

- Negative correlations of traits afford substantial lower minimum-requirements than positive correlated traits.
- The best relation of the selection limits of the individual traits is at function of the percentage of selection, of the phenotypic and genetic covariances between the traits, and of the economic weights. To find the optimal selection limits a very high calculation expense is require, if there are more than two traits considered.
- The relative inferiority of an optimal simultan-selection in comparison with index selection ranges from 2 to 40 per cent. The inferiority increases if more traits are considered, if the percentage of selection is enlarged and if the antagonism between the traits is more pronounced.
- Therefore the simultan-selection can be recommended as an alternative to index selection only, if we can select very intense and if the selection is restricted to two positive correlated traits, which can't be recorded at the same time.

CORRELATED EFFECTS OF EXTREME SELECTION ON FATTENING  
AND CARCASS TRAITS IN PIGS

R. SILER and F. PLOCEK

*Research Institute of Animal Production, Prag*

Results of the progeny testing of 181 Czech *Large White* boars in 1978 were used to analyze the effectiveness of extreme selection. Groups with extreme average daily gain (835 g) showed a less favourable backfat thickness (2.77 cm) and a low lean from ham (17.38 p. 100). These unfavourable relations were already not so expressive in the case of eye muscle area. As a consequence of selection for low backfat thickness (2.50 cm) less favourable value of average daily gain (763 g) was found. On the basis of these results it is possible to conclude that selection for high daily gains is not suitable. Generally it is to emphasize that by extreme selection still a corresponding response can be achieved but this effect has to be evaluated with regard to negatively correlated effects.

SELECTION FOR PROLIFICACY IN SHEEP IN RELATION  
TO MEAT PRODUCTION CHARACTERS

J. B. OWEN, K. BROWN and R. FLINT

*Department of Agriculture, University College of Noth Wales  
Bangor, Guynedd, U.K.*

In diesem Beitrag werden die vorläufigen Ergebnisse einer Untersuchung über die Eigenschaften von Mutterschafen untersucht, die sich deutlich in Merkmalen der Fruchtbarkeit unterscheiden.

In dem Versuch wurden die Mutterschafe in 3 Gruppen aufgrund ihrer Fruchtbarkeitsmerkmale eingeordnet. Trotz unterschiedlicher Ablammzahlen ergeben sich wenig Unterschiede in den Nachkommengruppen, mit der Ausnahme, daß in der Gruppe mit der höchsten Fruchtbarkeit die Verluste hoch waren und gelegentlich unfruchtbare weibliche Lämmer geboren wurden.

Die Ergebnisse zeigen, daß weitreichende Unterschiede in der Fruchtbarkeit von Mutterschafen verbunden sind mit einigen wenigen Unterschieden in anderen Merkmalen. Eine bessere Lämmerproduktion ohne nachteilige Folgen kann mit der Verwendung von Mutterschafen mit sehr guter Fruchtbarkeit erreicht werden.

ANTAGONISTIC SELECTION FOR CORRELATED BODY WEIGHT TRAITS OF MICE

V. BUTLER, I., H. WILLEKE and F. PIRCHNER

*University of Technology Munich, Weihenstephan,  
D-8050 Freising-Weihenstephan*

To verify the effects of antagonistic selection, mice were selected for high 3- to 5 weeks body weight gain and low body weight at 8 weeks of age. The selection program involved also single trait mass selection for high 3- to 5 weeks body weight gain and high and low 8 weeks