

EVALUATION OF PERFORMANCE AT SLAUGHTER OF TWENTY COMBINATIONS OF THREE-BREED CROSSES OF PIGS

M. H. FAHMY†, W. B. HOLTSMANN‡ AND T. M. MACINTYRE§
Agriculture Canada and Laval University, Canada

SUMMARY

Two castrated male pigs from each of 620 litters were fed *ad libitum* to 90 kg market weight at three stations. The pigs represented 20 three-breed crosses produced by mating Yorkshire, Landrace, Lacombe, Hampshire and Duroc sires to Landrace-Yorkshire, Hampshire-Landrace, Large Black-Lacombe, Large Black-Landrace, Duroc-Lacombe and Duroc-Yorkshire dams. The data on feed conversion, average daily gain, age at slaughter, backfat thickness and area of loin eye muscle were analysed by least-squares.

Within breed cross of dam, pigs sired by Hampshire were consistently superior in feed conversion, carcass quality and in 3 crosses out of 5 had the fastest growth rate during the fattening period. They were, however, the oldest at 90 kg live weight. Pigs sired by Duroc ranked second in carcass quality and growth rate, whereas those sired by Landrace had the slowest growth rate. The pigs produced by Hampshire-Landrace sows were superior in carcass quality but inferior in feed conversion and growth to those from sows of the other five crosses.

In descending order, the four highest ranking crosses based on an index combining average daily gain, backfat thickness and feed efficiency were Hampshire × (Landrace-Yorkshire), Hampshire × (Duroc-Lacombe), Duroc × (Landrace-Yorkshire) and Hampshire × (Large Black-Landrace).

INTRODUCTION

BICHARD AND SMITH (1972) examined various systems of crossbreeding and concluded that in swine the optimum system is likely to involve a two-breed-cross dam line mated to a terminal sire line. The dam line is chosen on the basis of its high maternal ability, whereas in the sire line the choice is based on the ability to transmit to the progeny fast growth and superior carcass quality. Dickerson (1973), who gave relative economic weights to the different traits involved, reached the same conclusion.

While there is little controversy about the system itself, the choice of both sire and dam lines is complicated by the many problems involved in the economic evaluation of the overall performance of the various combinations (Glodek, 1974). With that in mind, a crossbreeding experiment was initiated

† Research Station, Agriculture Canada, Lennoxville, Quebec J1M 1Z3.

‡ Department of Animal Science, Laval University, Ste-Foy, Quebec G1K 7P4.

§ Research Station, Agriculture Canada, Nappan, Nova Scotia.