



HYBRID VIGOUR FOR MILK PRODUCTION IN COMMERCIAL DAIRY HERDS

P. M. Hocking, J. C. Bowman

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SHOULD WE ATTACH MORE IMPORTANCE TO FEED EFFICIENCY IN CATTLE BREEDING

T. AURAN

Dept Animal Genetics and Breeding Agricultural University of Norway, Ås-N.L.M.

The actual knowledge ascertain that feed efficiency is indirectly improved when selecting for growth and milk production. We know, however, very little about the relations between feed efficiency in growth and feed efficiency in milk production.

In this paper, the plan for an experiment concerning the feed efficiency both in growth and in milk production is presented. Progeny groups from 20 bulls will be recorded during a two years periode for food intake, growth and milk production. The experiment will last for eight years and will contain altogether about 600 animals.

MILK YIELD AS A SELECTION CRITERION IN THE PEDIGREE HERDS

A. ZARNECKI and J. R. ONDRUSZ

Department of Genetics and Animal Breeding Academy of Agriculture, 30059 Krakow, Poland

The relation ship between first lactation milk and fat production and survival of cows up to five lactations in the Polish Pedigree Herds has been studied. The preliminary analysis indicated that the survival rates were relatively low and average herd life short. Selection differentials were much lower than the relative survival coefficients within progeny groups of progeny tested sires. This was probably due, in part, to retaining cows in the herds not because of their performance but because they were daughters of more popular bulls.

HYBRID VIGOUR FOR MILK PRODUCTION IN COMMERCIAL DAIRY HERDS

P. M. HOCKING and J. C. BOWMAN

Department of Agriculture University of Reading, Early Gate, Reading, England RG6 2AT

The lactation performance of 4227 *Dairy Shorthorn* (DS), 394 *Red Friesian* (RF), 1040 *RF* × *DS*, 51 *DS* × (*RF* × *DS*) and 209 *RF* × (*RF* × *DS*) heifers in 106 herds was evaluated. A model including effects for herd-year-seasons and sires was analysed by least squares. Sire values were averaged within breed groups. Relative to contemporary *Dairy Shorthorns*, the fat yields (kg) of the groups and weightings (effective daughters) were *RF* + 29 (248), *RF* × *DS* + 25 (568), *DS* × (*RF* × *DS*) + 16 (36), *RF* × (*RF* × *DS*) + 32 (155). The relative protein yields (kg) and weightings were *RF* + 17 (107), *RF* × *DS* + 16 (265), *DS* × (*RF* × *DS*) + 14 (21), *RF* × (*RF* × *DS*) + 23 (134). Percentage heterosis for milk, fat and protein yield and fat and protein composition in the *F*₁ was 6.3, 7.5, 6.0, 0.7 and — 0.8 respectively. Heterosis estimated in the backcrosses on the basis of an additive-dominance model was twice that in the *F*₁. The value of heterosis in commercial milk production is emphasised and methods of exploiting it discussed.

THE BREEDING VALUE OF HOLSTEIN-FRIESIAN AND JERSEY Sires TRANSMITTING HIGH MILK PRODUCING ABILITY IN OTHER ECONOMICALLY IMPORTANT CHARACTERS

S. BOZO, A. DUNAY, E. SIK

Research Institute for Animal Husbandry, 2053 Herceghalom Ungarn

Studying the PD's for milk, kg fat, percent fat, conformation score and income (\$) of *Holstein-Friesian* (*n* = 331) and *Jersey* (*n* = 61) bulls qualified as top sires on a PD dollar basis being used in the USA, a close correlation (*r* = 0.8 to 0.9) has been established between PD-