

## THE UTILIZATION OF ENERGY IN DIFFERENT LINES OF MICE SELECTED FOR BODY WEIGHT

J. C. Mc CARTHY and H. WILLEKE

*University College, Faculty of Agriculture Dublin, 9, Ireland*

Selection in animals for increased body size or growth rate generally results in a correlated increase in feed efficiency. The relative contributions of changes in rate of food consumption and in maintenance requirements to correlated increases in gross efficiency and energetic efficiency were estimated in lines of mice selected for high and low body weight at five and ten weeks of age. Differences in gross efficiency occurred at young ages because the rate of food consumption differed in proportion to body weight, while differences in maintenance requirements differed in proportion to body weight to a power of 0.5 to 0.75. Differences between lines at later ages in either gross or energetic efficiency were small or nonexistent because the energy for gain formed a decreasing proportion of maintenance energy. The estimated energy for gain in each line was highly correlated with the estimated requirements of energy for changes in lean and fat. The practical significance of these results for alternative strategies of selection for increased feed efficiency are discussed.

## V. — Section ouverte et boîte aux suggestions. I

## INVESTIGATION TO IMPROVE THE METHOD OF ASSESSING THE BREEDING VALUE OF BEEF CATTLE

I. BODA, J. DOHY

*Agricultural College, Kaposvar, Ungarn*

The applicability of the selection index adopted from the regional beef breeding research program of the U.S.A. was studied on *Hungarian Fleckvich* young bull population in order to establish the extent to which the 1 year's body weight might be increased and simultaneously the birth weight — and through that calving difficulties — restrained. The index is in twice as high correlation with 1 year's body weight than with birth weight, i.e. it is a parameter having less increasing effect on the latter. Relaying upon the index values proposal has been made, which young bulls may be accounted with as "bull sires", "cow sires", respectively, and which ones have to be sorted out, concerning terminal crossing.

The relationships among performance results, among progeny test results and between performance test and progeny test results, respectively, have been studied on data of beef sire population of the American Breeders' Service that deserves attention from semen import point of view. The results emphatically call the attention that performance and progeny tests have to be carried out according to methodics specially standardized for the purposes and types of utilization.

## GENETIC PARAMETERS OF THE GESTATION LENGTH IN TYROLEAN FLECKVIEH

R. PAJANOVIC, G. MAYRHOFER, R. RIEDLER, F. PIRCHNER

*Univ. Sarajevo, Vet. Univ. Vienna, Agric. Advisory Service Tyrol, Munich Univ. Technology*

Intra-class correlations between gestation length of halfsib calves ( $r_D$ ) were .125, between gestation length of halfsister dams ( $r_M$ ) .043. In another set the regression of the gestation length of a cow on the one of her dam which gave rise to her own birth turned out as .127 ( $b_1$ ), on an independent gestation of her dam as .106 ( $b_2$ ).

Gestation length is a composite trait and the model proposed by WILHAM (1964) seems appropriate for interpretation of these correlations. Its application yields the parameter estimates  $h_D^2 = .50$ ,  $h_M^2 = .26$ , and  $r_G = -.56$  where D and M denote direct and maternal effects and  $r_G$  pertains to the genetic correlation between them.