

# Application of ISO9001 in the Genetic Evaluation

**G. de Jong**

*NRS, P.O. Box 454, 6800 AL Arnhem, The Netherlands  
JongG@cr-delta.nl*

## 1. Introduction

Dairy cattle breeding has become a very competitive market, mainly based on world wide usage of AI bulls. These AI bulls are valuable for the market as they have breeding values for a large number of traits the market is interested in. The breeding values are based on data of offspring. The data has to be collected and processed as accurately as possible. The result is valuable information for every AI bull: breeding values. Breeding values based on data of offspring are the base to take decisions by breeding organisations to use a bull as sire of sons and by farmers to use a bull as sire of cows. Therefore it is important to estimate breeding values using the best quality of data and the best statistical techniques. Further it is important for the industry that the organisation providing information is able to guarantee the constant quality of the information. NRS has implemented a quality management for milk recording, type classification, herdbook registration and genetic evaluation. In August 1997 NRS received the ISO9001 certificate as proof this quality management system was applied to the four NRS products according to the international standards. Since August 1997 breeding values calculated by NRS are ISO9001 proof.

## 2. Quality management system

Applying a quality management system to a business or to a production process means that one is able to control the quality. Quality management means one can plan quality, quality can be steered and measured and quality can be continuously controlled and improved. Quality gets a meaning in the organisation, it is defined and made visible. The organisation can guarantee that the quality is as it is described and that this quality can be repeated. But quality management does not

guarantee high quality products. This depends on how the level of quality is defined.

The basic concept of quality management is that you define the quality you want to deliver, write down what you are doing, do what you have written down, proof the you have done it, learn from weak points of the system and proof that you have learned from the weak points.

For the genetic evaluation system NRS has chosen to apply ISO9001 as quality management system. ISO9001 is an international standard and is applicable to all kinds of businesses and processes and is a model for quality assurance in design, development, installation and servicing.

## 3. Documentation for ISO9001

The ISO9001 system has three layers of documentation:

- a. quality handbook
- b. procedures handbook
- c. working guides

### 3.1 Quality handbook

The quality handbook contains 20 chapters on different topics and forms the base of how the quality management system is organised in the organisation. The topics for these chapters are precisely described in the ISO9001 regulation. Five of these topics which have to deal with the genetic evaluation are development control, identification and traceability of products, process control, checking and testing, and status of checking and testing.

### 3.2 Procedure handbook

For the genetic evaluation three procedures are described: development and adjustment of genetic evaluation, genetic evaluation and publication of breeding values.

Each procedure contains the separate activities of a procedure, the person or group who is responsible, the triggering of the process and how is the activity carried out. Further a procedure contains information on goal, references, responsibilities and authorities and documentation on the procedure. In case of development and adjustment of genetic evaluation for a certain trait and species the following elements are described:

<u>Action</u>	<u>Who</u>
1. Write project	R&D-person
2. Give advice	Genetic evaluation board
3. Start project	Board of directors
4. Develop method	R&D-person
5. Advice on result	Genetic evaluation board
6. Approval method	Board of directors
7. Describe method	R&D-person
8. Document genet. eval.system	R&D-person

### 3.3 Working guide

The working guides are developed to be used during a production process, for example estimating breeding values for milk production. More than 40 working guides are currently being used by the genetic evaluation group for all the different data handling and computing processes. The minimum requirements for a working guide are that the goal of the process is described, the frequency and initiation of the process, the client (for responsibility), the input and output of the process and a description of separate actions which has to taken to run the whole process. For our own convenience check lists and some extra information on the process, like names of programmes and what they do, temporary file names, is added. This also eases transfer of a process to a new member of the group. The idea is that when a process has been handled by a new person, the organisation can guarantee the same quality of the product as when it was done by an experienced person.

### 4. Advantages

The application of IOS9001 on the genetic evaluation system improved the transparency

of the whole system and process. This transparency is important when you want to make clear what and how you are doing to an external person. Further it facilitates the start of a new person working for the genetic evaluation group. Another advantage is that the responsibilities are made more clear as one has to put on paper who is allowed or should make which decisions. At the same time the planning of processes and of new developments can be made easier as one has more insight on what has to be done and what the exact procedure is.

The ISO9001 system also improved the opinion of people about the need to document information on work that has been done. The attitude towards documenting information is positive and it has become a part of the daily work.

### 5. Some remarks

When starting to introduce the ISO9001 quality system in your organisation it is important that the whole organisation supports it. The management should be the motivators and feel themselves responsible. The people who have to work daily with ISO9001 should be involved in the setting up of the ISO9001 system.

For a good start of a ISO9001 introduction project an external expert is very valuable and can save a lot of work and time, and so also money. ISO9001 requires you document what you are doing. And actually already many things are documented in the organisation. One easily can make use of already existing documents. ISO9001 is a good opportunity to reorder the documents you have.

Further it is important to adjust ISO to your own way of working, you do not have to make new regulations or rules. Only write down what you are doing and do not implement checks and rules which are not easy to work with. Keep in mind that the goal of ISO is not

to increase the amount of work. After introduction of ISO9001 quality has become a part of the daily work and is seen as valuable tool guarantee constant quality.