

Genetic Evaluation of Norwegian Beef Breeds

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Abstract

There are approx. 60.000 suckler cows in Norway. 12.340 of these cows are registered pure breeds. The largest breeds are Hereford, Charolais, Aberdeen Angus, Limousine and Simmental. There are in total 11 different beef breeds in Norway.

Three trait groups are evaluated by multi-trait animal models and 9 different traits are evaluated. In addition information from cross breeding with Norwegian Red dairy cattle (NRF) is used in the genetic evaluation.

1. Introduction

There are approx. 60.000 suckler cows in Norway in 5.300 herds. One third of the suckler cows are owned by dairy cattle farmers. Beef production is very seldom the only income for a Norwegian farmer. Often the farmer has a payed job and/ore other additional incomes from his farm.

In 1997 Norway established its own registration system for beef production (Storfekjøttkontrollen, SFK). Before 1997 this recording was done in Sweden.

Since the year 2000 an Animal Model has been used for genetic evaluation of all traits and breeds. This evaluation includes five different beef breeds; Hereford, Charolais, Aberdeen Angus, Limousine and Simmental.

2. Beef breeds in Norway

In total 11 different breeds are represented. These are: Hereford, Charolais, Aberdeen Angus, Limousine, Simmental, Highland Cattle, Galloway, Dexter, Blonde D'Aquitaine, Tiroler Grauvieh and Piemontese. The commercial herds are dominated by cross breed animals including crosses with dairy cattle.

3. Data recording/registration

The Norwegian system for genetic evaluation of beef breeds is based on the Danish system. So far only parts of the system has been introduced. But in a few years the Norwegian system will be very similar to the Danish system. Table 1 shows a list of the actual traits.

4. Genetic evaluation

As in Denmark an Animal Model is used to estimate all breeding values of all traits recorded for purebred beef cattle. A modified version of the Animal Model is used for the traits recorded on dairy crosses.

5. Presentation of breeding values

The estimated breeding values are summarized into three sub-indices. The three sub-indices are:

- Weight gain, as direct part of growth
- Milk production, as maternal part of growth
- Slaughter quality

In addition a total 365 days breeding value is published.

The sub-indices are standardized to an average of 100 and a standard deviation of 10 for all animals belonging to the genetic base. A rolling genetic base is used.

Indices are calculated two times a year. Indices are loaded to a central database and can be found on different printouts and on the internet.

Table 1. Traits registered and used in genetic evaluation for purebred and crossbred.

Trait group	Purebreds	Crossbred
Growth and birth	Direct: Birth weight, weight 200 days, weight 365 days	
	Maternal: Birth weight, weight 200 days, weight 365 days	
Carcass information	Carcass weight	Carcass weight
	Carcass classification	Carcass classification
		Fat classification

The indices are mainly used for selection of potential bulldams and for selection of young bulls into the performance test station.

6. Conclusion

Genetic evaluation of beef cattle in Norway has a relatively short history. In a few years the Norwegian system will resemble the Danish System.

Even though the Norwegian beef cattle populations are small, our extensive recording system gives us the opportunity to run a sustainable national breeding system in five different beef breeds; Hereford, Charolais, Aberdeen Angus, Limousine and Simmental.