

The role of sample banks and databases in animal nutrition

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Introduction: Many researchers in animal feeding sector spend lots of time, money and effort in characterizing feed samples by different methods (chemical analysis, *in vivo* experiments, spectroscopy, etc). This work results in large amounts of data, normally used to write lab reports or scientific papers. When these goals are achieved both tested samples and associated data are forgotten, even eliminated.

But tested samples (especially those used in animal trials) and associated data are highly valuable, although most of us are not aware of that. Tested samples are useful as reference material in many techniques (*in vitro*, spectroscopy, etc). On the other hand, data, when analyzed together, can achieve general results like feed tables, but also in other fields: feed variability, chemical methodologies, etc.

Materials y methods: Feed Information Service (Spanish acronym: SIA) in the University of Cordoba (Spain) has developed a sample bank and a feed database in order to add value to researchers daily work. A network of associated laboratories has produced (in a dynamic process that continues today) samples and data for filling SIA banks.

During sample bank development many storage conditions (temperature, packaging technologies, etc) have been tested and selected. Regarding databases, several software packages have been created and refined with users and experts suggestions. Recently, a metadata approach has been incorporated into SIA databases.

Results and discussion: Today, SIA has a sample bank containing almost 20 000 feed samples, some of them tested for very valuable parameters like digestibility or energy content. These samples are available for SIA associates under different conditions. Meanwhile, SIA database has grown considerably in recent years, both in conceptualization issues and stored data (shown in table 1).

Table 1. Evolution of stored data in SIA database.

Time	1995 - 2009	After 2009	Total
Number of data	59 510	216 514	276 024

Nowadays, SIA is advancing in the statistical analysis of the accumulated information. First results show that potential outputs are limited by lack of metadata and standardization. In this sense, some recommendations have been developed.

Conclusion: It is possible to multiply the value of feed researchers work if their tested samples and nutritional data are incorporated into sample banks and databases. Some degree of standardization is needed but most important is to understand that information must contain metadata in order to be useful in a general context.

Summary: Many feed samples and associated data are produced by researchers. They are not used to full extent, so SIA has developed a sample bank and a database to storage and analyze them. SIA is growing quickly, but it has detected lack of metadata and standardization. Both are needed to maximize obtained outputs.