COW INDEXING IN SWEDEN

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The Swedish cow index gives an estimate of a cow's breeding value for milk production. Since 1976, indexes have been calculated for all milk-recorded cows (55 p. 100 of population). This makes possible an intensive selection of potential bull dams.

The construction of the index is presented, as well as a short description of how the cow index is used and published.

As the selection of bull dams also involves a certain degree of herd selection, it is of great importance that in the construction of the cow index, there should be the closest possible regard to the genetic differences between herds. When calculating cow indexes, a heritability of herd yield differences of 0.10 is used. However, the present method of index construction leads to an overestimation of the genetic differences between herd levels. The effects will also tend to accumulate, which will subsequently increase the overestimation as cow indexes are calculated for successive generations. The pedigree information contributed as well to the overestimation. Inclusion of the sire's index in the cow index accounted for an increase in cow index level per 1,000 kg increase in herd level of about 0.3 units. The effect required in order that the cow index will reflect the genetic differences between herd levels can be obtained by adjusting the heritability of herd yield differences downwards to around 0.07 to 0.08. In the long run, however, it will probably be necessary to modify the formula of the cow index.

SOME PRACTICAL ASPECTS OF SELECTING DAMS OF SIRES

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The relation between the performance of dams of sires and the breeding values of their sons has generally proved to be unsatisfactory. Among the reasons put forward most frequently are above all inaccuracies in the estimation of the breeding values together with the low selection intensity of the dams of sires.

This paper deals with some problems of the efficiency obtained in the selection of dams of sires within an " open system " on the basis of all cows that are under milk yield recording on the one hand, or within specialized herds, i.e. " closed systems " by means of contemporaries tests on the other hand.

In large herds or large breeding units comprising thousands of cows, selection efficiency in closed systems has shown appreciably better results than in open systems. In this paper a model of 10,000 cows is presented describing the selection intensity after the proving of the young cows. Two p. 100 of the young cows proved are classified as stud cows, i.e. dams of sires. This selection intensity resulted in a herd of 350 stud cows, with a reproduction rate of 20 p. 100.

Over the last decade the dams of sires have reached a genetical improvement of 2.7 p. 100.

A SUGGESTION FOR ESTIMATING THE BREEDING VALUES OF COWS IN A.I. POPULATIONS

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Description of a model for the estimation of the breeding value of cows in A.I. populations.