Effect of lysine restriction in grower phase on growth performance and carcass fatness of heavy pigs

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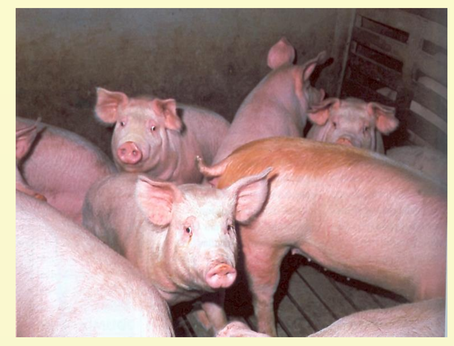
Introduction

During last decades, consumer preferences were based on leaner meat to avoid cardiovascular diseases. Currently, a change is doing and higher intramuscular fat content in meat and backfat depth in carcass is required to increase the quality of the end products. Feeding programs are being studied to get it.

This work aimed to study the effect of total lysine level on growth performance and carcass fatness of heavy pigs intended for dry-cured ham



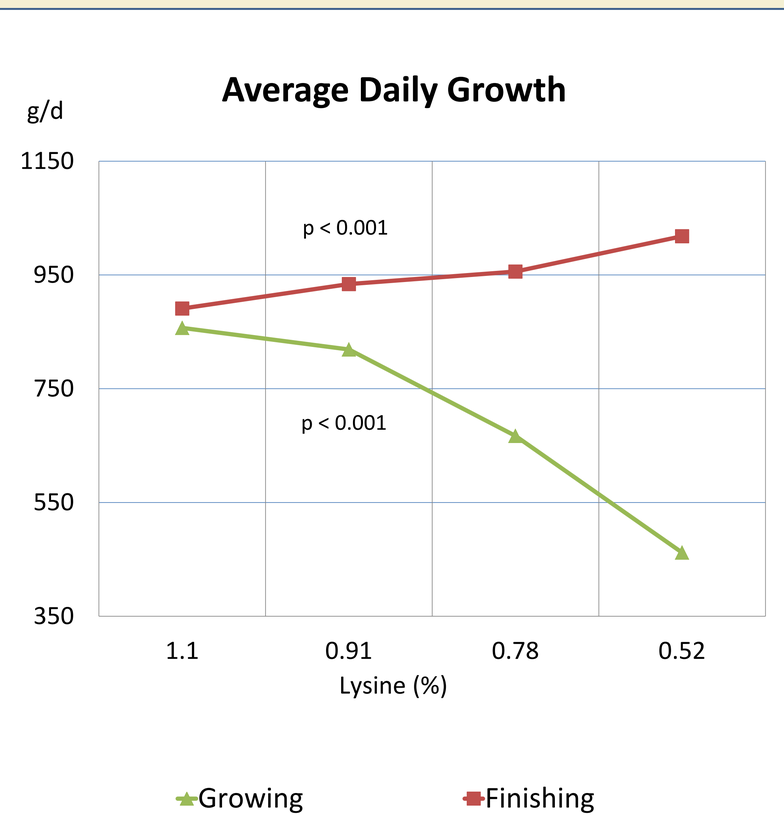
Procedures

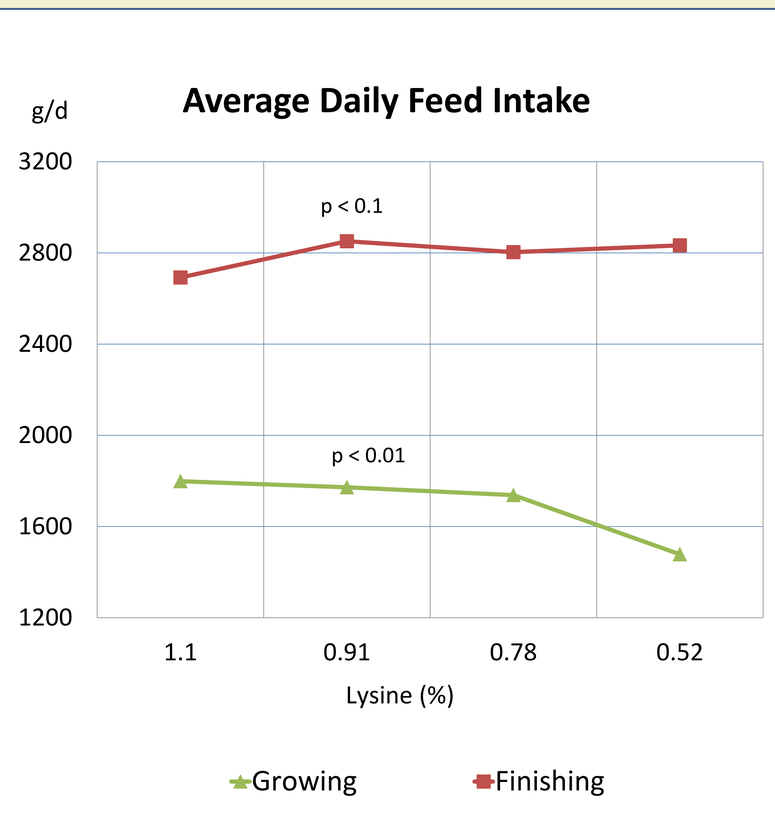
- ❑ 200 Duroc x (Landrace x Large White)
- ❑ ½ Barrows and ½ Gilts
- ❑ Initial and final BW: 26.3 ± 0.55 kg and 123.0 ± 2.35 kg
- ❑ 8 treatments: 2 sexes (barrows and gilts) and 4 levels of total Lys in growing diet (1.1, 0.91, 0.78 and 0.52%)
- ❑ n = 20 (experimental unit: pen with 5 pigs)

