

# CROSSBREEDING SWINE: EVALUATION OF TWENTY-EIGHT CROSSES OF MARKET PIGS

M. H. FAHMY and C. S. BERNARD

*Canada Department of Agriculture, Research Station, Lennoxville, Quebec.  
Received June 7, 1971, accepted October 6, 1971.*

## ABSTRACT

Data from 948 uncastrated male pigs (323 litters) from 28 one-way crosses among eight different breeds were analyzed for age at market weight (75 kg carcass weight), carcass backfat measurements (the sum of the maximum depths over the shoulder and loin areas) and an index combining the two traits. The crosses resulted from mating Yorkshire (Y), Landrace (Ld), Lacombe (Lc), Hampshire (H), Duroc (D), Berkshire (B) and Large Black (LB) sows with Ld, Lc, H, D, B, LB and Tamworth (T) boars in a half polyallel mating design. The youngest pigs to reach market weight were those from D × Ld, LB × H, LB × D and D × Y crosses (173.0 to 175.6

days), and the oldest were from B × Y, T × LB, Ld × Y and T × B crosses (191.9 to 186.8 days). The pigs with the least depth of backfat were those by H boars and Ld, Lc and Y sows (7.2, 7.5 and 7.8 cm, respectively). Pigs with LB and T ancestry had thicker backfat than pigs of other crosses. In descending order, the five highest ranking crosses based on an index combining the two traits were D × Ld, H × Ld, H × Lc, H × Y and D × H. The effects of breed of sire, breed of dam, and the partial regression on carcass weight were statistically significant for the two traits studied.

## RESUME

On a analysé les résultats d'une expérience faite avec 948 porcs mâles non-castrés (323 portées) issus de 28 croisements, afin de classer ces derniers selon leur âge correspondant au poids du marché (carcasse de 75 kg), selon l'épaisseur totale du gras du dos (la somme de la profondeur maximale à l'épaule et à la longe), et selon un indice qui tient compte des deux traits simultanément. Les croisements provenaient de truies Yorkshire (Y), Landrace (Ld), Lacombe (Lc), Hampshire (H), Duroc (D), Berkshire (B) et Large Black (LB) et de verrats Ld, Lc, H, D, B, LB et Tamworth (T) dans un plan d'accouplements mi-polyallèles. Les porcs issus des croisements D × Ld, LB × H, LB × D et D × Y ont atteint le poids du marché les premiers

(173.0 à 175.6 jours), tandis que ceux des croisements B × Y, T × LB, Ld × Y et T × B l'ont atteint les derniers, soit de 191.9 à 186.8 jours. Ce sont les porcs provenant des verrats H et LD et des truies Ld, Lc et Y qui ont eu le moins de gras dorsal, soit 7.2, 7.5 et 7.8 cm, respectivement. Les porcs ayant des ancêtres LB et T ont eu plus de gras dorsal que ceux des autres croisements. Les croisements les plus hautement qualifiés d'après l'indice qui tenait compte des deux traits ont été dans l'ordre décroissant suivant: D × Ld, H × Ld, H × Lc, H × Y et D × H. L'influence de la race du porc, de la race de la mère et de la régression partielle sur le poids de la carcasse a été significative pour les deux caractéristiques étudiées.

## INTRODUCTION

Numerous studies have been reported on the relative market value of purebred and crossbred pigs (Carroll and Roberts, 1942; Craft, 1953; Fredeen, 1957). They have consistently shown that crossbreds are superior to purebreds in rate and efficiency of gain, and generally intermediate between the parent breeds in carcass traits. Although over 85% of the pigs marketed in North America are some combination of two or more breeds, information is lacking to direct the industry as to the breeds that should be utilized and the combination in which they should be crossed to take advantage of their full potentiality.

A broad study was undertaken to rank crossbred pigs, based on their performance under comparable environmental conditions. The main objective of the experiment was to rank the breed crosses with respect to sow productivity (Holtmann *et al.*, 1971). Males from the project were available to rank the two-breed crosses on the basis of growth rate and carcass traits.