



**Programme: FP7 Cooperation**  
**Theme 2 Food, Agriculture, Fisheries and Biotechnologies**

**Deliverable 22 - Updated TLs on European RTDI initiatives**

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| <b>Project Acronym :</b>        | AQUAINNOVA   |
| <b>Project title :</b>          | Supporting governance and multi-stakeholder participation in aquaculture research and innovation |
| <b>Grant agreement number :</b> | 245238 – FP7-KBBE-2009-3   |
| <b>Project coordinator :</b>    | European Aquaculture Technology & Innovation Platform  |



**Deliverable 22** is the development of updated TLs on European RTDI initiatives

Workpackage 3 is tasked with sectoral mapping and benchmarking.

Gap analysis within the different components and prioritisation of key issues cannot be achieved without having a clear benchmark position for the different Thematic Areas of the Aquaculture value chain. Specific objectives of this workpackage are to draft a RTD summary per Thematic Area containing a compilation of past and in-progress EU RTD projects and to identify and assess research outcomes generated by EU funded research projects and their potential impacts per Thematic Area.

To enable these tasks a database of projects, coordinators and project's outcomes (D20) has been set in place by the Aquainnova team. A total of 121 EU projects (of which 31 are in FP7) have been identified. For each one of these projects a Technical Leaflet has been developed or is in the process of being finalised.

Within the earlier European Projects "Profet" and "Profet Policy" a database of Technical Leaflets on EU funded (FP5 and FP6) RTD projects relevant to Aquaculture and Fisheries was developed.

Once new information concerning past FP6 projects became available, earlier "Profet" Technical Leaflets have been updated, redesigned and restructured, the focus being more on project's output highlights and on possible follow-on actions. The resulting updated TLs for FP6 projects (D22) are available online on the EATIP public website.

Moreover, new Technical Leaflets (D26) have been created for FP7 RTD projects relevant to the aquaculture sector and to the scope of EATIP. In these TLs the focus is on key new knowledge expected and on potential impacts. The resulting new TLs for FP7 projects (D26) are also available online on the public EATIP website.

A snapshot of the EATIP/Aquainnova website pages listing the updated TLs can be found as an annex to this document as well as an example of TL developed for both FP6 and FP7 projects.

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FP 5 and FP 6 projects

On the top of the page you can find the newly developed FP 6 TLs, updated with relevant information on projects' impact and follow on actions. These TLs are an output of the Aquainnova project.

On the bottom of the page you can download previously developed FP 5 and FP 6 TLs. These are an output of the Profet Policy project: [www.profetpolicy.info](http://www.profetpolicy.info). The TLs have been grouped under different subjects related to the themes of a series of transnational workshops that took place between 2007 and 2008.

Note: the search tool of this website can pages and documents contained in this website.

**FP 5 and FP 6 projects**

This page contains summaries (Technical Leaflets) of EU funded projects related to Aquaculture

**Downloads**

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| Title   | Size                          |
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| <p><b>ALGADEC</b></p> <p>Development of rRNA biosensors for the detection of toxic algae</p>  | <p> Download (329,737 kb)</p> |
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Annex II – TLs developed for FP6 projects



Aquainnova

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

# FEEDFATSAFETY

**Quality and safety of feeding fats obtained from waste or by-products from the food chain**

## The Challenge

Consumer safety depends on assessing and monitoring the entire food chain to prevent public health risks. To ensure traceability, it is important to assess the composition, quality and contamination of fat materials used in animal feed for safe meat production. The scarcity of information on these fats leaves a number of health and safety questions unanswered.

There is a lack of basic chemical information on these fats. Scientists, commercial companies and policy makers do not yet know if fat by-products<sup>1</sup> and/or co-products<sup>2</sup> can be used safely in animal feeds. Little is known about the nutritional quality of fats for different animal production systems, the ability of fats to modify the lipid composition of meat, and how fats affect the level of oxidation in meat and other tissues. The toxicological or physiological effects of certain fat degradation compounds are unknown, and has it not been established how these fats contribute to the overall intake of contaminants through the diet. This observation includes contaminants such as dioxins, Polychlorinated Biphenyls (PCB), Polybrominated Diphenyl Ethers (PBDE) and Polycyclic Aromatic Hydrocarbons (PAH's).

These characteristics and their effects on food safety must be quantified in order to assess whether it is safe to use these fats in animal production. This information will ultimately protect consumers and animals alike.