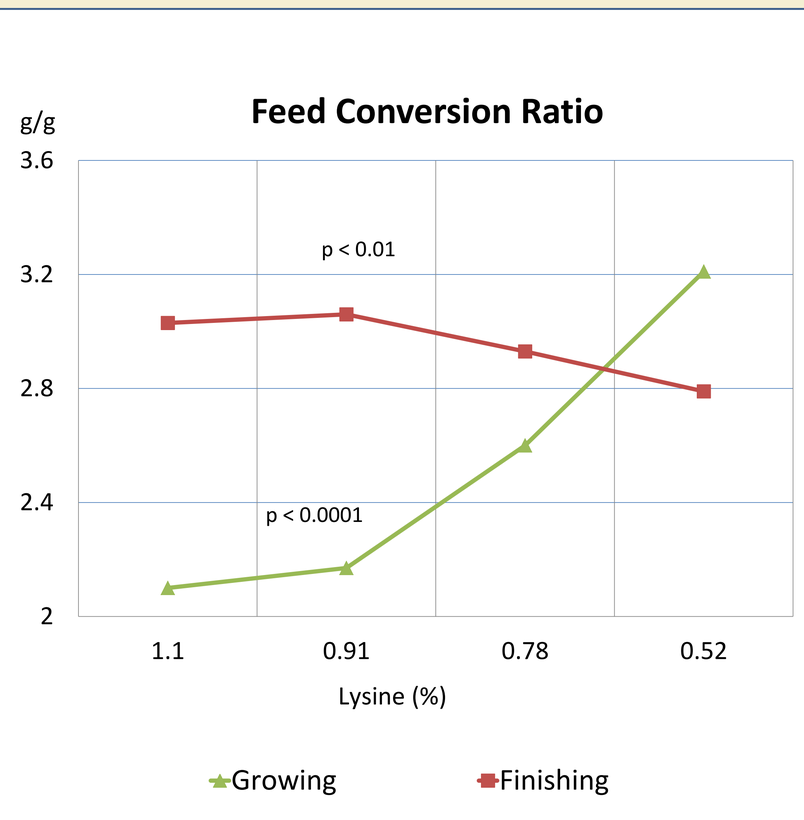
Ingredients	Growing diet				Finishing diet (until 123 kg BW)
	1.1%	0,91%	0.78%	0.52%	
Cereals	60.2	68.8	77.1	85.4	68.8
Vegetable meals	34.2	25.6	17.3	9.0	25.6
Animal fat	3.0	3.0	3.0	3.0	3.0
Others*	2.60	2.60	2.60	2.60	2.60
Nutrients					
ME (Kcal/kg)	3,260	3,260	3,260	3,260	3,260
CP (%)	24.0	19.3	16.1	14.8	19.3
EE (%)	4.32	4.15	4.45	4.30	4.15
NDF (%)	11.1	11.1	11.7	12.4	11.1
Total lysine (%)	1.10	0.91	0.78	0.52	0.91

* It included : calcium carbonate, sodium chloride, dicalcium phosphate and vitamin-mineral premix. No synthetic aminoacid was added.

Results







Overall period

	Lysine (%)				Sex		SEM (n=5)	P	
	1.1	0.91	0.78	0.52	Barrows	Gilts		lysine	sex
ADG (g/d)	892^{ab}	918^{a}	872^{bc}	848^{c}	921	843	16.0	$L^{0.002}$ $Q^{0.041}$	<0.0001
ADFI (g/d)	2369	2437	2439	2397	2497	2324	44.0	NS	<0.0001
FCR (g/g)	2.66^{b}	2.66^{b}	2.80^{a}	2.83^{a}	2.71	2.76	0.054	$L^{0.001}$	NS
Duration of growing-finishing (days)	110^{b}	108^{b}	115^{a}	119^{a}	109	117	2.2	$L^{<0.0001}$ $Q^{0.073}$	<0.0001
Fatness at m. *Gluteus Medius* (mm)	15.86^{c}	16.36^{bc}	18.18^{ab}	18.58^{a}	18.81	15.68	1.027	$L^{0.005}$	0.0002

Conclusion:

The level of 0.91% of total Lys during the growing period optimized the growth performance variables at slaughter and increased carcass fatness which is desirable in heavy pigs intended for dry-cured products