

# Optimum Weights to Which Pigs Should Be Carried in Puerto Rico for Maximum Profits

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## INTRODUCTION

The importance of the swine industry in Puerto Rico has been increasing rapidly in the past few years. New and bigger swine herds have been established in the Island and several farmers are substituting garbage for concentrate feeding. A few farmers are already buying the ingredients and mixing their own rations on their farms. Tables of optimum weight to which pigs should be carried for maximum profit should be valuable as a guide for all swine producers in the Island.

Although tables of this kind were prepared for Durocs and Native pigs in 1949 (1)<sup>2</sup>, it was felt that, with more data available, their revision was necessary. At the same time a table was needed for the crossbred pigs developed at this Station.

## METHODS

The tables presented herein were prepared on the basis of data collected from 18 Duroc Jersey barrows and 73 Landrace Large Black Duroc crossbred barrows and are given separately.

The pigs considered in this study entered feeding trials which extended from weaning, at 56 to 182 days of age. The feed consumed and the gain in weight of the pigs was recorded every 14 days. The data were obtained from eight feeding trials covering the period from 1951 to 1957.

The feed used in all these trials consisted of concentrated rations mixed at the experimental farm at Lajas Substation with approximately 15.0-percent crude-protein content, 3.0 percent of fat, and 6.5 of fiber.

The data collected were plotted as growth curves in a graph. The maximum weights for optimum profit were calculated by the method of González Chapel and Cabrera (1)<sup>2</sup>. This was based on the liveweight of hogs selling at from 15 to 31 cents a pound, with feed costs varying from \$3.00

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<sup>2</sup> Italic numbers in parentheses refer to Literature Cited, p. 37.

TABLE 1.—*Optimum weights for maximum profits in Duroc Jersey barrows at per pound selling price of hogs (liveweight) indicated<sup>1</sup>*

Feed cost per 100 lb.	\$0.15		\$0.17		\$0.19		\$0.21		\$0.23		\$0.25		\$0.27		\$0.29		\$0.31	
	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W
3.00	380	123	519	149	642	170	753	186	854	200	946	212	1,031	222	1,111	230	1,184	238
3.25	291	105	430	133	553	155	664	173	790	192	857	201	943	211	1,022	221	1,096	229
3.50	209	86	348	117	471	141	582	160	683	176	775	190	861	201	940	211	1,013	220
3.75	132	68	271	100	395	126	505	147	606	164	699	179	784	191	863	202	937	211
4.00	61	49	200	84	323	111	459	138	535	152	627	168	712	181	792	192	866	202
4.25	—	—	132	68	256	97	367	116	467	140	560	156	645	170	724	182	798	193
4.50	—	—	69	51	192	82	303	107	404	128	497	145	582	160	661	173	735	184
4.75	—	—	9	35	132	68	243	94	344	116	437	134	522	150	601	163	675	175
5.00	—	—	—	—	76	53	187	81	287	104	380	123	465	140	544	154	618	166
5.25	—	—	—	—	21	39	132	68	233	92	326	112	411	129	490	144	564	157
5.50	—	—	—	—	—	—	81	54	182	80	274	101	360	119	439	134	513	148

<sup>1</sup> F = feed consumed to reach optimum weight; W = weight of the animal for maximum profit. Pigs should not be raised under conditions designated by the use of dashes.

TABLE 2.—*Optimum weights for maximum profits in Landrace Duroc barrows at per pound selling price of hogs (liveweight) indicated<sup>1</sup>*

Feed cost per 100 lb.	\$0.15		\$0.17		\$0.19		\$0.21		\$0.23		\$0.25		\$0.27		\$0.29		\$0.31	
	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W	F	W
3.00	392	120	567	153	722	179	862	200	990	217	1,106	232	1,214	242	1,314	252	1,407	264
3.25	280	96	455	132	611	160	750	183	878	202	994	217	1,102	231	1,202	243	1,295	253
3.50	176	73	351	112	507	142	647	166	774	187	891	204	1,031	222	1,098	231	1,224	245
3.75	79	50	255	91	410	123	550	150	678	171	794	190	934	210	1,002	219	1,128	234
4.00	—	—	164	70	320	105	460	133	582	156	704	176	812	192	912	207	1,005	219
4.25	—	—	79	50	235	87	375	116	502	141	619	162	727	179	827	195	920	208
4.50	—	—	—	—	155	68	295	100	422	126	539	148	647	166	747	182	840	196
4.75	—	—	—	—	79	50	220	83	347	111	464	134	571	153	672	170	765	185
5.00	—	—	—	—	8	31	148	66	275	95	392	120	499	141	599	158	693	174
5.25	—	—	—	—	—	—	79	50	207	80	323	106	431	128	531	146	624	263
5.50	—	—	—	—	—	—	15	19	142	65	258	92	366	115	466	134	559	151

<sup>1</sup> F = feed consumed to reach optimum weight; W = weight of the animal for maximum profit. Pigs should not be raised under conditions designated by use of dashes.

to \$5.50 per 100 pounds. Overhead cost was not considered in the calculations. These costs vary greatly from farm to farm according to the management procedures followed. Obviously the smaller the overhead costs the larger the net profits.

### THE TABLES

The way to use tables 1 and 2 can be demonstrated by figuring a hypothetical situation in which feed price is \$4 per 100 pounds and the pigs are selling at \$0.25 per pound liveweight. For the Duroc barrows table 2 shows that under these conditions the optimum weight to which to carry the hogs would be 168 pounds. To attain that weight the pigs will have consumed 627 pounds of feed. The feed cost would be \$25.08 and the total selling price of each pig \$42, with a profit over the feed cost of \$16.92 per head.

### SUMMARY

A study on the feeding of swine at the Lajas Experiment Substation shows the maximum weights that animals of the Duroc Jersey and Landrace X Duroc breeds should reach for best yield and maximum profit. Pigs considered in this study entered feeding trials which extended from weaning at 56 days to 182 days of age. Feed consumed and gain in weight of the pigs was recorded every 14 days. Reference tables included were worked out on this basis.

### RESUMEN

El presente trabajo incluye información sobre un estudio llevado a cabo en la Subestación Experimental Agrícola en Lajas para determinar los pesos máximos a que se deben engordar los cerdos de las razas Duroc Jersey y Landrace X Duroc, de modo que la crianza de estos animales produzca los rendimientos mayores.

En los experimentos de alimentación se usaron cerdos desde la edad del destete (56 días) hasta que tuvieron 182 días de nacidos. Cada 14 días se anotaban las cantidades de alimentos consumidos, como también las ganancias en peso. Sobre esta base fué que se prepararon las tablas incluídas, de las cuales se puede deducir que bajo las condiciones de estos experimentos, el peso máximo a que se engordó un cerdo de la raza Duroc Jersey fué de 168 libras. Para llegar a este peso el animal consumió 625 libras de alimento con un valor de \$25.08. El precio de venta de este cerdo fué de \$42.00 según los precios que prevalecieron durante los experimentos y la ganancia alcanzó a \$16.92 por cabeza.

### LITERATURE CITED

1. González Chapel, A., and Cabrera, J. I., Cross-breeding for swine production in Puerto Rico, *J. Agr. Univ. P. R.* **33** (4) 119-55, 1949.