



LIFE+ VALPORC

Valorization of pig carcasses through their transformation into biofuels and organic fertilizers

(LIFE13 ENV/ES/001115)



Name of the Deliverable:	<i>Informe de caracterización físico-química de los cadáveres de porcino</i>
Number and name of the associated action:	<i>Action A1. Caracterización de cadáveres de porcino</i>
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ACTION A1. PIG CARCASSES CHARACTERIZATION

2. Executive Summary

The main raw material of the LIFE+ VALPORC process are pig carcasses from the implementation area of the project. Hence, the aim of this preliminary action A1 was the physico-chemical characterization of three samples of crushed pig carcasses.

To achieve this objective, firstly, the search for an industrial plant which could provide representative samples of crushed pig carcasses was performed. This was complex for two reasons:

- The applicable European legislation to the management of pig carcasses (Regulation (EC) 1069/2009 and Regulation (EU) 142/2011) prevents the direct supply of these samples by farmers. Farmers have to get rid of them through an authorized manager because of biosecurity issues.
- The authorized managers should carry pig carcasses to a processing plant where these wastes are managed simultaneously with other animal by-products, making it difficult to obtain representative samples.

Based on the aforementioned, the collection of crushed pig carcasses samples was delayed a few months until they were got from the processing plant of Purines Almazan, which is located in Soria and it is currently managing only pig carcasses.

The processing plant of Purines Almazan manages animal by-products of category 2 through the processing method 1, according to what it is established in the regulation (EU) 142/2011. After the reduction of the particle size of the animal by-products to a size of no greater than 50 millimetres, they are heated to a core temperature of more than 133 °C for at least 20 minutes without interruption at a pressure (absolute) of at least 3 bars. The sterilized material is used as a substrate in its annexed biogas plant.

To collect representative samples of crushed pig carcasses, the sampling protocol developed under action A2 was adapted to this particular case. Taking into account that the processing plant works in batch (4 batches per day), the applied sampling method was that of complete sample.

Once three representative samples were collected, they were sent to the Institut de Recerca i Tecnologia Agroalimentaries (IRTA), from Catalunya, for their physico-chemical characterization.

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The analyzed variables were the following: DQOt, Total Solids, Volatile Solids, Total kjeldahl Nitrogen, total ammonia nitrogen, protein, fat, fiber, pH and total phosphorus.

Compared to bibliographic data of a mixture of typical wastes from a processing plant of animal by-products of category 3, the characterized samples have a higher protein content (42% of Volatile Solids, versus 37% in the literature) but a lower fat content (22% of volatile solids versus 52.3% in the literature).

It should be noted that although the samples were collected following a sampling protocol, their heterogeneity is large and, therefore, the results of the characterization may vary.