <http://www.balticnet-plasmatec.org/workgroup-plasma-bio/>

AdPack internationalisation plan

AdPack internationalisation objectives are:

-  To prepare the member SME to go international through training and knowledge sharing actions.
-  To foster cooperation between member SME; thus, contributing to a decrease of sectoral boundaries
-  To establish cooperation agreements with international business and/or research intermediaries in each target country.
-  To establish an internationalisation ambassador in each target country.
-  To support the establishment of agreements to develop joint collaborative projects between the member SME and relevant actors from third countries.

Target countries

The internationalisation strategy targets five countries outside Europe in accordance with their potential for smart packaging. Canada, China and the United States of America are the most important ones for AdPack.

Canada

The food and beverage sectors are the main end users of packaging. Moreover, the usage of plastics is growing along with the demand for cheaper and flexible materials. The concerns about sustainability and a healthy lifestyle drive the Canadian packaging industry, which is making a strong effort to promote smart packaging.

United States of America

The forecast for the national industry is optimistic. The food industry is the major end user; plastic is the third most popular material and the demand for flexible packaging is rising. The smart packaging in the US is led by health, brand differentiation and sustainability.

Brazil

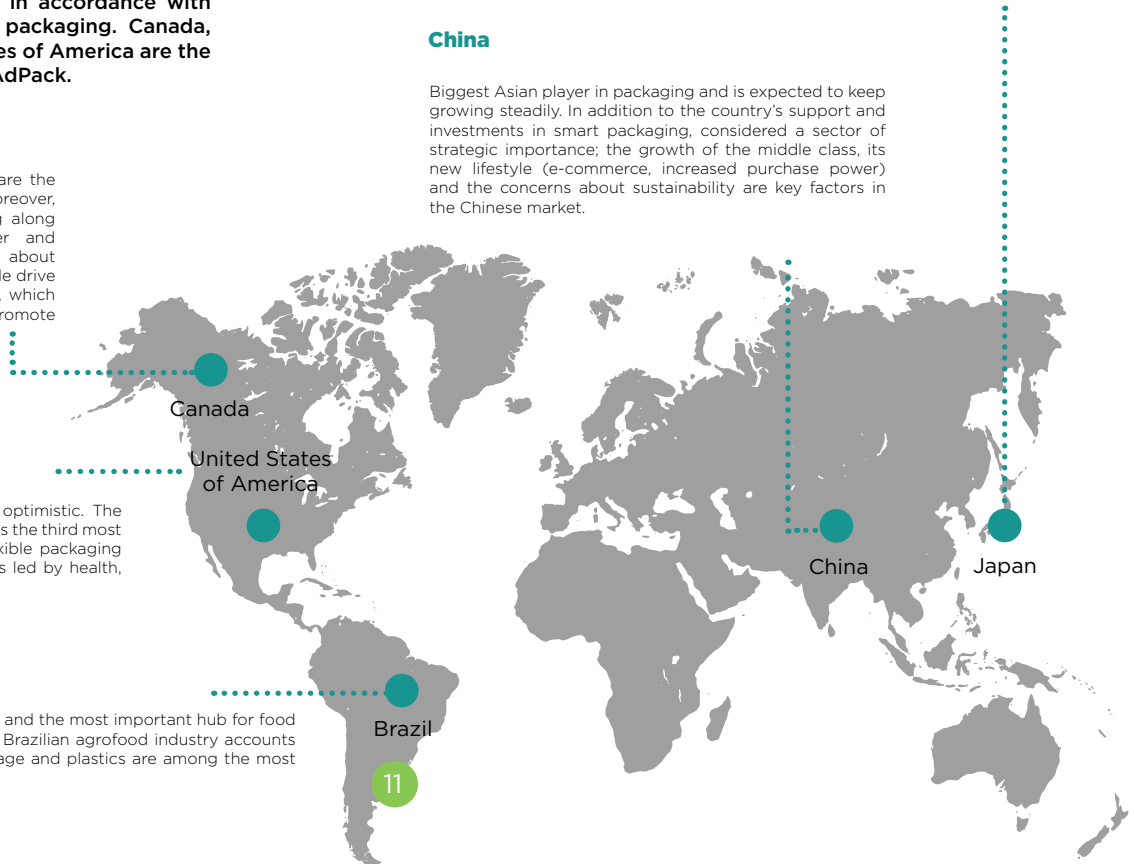
Second producer at a global level and the most important hub for food technology in Latin America; the Brazilian agrofood industry accounts for the majority of packaging usage and plastics are among the most used materials.

China

Biggest Asian player in packaging and is expected to keep growing steadily. In addition to the country's support and investments in smart packaging, considered a sector of strategic importance; the growth of the middle class, its new lifestyle (e-commerce, increased purchase power) and the concerns about sustainability are key factors in the Chinese market.

Japan






Since the population demands greater sophistication; the Japanese packaging industry needs to materialize safe, customized and sustainable packaging in order to open the doors for innovative ideas.







AdPack

internationalisation services

AdPack will provide the following internationalisation services:

-  Motivational and awareness-raising seminars and training.
-  Market intelligence.
-  Fact-finding and trade missions.
-  International cross sectoral collaboration platform.
-  Peer mentoring programme.

Why to become an **AdPack partner**

-  Receive valuable information of new markets.
-  Participate in project activities.
-  Find new business and innovation opportunities.
-  Benefit from services and practices provided by AdPack.



AdPack Partners



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