## Project Objective

The primary aim of 'FEEDFATSAFETY' was to ensure that meeting animal nutrition requirements also matches the safety and quality standards required for certain types of meat production. This is particularly relevant to the use of fats originating from by-products or co-products of the food chain. This aim needed to be achieved in accordance with the demands for consumer satisfaction and animal health, and with regard to environmental protection.

## Key Points

- Characterise the different kinds of fat materials coming from by-products or co-products of the food chain
- Identify the effects of selected fats on poultry and rabbit production
- Determine if there was a transfer of contaminants from feed to meat and other tissues

### EATiP Thematic Area of Relevance

**TA1:** Product Quality, Consumer Safety and Health

**TA2:** Technology and Systems

**TA3:** Managing the Biological Lifecycle

**TA4:** Sustainable Feed Production

**TA5:** Integration with the Environment

**TA6:** Knowledge Management

**TA7:** Aquatic Animal Health and Welfare

**TA8:** Socio-Economics and Management

### Key Words

Feed, Fats, By-products, co-products, Waste management

### Project Information

**Contract number:**

7020

**Contract type:**

Specific Targeted Research Project

**Action line:**

FOOD-2003-T6.6 Recycling and upgrading organic wastes from the food chain in environmentally friendly healthy food production

**Duration:**

39 months (01/01/2005 – 31/03/2008)

**Coordinator:**

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**Project website:**

<http://www.ub.edu/feedfat/>



- Standardise the quality of these fats
- Improve quality control of these fats
- Assess consumer confidence in the use of fats in feed

## Output Highlights

### Fatty acid composition

Fat materials obtained as co- and by-products of the food chain can provide valuable nutritional characteristics in feeds for animals but it is important to ensure a suitable level of quality and safety. New knowledge has been generated on how the relevance of the fatty acid composition of feed fats can help meat producers to achieve a particular and desirable fatty acid profile in meat and meat products.

### Contaminants

New knowledge is now available on the transfer of main contaminants from feed to meat, plasma and to other target animal tissues. The use of less polluted fats could promote a lower level of contaminants in the animal carcasses and their residues. This knowledge will allow feed and meat producers to produce safer higher quality products. It may also help policy makers set new maximum contaminant levels in feeds and meats.

### Classification

A system of classification of fats in feed stocks (raw materials) from co-products and by-products has been developed (Gasparini et al. European Journal Lipid Science and Technology 109, 673-681, 2007). This will help feed manufacturers better identify and control their fat feed stocks. At the policy level, it could be used as the basis of a recommended control procedure.

### Analytical methods

A "Handbook of analytical methods for fat control" has been produced collating the procedures recommended for the control parameters assessed in fats. This has the potential to improve the standardisation of control methods for these types of fats.

### Safety concerns

The principal investigators recommend limiting the presence of polycyclic aromatic hydrocarbons (PAH) through additional processing. New data identified the need to improve fish oil safety especially oil analysis when PCB and dioxins of environmental origin are of concern. The relationship between regulated maximum feed levels of lipo-soluble dioxin and dioxin like Polychlorinated Biphenyls in fish oils used in feeds and the maximum levels permitted in meat and other foods still has yet to be established.

### Economically viable alternatives

Conclusions from the research indicate that some co-products obtained from acid oils from chemical refining, acid oils from physical refining and animal fats are economically viable alternatives for feed and meat producers when compared with conventional oils such as soybean, rape, sunflower and palm oil.

### The Full Report:

For a comprehensive description of the research project, visit [www.ub.edu/feedfat](http://www.ub.edu/feedfat).

## Next Steps – Suggested Actions/Follow On



### Policy

- The standards and guideline developed by the project could be adopted by policy makers to improve the regulations in the subject area.



### RTD

- For some feed fat categories, an adequate system of purification should be studied in order to increase quality and safety of their use. Other fats need only a better system of traceability control and good manufacturing practices to reach suitable quality levels.
- Dioxins and DL-PCBs are highly accumulated in animal tissues because of their liposolubility. This fact poses a question about the need of new studies establishing relationships between the regulated feed maximum levels and the regulated meat and another food maximum levels of dioxins and DL-PCBs.

- A new project initiated at national level (Spain) has already started to develop new technologies to transform some fat by products obtain fats with altered animal nutritional properties with a specific aquaculture application.



#### ***Knowledge Transfer***

- Dissemination to industry is essential as this was not a task within original project.

### **Related Publications/Projects**

Abalos et al, Chemosphere 2008; Nuchi et al, J Agr Food Chem 2009, Gasperini et al, Eur J Lip Sci Technol 2007