DIRECT AND CORRELATED RESPONSES TO SELECTION FOR ECONOMY OF PRODUCTION AND CARCASS LEAN CONTENT IN LARGE WHITE PIGS

M. ELLIS, W. C. SMITH AND J. P. CHADWICK

Department of Agriculture, The University, Newcastle upon Tyne, NE1 7RU, ENGLAND

AND

R. LAIRD
West of Scotland College of Agriculture, Auchincruive, Ayr, KA6 5HW, Scotland

SUMMARY

Selection for economy of production and carcass lean content was practised in a closed population of Large White pigs for some 10 generations. Boars and gilts were performance tested in groups of two or three full-sibs over the liveweight range 27 to 87 kg using an ad libitum feeding regime. Selection of animals at the end of the test period was based on an index which incorporated individual daily liveweight gain and ultrasonically measured backfat thickness and a group feed conversion ratio. A Large White genetic control herd, maintained by random selection of replacement breeding stock, was kept in the same environment and was used as a basis for measuring genetic change in the selected population. Analysis of data from animals undergoing routine performance testing has shown that the selection programme resulted in significant improvements in food conversion ratio and ultrasonic backfat thickness but no change in growth rate. These changes have been accompanied by a reduction in the voluntary food intake of selected animals.

The paper will cover the background of the experiment and give details of the selection programme (selection intensities and differentials and generation intervals). Responses to selection in terms of growth and carcass characteristics will be reported and differences between the two lines in carcass tissue deposition rates will be quantified.