

# The 'LIFE-Valorlact' project is developing new food prototypes using whey from cheese-making dairies

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AZTI's Food Research Unit has managed to obtain a series of food prototypes using whey produced by cheese-making dairies, which allows a commercial outlet to be provided for an organic product that is routinely treated as waste and which could end up causing pollution if it is not properly disposed of. The NEIKER R&D centre has likewise produced various animal feed prototypes which contain between 6% and 12% of whey in their composition. This research comes within the framework of the 'Valorlact' project funded by the European Commission's Life+ Programme. This programme aims to stop the whey produced in cheese-making dairies being regarded as a waste product and to encourage its incorporation into the food chain, which means a new business opportunity for the cheese-making and foodstuff production sectors.

Cheese-making dairy whey is the liquid resulting from the coagulation of milk in the cheese-making process once the casein and the fat have been separated. One of the aims of 'Valorlact-Integral use of whey produced in the [dairy industry](#)' is to show that it is possible to recycle over 80% of the whey produced by small and medium-sized Basque cheese-making dairies through the production of new food products and the obtaining of biogas. The overall coordination of the initiative corresponds to the Directorate for Foodstuff Quality and Industries of the Government of the Basque Autonomous Community (region); Azti-Tecnalia is handling the technical coordination and the other participants are Neiker-

Tecnalia, BM engineering and Iberlact. Cheese-making dairies in the Basque Autonomous Community, such as Aldanondo in Agurain, Vascolac in Zamudio, and HAZI Artzain Eskola in Arantzazu are also collaborating.

The creation of prototypes of sliceable cheese, cheese sauce, a beverage with fruit juice and a soluble chocolate-flavoured product are part of the early results of 'Valorlact', a project that started in July 2012. The new foods have been produced using whey concentrates and right now they are being validated by means of studies into their useful life, and tasting sessions by consumers. The aim of the participating organisations is to transfer the technology necessary to develop these products to the foodstuff industry, which means that the sector will be provided with value and its activities will be diversified.

The [animal feed](#) industry will also have a new business opportunity thanks to 'Valorlact'. NEIKER-Tecnalia researchers have produced various types of animal feed and have used them to conduct food tests on milk sheep, laying hens and broiler chickens. The results indicate that incorporating between 6% and 12% of whey into the feed improves the yield across the parameters analysed: laying rate, daily intake, conversion index and weight gain. The including of whey provides a low-cost raw material compared with other products affected by great variability in terms of availability and price.

## **Pilot demonstration plant**

Another of the results of 'Valorlact' is the setting up of a pilot demonstration plant at the Vascolac cheese-making dairy in Zamudio (Bizkaia), where experimental tests are being conducted on each of the technologies being researched. The plant has a filtering area for obtaining protein concentrates from whey, and a biogas (methane) production area using the permeate resulting from the filtering process.

With the information gathered since the start of the project, the aim this year is to implement an Action Plan to upgrade whey in the Basque Country so that the possible upgrading options can be incorporated into the various types of cheese-making dairies. The plan will be assessed from the perspective of its technical, economic and environmental feasibility and will be agreed upon with the cheese-making sector and with other players involved in implementing it, such as the Administration, agricultural companies and associations. To achieve this consensus, a meeting of the players is scheduled for February.

Cheese-making whey is the main by-product of the dairy industry and its high organic matter content turns it into a significant contaminant. The Basque Country's small and medium-sized cheese-making dairies currently have no infrastructure enabling them to manage and enhance whey, so 'Valorlact' will be of great use to them to give this by-product a sustainable, commercial outlet. It will also help them to comply with environmental legislation and cut the costs arising out of disposing of it.

Provided by Elhuyar Fundazioa

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