

# The importance of the cold chain traceability in FLW prevention in perishable products

**FOODRUS**

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#ReduceFoodWaste  
#ColdChainMonitoring



FOODRUS project has developed a solution that aims at early detection of breaks in the cold chain so that all stakeholders involved can know the temperature profile of the product along the entire supply chain. The tool monitors temperature of the product, provides location information as it passes through the various points in the supply chain and is able to monitor in near real time the temperature and location of the product, sending the collected data to the cloud automatically, without human intervention.

The solution has been carried out by monitoring the cold chain of packaged salads along a four-point supply chain: the factory where the salads are produced, the company's logistics warehouse, the logistics platform of the distribution company and the supermarket where they are placed on retail shelves.

Three types of monitoring devices have been deployed for this purpose. On the one hand, an ANCHOR device has been placed at each point in the supply chain, which continuously transmits a radio beacon with its location. On the other hand, a LOGGER device has been placed in each box of salads, capable of recording the temperature of the salads, as well as the beacons of the ANCHORS in their vicinity. Finally, at each point in the chain, a transmitter device has been installed to collect data from the LOGGERS and send it to the cloud automatically. The experiment phase has been designed with thirteen different scenarios, including the basic one in which the cold chain is not broken, and twelve more where cold chain breaks were forced, in different points of the supply chain and with different durations. At the end of the supply chain, the products were tasted in order to analyse their organoleptic properties and draw conclusions about the effect of breaks in the cold chain on product quality and the quantification of the shortening of the best-before date.



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It has been demonstrated that the tool is able to detect breaks in the cold chain as they occur, without the need for human intervention. In addition, it provides information not only on when the breakage occurs, but also where it has occurred. Thus, it allows to estimate the shortening of the shelf life of the product due to cold chain breaks and helps the stakeholders to prevent the products to be wasted by taking actions such as prioritising the sale of products or modifying internal logistic processes.

## About

Coordinated by the University of Deusto and comprising 27 partners from 10 different European countries, the EU-funded FOODRUS project aims to limit food losses and waste, and to promote resource efficiency across all stages of the agri-food value chain. FOODRUS is working to tackle the food waste and losses by creating resilient food systems across nine European regions. To achieve this, the project will test 23 circular solutions through diverse forms of collaborative innovation.

## Consortium



[www.foodrus.eu](http://www.foodrus.eu)



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