EFFECT OF SIREGROUP WITHIN BREEDS ON GROWTH AND EFFICIENCY
AND INTERACTION WITH NUTRITION

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ABSTRACT

An important genetic within breed variation in growth capacity, feed utilisation and carcass composition makes it possible to improve these traits in beef and dual purpose cattle breeds by selection.

Performance test selection based on daily gain leads to an improvement in feed utilisation, but also to an indirect increase in birth weight and mature weight and to a reduction of the muscle bone ratio. However, by incorporation of the traits daily gain, gestation length and ultrasonic muscle area in a selection index it is possible to regulate the correlated effect of a performance test selection on birth weight, mature weight, feed utilisation and carcass composition.
Several scientific papers have documented an important genetic within breed variation in growth capacity, feed utilisation and carcass composition in animals of dual purpose and beef breeds. It is, therefore, possible to improve the efficiency and quality of the beef producing animals by testing and selection. Breeding plans with that goal have been established in many European countries.

However, the elaboration of a selecting and breeding strategy optimum in all respects, aiming at an improvement of the economic efficiency of the breeds will require that not only the genetic variation in the various traits is known but also the interactions between them and their relationships to gestation length, birth weight, feed utilisation and mature weight.

DAILY GAIN OF LIVE WEIGHT, CARCASS WEIGHT AND WEIGHT OF LEAN, FAT AND BONE

For young bulls tested at experimental stations with controlled feeding and environment, the phenotypic coefficient of variation for total daily gain ranges from 6 to 9 and the corresponding coefficient of heritability from 0.3 to 0.6 (Rittmannsperger, 1966; Platnitzer et al., 1969; Lindström and Maijala, 1970; Dietert et al., 1970; Gravert et al., 1971; Langholz and Jongeling, 1972; Trappmann, 1972; Fimland, 1973; Linner, 1973 and Andersen, 1977). The coefficient of heritability for daily carcass gain is found to be a little higher than for total live weight gain (Brännäng, 1968; Trappmann, 1972 and Langholz and Jongeling, 1972).

In an analysis of dissection data on 2330 young bulls distributed on 136 progeny groups, Andersen (1977) found a relatively great genetic variation in the composition of the gain (Table 1). The results demonstrate that when the final live weight increases from 250 kg to 450 kg the total average