

**INDUSTRIAL SWINE DOUBLE - HYBRID : THE OPTIMAL POSITION  
OF THE PARENTAL BREEDS LARGE WHITE (LW), LANDRACE (L), HAMPSHIRE (H)  
AND DUROC (D)  
P. HALMAGEAN x)**

FACULTATEA DE ZOOTEHNIE SI MEDICINA VETERINARA  
INSTITUTUL AGRONOMIC TIMISOARA 1900, ROMANIA

The success of the crossing schemes for getting the double - hybrid pigs depend on selection of superior seedstock and utilization of each breed in its optimum position. The objective of this study was to find the optimal position of each breed which are usual utilized in a four - breed static cross.

The experiment included 165 F<sub>1</sub> hybrid gilts and their litters. The experimented schemes were :

1. F<sub>1</sub> (H x D) hybrid boars were crossed with F<sub>1</sub> (L x LW) hybrid gilts, the result being <sup>1</sup>(H x D) x (L x LW) market hybrid pigs.
2. F<sub>1</sub> (H x D) hybrid boars were crossed with F<sub>1</sub> (LW x L) hybrid gilts, the result being <sup>1</sup>(H x D) x (LW x L) market hybrid pigs.
3. F<sub>1</sub> (D x H) hybrid boars were crossed with F<sub>1</sub> (L x LW) hybrid gilts, the result being <sup>1</sup>(D x H) x (L x LW) market hybrid pigs.
4. F<sub>1</sub> (D x H) hybrid boars were crossed with F<sub>1</sub> (LW x L) hybrid gilts, the result being <sup>1</sup>(D x H) x (LW x L) market hybrid pigs.

To point out the best crossing scheme the following traits were studied : fecundity, litter size at weaning, milking ability of gilts, body weight at 182 days of age, average daily gain from 91 to 182 days, some carcass characteristics and meat production per farrowed gilt.

The fecundity, litter size at weaning and the milking ability of the F<sub>1</sub> hybrid gilts crossed with F<sub>1</sub> hybrid boars are presented in table 1. These data show that the litter size and the milking ability of F<sub>1</sub> (LW x L) hybrid gilts crossed with F<sub>1</sub> (H x D) hybrid boars are higher.

The body weight at 182 days of age and the average daily gain of the (H x D) x (LW x L) market hybrid pigs are higher than of the others market hybrid pigs (table 2). The loin eye area of the (H x D) x (LW x L) market hybrid pigs is also superior (table 3).

On the basis of litter size at weaning, body weight at 182 days, slaughter yield and meat proportion from carcass, the meat production per farrowed gilt was calculated. The data presented in table 4 show that the meat production (without fat) is higher when F<sub>1</sub> (LW x L) hybrid gilts were crossed with F<sub>1</sub> (H x D) hybrid boars.

TABLE 1. FECUNDITY, LITTER SIZE AT WEANING AND MILKING ABILITY OF THE F<sub>1</sub> HYBRID GILTS

Crossing schemes F <sub>1</sub> hybrid boars	F <sub>1</sub> hybrid gilts	Fecundity (%)	Litter size at weaning	Milking ability
(H x D) x (L x LW)		65,96	7,92	36,95
(H x D) x (LW x L)		82,60	8,42	41,66
(D x H) x (L x LW)		89,28	7,80	35,35
(D x H) x (LW x L)		77,27	7,72	36,21

TABLE 2. BODY WEIGHT AT 182 DAYS OF AGE AND DAILY GAIN FROM 91 TO 182 DAYS OF THE MARKET HYBRID PIGS

Market hybrid pigs	Body weight at 182 days (kg)	Daily gain (g)
(H x D) x (L x LW)	89,17	718
(H x D) x (LW x L)	94,75	778
(D x H) x (L x LW)	92,23	758
(D x H) x (LW x L)	92,80	751

TABLE 3. SOME CARCASS TRAITS OF THE MARKET HYBRID PIGS

Market hybrid pigs	Backfat (mm)	Loin eye area (cm <sup>2</sup> )
(H x D) x (L x LW)	28,17	36,00
(H x D) x (LW x L)	28,89	39,29
(D x H) x (L x LW)	29,60	34,15
(D x H) x (LW x L)	26,56	39,06

TABLE 4. MEAT PRODUCTION (WITHOUT FAT) PER FARROWED GILT

Crossing schemes F <sub>1</sub> hybrid boars	F <sub>1</sub> hybrid gilts	Meat production per farrowed gilt (kg)
(H x D) x (L x LW)		397
(H x D) x (LW x L)		455
(D x H) x (L x LW)		403
(D x H) x (LW x L)		413

Conclusion. The results of this experiment show that the fertility, precocity and the meat production calculated per farrowed gilt were superior when F<sub>1</sub> (H x D) hybrid boars were crossed with F<sub>1</sub> (LW x L) hybrid gilts.

Selected references : Christian, L. (1970). Crossbreeding for profit, Hog farm management. Lasley P.J. (1972). Genetics of Livestock improvement, second edition. Sellier J. (1970) Ann. Genet. Select. Anim. 2, 145; 207.