

a priori information can be used more efficiently and flexibly. In the present paper the relative efficiencies of four methods, two Blup versions, Contemporary Comparison and Least Squares, were investigated. For sires satisfying certain conditions two quasi-independent breeding values were estimated. The higher the correlation between these independent estimates the better the method. The results show considerable differences between the methods and indicate a superiority of Blup.

Effect of selection on the base of performance test and progeny test

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The comparative selection of mice was conducted on the base of performance test and progeny test. From heterozygous population three experimental populations were formed :

The first population was selected on the base of performance test consisted 120 mice (30 ♂ ♂ + 90 ♀ ♀), in each generation.

In the second population selection was conducted on the base of the progeny test. The population also consisted of 120 mice (30 ♂ ♂ + 90 ♀ ♀).

The control population was not selected. In every generation 30 ♂ ♂ and 90 ♀ ♀ were chosen at random and one male was mated with 3 females in order to obtain the next generation.

Selection was conducted on the base of highest weight gains between the 3rd and 6th week of life in each generation, from the second litter (the second litter was used for selection because of the necessity of comparing the results with group 2 selected on the base of their progeny). The selection was carried out for 12 generations.

Evaluating animals on the base of performance test proved to give much better selection results than on progeny test. Direct selection response was higher when selection was conducted on the base of performance test, than on the progeny test.

Estimation of body composition in live animals by use of computerized tomography

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Computerized Tomography means a presentation of anatomical information by computed synthesis of an image from X-ray transmission data obtained in many different directions through the plane under consideration. By this technique it is possible to calculate the density (CT-number) of different body tissues in different distances from the X-ray tube. Computerized Tomography (CT) is today widely used in human medicine.

In animal breeding we are interested in estimating body composition and energy content of living animals. This is important in order to improve biological feed efficiency and meat quality. The Computer Tomograph has now been tried out for this purpose at Ullevaal Hospital in Norway. By scanning 23 anestized pigs and thereafter slaughter them and

dissect the carcasses, it was possible to calculate the R^2 for prediction of body composition based on the relative distribution of CT-numbers from one tomographic plane. It was possible to describe 85 p. 100 variation in energy content of the living animal. This *in vivo* prediction was extremely good compared to what can be obtained by other known methods.

Improved technique, Computer Tomographs more suited for scanning animals, etc. gives great possibilities for a future development of a new field in animal breeding.

The use of milk recording results on social sector farms

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In Slovenia 10 000 cows are kept on 35 social sector farms. The milk recording is performed on all cows without any regard to the race, productivity, age, lactation stage, etc. After the lactation is finished, the lactation data are computed for each cow separately. At the end of the control year an annual report is made for every social sector farm according to races and lactations. Every report contains the milk and fat content in the total and standard lactation, the milk content in 100 days and per feeding day and the length of the after-calving interval and the period between the two calvings.

The cows are also classified according to their productivity and fed accordingly. Better milkcows are inseminated with the semen of better bulls, their progeny is included in the planned production.

For the development of the milk recording on the social sector farms monthly reports on the productivity of cows have been planned to improve the selection of the first calving heifers and other cows already at the beginning of the lactation.