

SEX DIFFERENCE IN LYSINE AND ENERGY REQUIREMENTS OF GROWING PIGS.

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The performance of growing pigs is largely determined by the relationship between protein and energy intake. These relationships are modified by sex and genotype for any given weight.

McPhee et al. (1991) compared two genotypes, one selected (S) for lean deposition and the other a control (C), when scale fed diets of various DE concentrations. They demonstrated that the optimum lysine requirement for the two lines was different. The maximum growth rate of the S line was reached on a **diet** which provided 1MJ/d more DE and 3g/d more total lysine than the diet at which the maximum was reached with the C line. Figure 1 shows McPhee's data with the sexes separated for the finisher phase of growth. The response to total lysine intake by the C line females was curvilinear, showing an optimum growth rate at 17g total lysine/d.

Figure 1.

Strain by Sex Differences
In Response to Lysine Intake

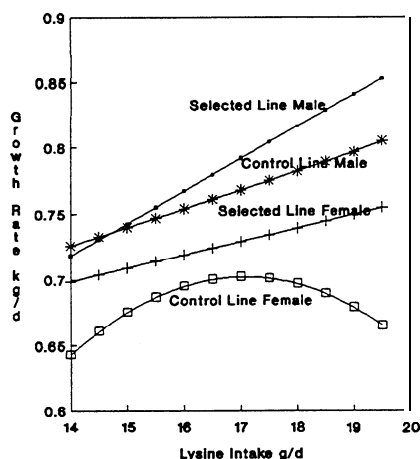
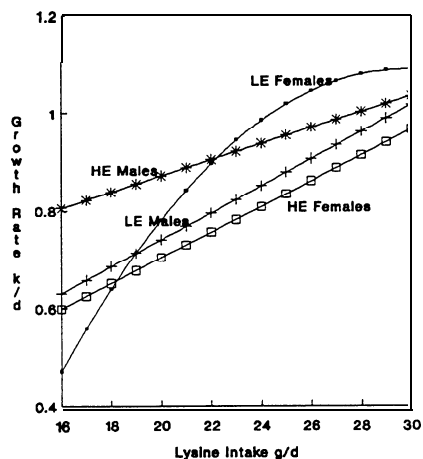


Figure 2.

Sex Differences in Relation to
Dietary Energy and Lysine



In light of this observation, a separate trial was conducted to determine the optimum total lysine and energy requirements of the S line when *ad libitum* fed diets of either 13 (LE) or 14 (HE) MJ DE/kg.

The fitted values of the response to lysine intake for each of the sexes and energy intake levels for the finisher phase of growth are shown in Figure 2. The growth rate response to lysine intake was linear when both sexes were fed HE diets and also for males fed LE diets but curvilinear for females fed LE diets. Trials are in progress to determine optimum lysine and energy intakes for both sexes.

McPHEE, CP., WILLIAMS, KC. and LINDSAY, LJ. (1991) *Livest. Prod. Sc.* (In press).