

## SELECTION FOR THE COMBINATION OF TOTAL PROTEIN AND ENDURANCE IN MICE

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Preliminary results on the study of reciprocal combinations of lines selected separately for stress endurance and for protein deposition in both directions (negative and positive) have been reported. The experimental results suggest more success in the combination for the groups where the characters have been selected in the opposite direction (high stress endurance (B+) and low protein deposition (P-); low endurance (B-) and high protein deposition (P+)) compared to the groups where both characters have been selected in the same direction (B + P +; B - P -). It can be suggested that the important cause of the above phenomenon is the indirect dependance of the two characters on body weight.

Previously the selection of lines for high and low protein deposition and for high and low stress endurance resulted in differential body weight in the different lines, such that the lines with higher protein deposition and lower susceptibility to stress were heavier and the lines with lower protein deposition and higher endurance were relatively small. The indirect significance of the body weight for both the selection criteria can also be observed in the phenotypic correlation between body weight and protein deposition (+.5) and between body weight and endurance (-.3) in the second combination generation. On the other hand the interesting point to note for selection experiment is the relatively high heritability for the susceptibility to stress (.44), which is higher than the heritability of protein deposition (.24).

EFFECT OF ACCURACY OF CONTEMPORARY AVERAGES  
ON THE EXPECTED GENETIC GAIN FROM SELECTION

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A simulation study was undertaken to study the effect of farm size, number of sows per boar and length of contemporary averages on the response of within-farm selection of sows. The results can be summarized:

1. Increasing the number of weeks of past results from 4 to 26 weeks increases the correlation between index and genotype, more in small farms than in large ones.
2. The optimal length of contemporary averages is about 26, 13 and 7 weeks for farms having 4-16, 24-48, and 64 sows, respectively.
3. Effective farm size is the main factor determining selection response. The selection response is reduced at least by 11 p. 100, 3 p. 100 in farms using only 1 or 2 boars, respectively.
4. Heritabilities (0.2 or 0.4) do not influence the optimal length of contemporary averages, but seasonal effects do. The greater seasonal effects are assumed the shorter optimal length of contemporary averages result from this study.
5. For practical purposes a uniform length of contemporary averages for different farm sizes and characters is proposed.

ZÜCHTUNG UND ZUCHTORGANISATION BEIM SCHWEIN UNTER DEM EINFLUSS  
DER KÜNSTLICHEN BESAMUNG

N. BAUM

1. Die Züchtung von Hybridschweinen wird in der DDR auf der Grundlage eines den gesamten Produktionszweig umfassenden Zuchtprogrammes durchgeführt.

Zum Hauptsteuerungselement wurde die künstliche Besamung entwickelt. Damit kommen genetische und produktionsorganisatorische Faktoren im Komplex mit Elementen der Leitung und Planung zur Anwendung.