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# A PRELIMINARY REPORT ON THE INTERACTION BETWEEN GENOTYPE, FEEDING, AND SEX IN DUTCH LANDRACE PIGS

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A PRELIMINARY REPORT ON THE INTERACTION BETWEEN GENOTYPE,  
FEEDING, AND SEX IN *DUTCH LANDRACE* PIGS

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An experiment with 3 replications was performed to find out if there is an interaction between genotype and feeding level (*ad libitum* versus restricted) in *Dutch Landrace* pigs. Each replication consisted of 120 or 128 animals. These animals were sired, per replication, by 9-11 boars. From each sire 2 or 3 littergroups of 4 animals were usually taken.

From each littergroup 1 gilt and 1 castrate were fattened *ad libitum*, and 1 gilt and 1 castrate were fattened restricted (twice a day using a feeding schema according to age). All animals were housed and fed in single pens, and the fattening period was from 25 to 100 kgs. live weight. The average daily food intake of the restricted fed gilts was about 79 per cent of the daily intake of the *ad libitum* fed gilts. For the castrates, the corresponding figure was 71 per cent.

The data of the first two replications were analysed at the time of reporting. In none of the 3 fattening or 14 carcass traits studied was a significant interaction between genotypes (sires) and feeding levels found. The interaction between genotypes and sexes was only significant at the 5 per cent level for ultrasonically measured backfat thickness. For this trait, the genotype at the 5 per cent level for ultrasonically measured backfat thickness. For this trait, the genotype  $\times$  sex  $\times$  feeding level interaction was also significant. More information concerning the possible existence of an interaction between genotypes and sexes was provided by data from *Dutch Landrace* pigs in progeny stations during the years 1966-1968. The data consisted of 1869 littergroups of 2 gilts and 2 castrates each, sired by 817 boars. The animals were housed in single pens and were fed twice a day on a restricted level using feeding scale to live weight.

In the analysis of variance a significant sire  $\times$  sex interaction was found for backfat thickness and percentage of hams, but not for growth rate, food conversion ratio, and 6 other carcass traits studied. The interaction component of variance accounted for a very small percentage of the total variation in all traits. This is also true for backfat thickness and ham percentage. The genetic correlation between sexes was + 1, or very close to + 1, for most traits studied, except, for backfat thickness ( $r_g = + 0.90$ ), ham percentage ( $r_g = + 0.82$ ), and the score for ham shape ( $r_g = + 0.90$ ).

COMPARATIVE STUDIES ON PROGENY TEST RESULTS FROM  
STATIONS AND FIELD DATA

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Butterfat records from 270 *Red Danish* bulls tested on the basis of about 30 000 daughters, partly in farmer herds and partly at the special progeny testing stations in Denmark, were analysed. Only bulls whose sires had at least four tested sons were included in the study.

The material was analysed in two different ways. In the first analysis, the progeny test results of the same bull from field data and from stations were considered to be records of separate characters and the actual and the expected correlations between those were calculated. In the calculation of the expected correlations heritabilities of 0.20 in the field and of 0.75 at the stations were used.

The correlation between field and station results was 0.46 with an expected value of 0.81 and that between two independent field tests was 0.65 with an expected value of 0.69.

In doing so, the accuracy of the test in question can be calculated as four times the intraclass correlation between paternal half brothers.