The French Feed Database
An efficient private-public partnership

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The French Feed Database

The French Feed Database is based at AgroParisTech, the principal French university for agricultural and life sciences engineering.

It was created in 1989 by professors from the Department of Animal Science, Julien Coléou et Olivier Lapierre.

AgroParisTech headquarters in Paris
The French Feed Database

- Maintained by the Association Française de Zootechnie (French Association of Animal Production)
- President: Daniel Sauvant, INRA & AgroParisTech researcher
- The database is managed by Gilles Tran
The network

◆ A network of 16 members:
  ● R & D institutes (INRA, CI RAD, Institut de l’Elevage), trade organisations
  ● Producers of raw materials, feed manufacturers and « firmes services » (premix manufacturers + consultancy service)

◆ The members:
  ● They provide their laboratory data
  ● They pay a yearly fee
  ● They share the collected data
  ● They bring their expertise
  ● They use the services of the database
Database contents

- Data on chemical composition and nutritive value of **raw materials** and forages
  - Excluded: compound feeds, economic data, production results
- **Only raw data** from laboratories
  - We do not collect average values from tables
- **All feed materials**
- **All characteristics**
- **All animal species**
90% of the data come from private companies

- Common feed materials: maize, soybean meal...
- Proximate analysis (protein, crude fibre...)

10% come from public research and literature

- Unusual or experimental raw materials, not found in the French market
- Nutritional data from animal experiments
Characteristics

- **Chemical and physical**
  - **Nutrients**: proteins, fibres, carbohydrates, fat, amino acids, fatty acids, minerals
  - **Physical data**: density, viscosity...
  - **Undesirable substances**: mycotoxins, trypsic inhibitors, alcaloids...

- **Nutritional values**
  - **Values obtained from animal experiments**: digestibility of energy, proteins and minerals, nitrogen and dry matter degradability...
Contents

1. 9 million of raw data (analytical and nutritional results)

- More than 2500 raw materials and forages
  - Description and definition of the products
  - Nomenclature and keywords

- More than 440,000 recorded samples
  - Each sample has a source, a provider, a country, a sample date etc.

- More than 800 characteristics
  - Each characteristic is associated to one or several methods of analysis
Intra-product variability

Crude protein of the sunflower meal

Protein, % dry matter

Number of samples

28 August 2013
Wheat and by-products: protein vs crude fibre

Graph showing the distribution of different types of wheat by-products and milling by-products based on cellulose and protein content. The graph includes various categories such as grain, milling by-products, starch by-products, and distillery by-products.
Evolution over time

Protein content of French cereal grains since 1985

Protein % as fed

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007

Wheat
Barley
Oats
Maize
Data collection

◆ Our members are required to provide data to the database

◆ Free choice of content
  ● Only raw data
  ● A minimal description is required (nature of feed, dates)

◆ Free periodicity
  ● Usually: yearly

◆ Free format
  ● Usually: extraction from internal databases and transfer via email

◆ The members provide data as they want
Data transfer and validation

- The raw data must be « translated » to our formats:
  - Conversion of feed names, parameter names, units

- The data are validated:
  - By comparing them to data already in the database.
  - By performing *ad hoc* tests:
    - Example: the sum of amino acids must be lower than the crude protein content
  - 10% of the data are rejected and must be looked at one by one
    - Some are accepted
    - Some are deleted
    - Some are corrected or changes are made to the database
io-7 software

The members have a free licence for io-7, a computerised feed table containing statistical data.
FeedBase.com

- Members have a free access to FeedBase.com, a website created with the Cereopa (Centre for Research on the Economy and Organisation of Animal Productions)
- FeedBase contains technical and economic data
Services

- Free or at reduced price for the members, full price for non-members
- Data files: raw or compiled data
- Data analysis and processing
- Literature searches and monographies
- Software and web development
- Any project about the quality of feed materials and the management of feed data
Conclusion

The French Feed Database has been serving the needs of private and public organisations of the feed sector for more than 20 years

- By providing technical data
- By helping them to develop feed data management systems
- By helping them to disseminate and publish feed data
- By helping them to take informed policy decisions about animal feeds