

# **Improvement of final lipid products (fat) obtained from animal by-products to supply local livestock sector**

## **Summary**

The format of the fats obtained from SANDACH has been modified and improved, to solid or semi-solid consistencies, both at laboratory and at pilot scale. The new product obtained can be supplied directly to the small farmer in order to manufacture his own small-scale compound feed, using it as a caloric contribution and improving the traceability of animal feed.

## **Objectives**

To improve the final lipid products (clarified fats) obtained from animal by-products (Category 3 ABPs) to supply the vicinity livestock sector. The technical objectives are to obtain new improved formats (solid or buttery) of the lipid material from ABPs, to study their palatability and nutritional value and to optimize, at pilot plant scale, the preparation process of the best formats obtained.

## **Description of project activities**

1- Implementation of process approximations to improve the solid consistency of lipid products through different conditions and parameters. 2- Determination of the palatability and nutritional value of the new formats obtained so that they meet the criteria established for animal feed as well as to test their addition in the feed of a farm and study its effect and acceptance. 3- To optimize the preparation process of the selected formats at pilot plant scale. 4- Dissemination of the results obtained.

## **Final results and practical recommendations**

The results of the project have been: 1-It has been possible to extract the lipid material from the fines by means of solvent mixtures, and to quantify and identify its composition. Approximately 48% of fines are triacylglycerides, without the presence of phospholipids in the soluble part of organic solvents. It has been extracted 25% of the fat present in the fines using water at moderate temperature as solvent and 70% using CPME (a solvent considered not dangerous to the environment, and recommended in the Green Chemistry processes). 2- A grease with a solid form has been obtained at a laboratory scale through mixtures of ABPs:CaO and a solid fat by hydrogenation of the initial ABPs. 3-The grease obtaining process with the form of a solid has been developed through mixtures of ABPs:CaO at pilot plant scale. 4-The results of the tests of the use of the greasy fat, as caloric component of feed for the feeding of fattening pigs, have been acceptable, taking into account both in palatability and in nutritional value.

## **Conclusions**

The objectives have been fulfilled, obtaining, at small scale, new formats of lipid products of semisolid consistency, derived from Category 3 ABPs. Specifically, it is concluded that: it is possible to extract the lipid material fines, quantify it and identify its components. At laboratory scale, the fat format can be improved to solid or semi-solid consistency by mixing ABPs:CaO or by hydrogenation of the initial ABPs. At pilot plant scale, a grease can be obtained by ABPs: CaO mixtures, the composition of which basically consists of triglycerides. This greasy fat could be applied in the composition of small scale

animal feed.

### Operational Group Leader

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### Operational Group Coordinator

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### Other Operational Group members (beneficiaries of aid)

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### Keyword-category

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Animal husbandry and welfare  
Waste, by-products and residues man

### Territorial scope

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Province	County
Lleida	Segarra

### Project dissemination *(publications, seminars, multimedia...)*

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Notícies en pàgines web dels membres del grup, publicacions tècniques i jornades tècniques.

### Pàgina web del projecte

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www.subcarnechevarria.com

### Other project information

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**Projecte period****Approved budget**

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Starting date (month-year): Novembre 2015

End date (month-year): Setembre 2017

Project status: *Finalised***Total Budget: 190.013,14 €***Funding source DARP: 78.160,04 €**Funding source UE: 58.962,84 €**Own funds: 52.890,26 €*

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*Basic regulation: Ordre ARP/258/2015, de 17 d'agost, per la qual s'aproven les bases reguladores dels ajuts a la cooperació per a la innovació a través del foment de la creació de grups operatius de l'Associació Europea per a la Innovació en matèria de productivitat i sostenibilitat agrícoles i la realització de projectes pilot innovadors per part d'aquests grups, i es convoquen els corresponents a 2015.*

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