Effect of dietary energy density in the grower stage on response to energy concentration in finisher stage

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Introduction

- Adding fat to a growing-finishing diet results in ↓ ADFI, ↑ FCE
- Fat in growing-finishing pig diets increases carcass fatness
- Pigs from 20 to 85kg are in an energy dependent (Bikker and Verstegen 1993; De la Llata et al. 2001), pigs from 73kg upwards in an energy independent phase (Bikker et al. 1996a,b; Smith et al. 1999)
- Pigs fed a high fat diet in grower stage may respond poorly to a low fat diet in the finisher stage (Campbell, 2005)

Material and Methods

- 36 single sex pairs 38.9 +/- 2.9 kg
- 2 x 2 factorial design
- Experimental period: 74 +/- 3 days
- Slaughtered at 101.7 +/- 5.5kg live weight

Treatments

Grower diet fed for 35 days:

- Low density (LG- 13.0 MJ DE/kg, 17.3% CP, 1.05% Lys)
- High density (HG-15.0 MJ DE/kg, 20.2% CP, 1.23% Lys)

Finisher diet fed to slaughter

- Low density (LF - 12.9 MJ DE/kg, 16.2% CP, 0.9% Lys)
- High density (HF- 14.8 MJ DE/kg, 17.0% CP, 1.08% Lys)

Diet composition %

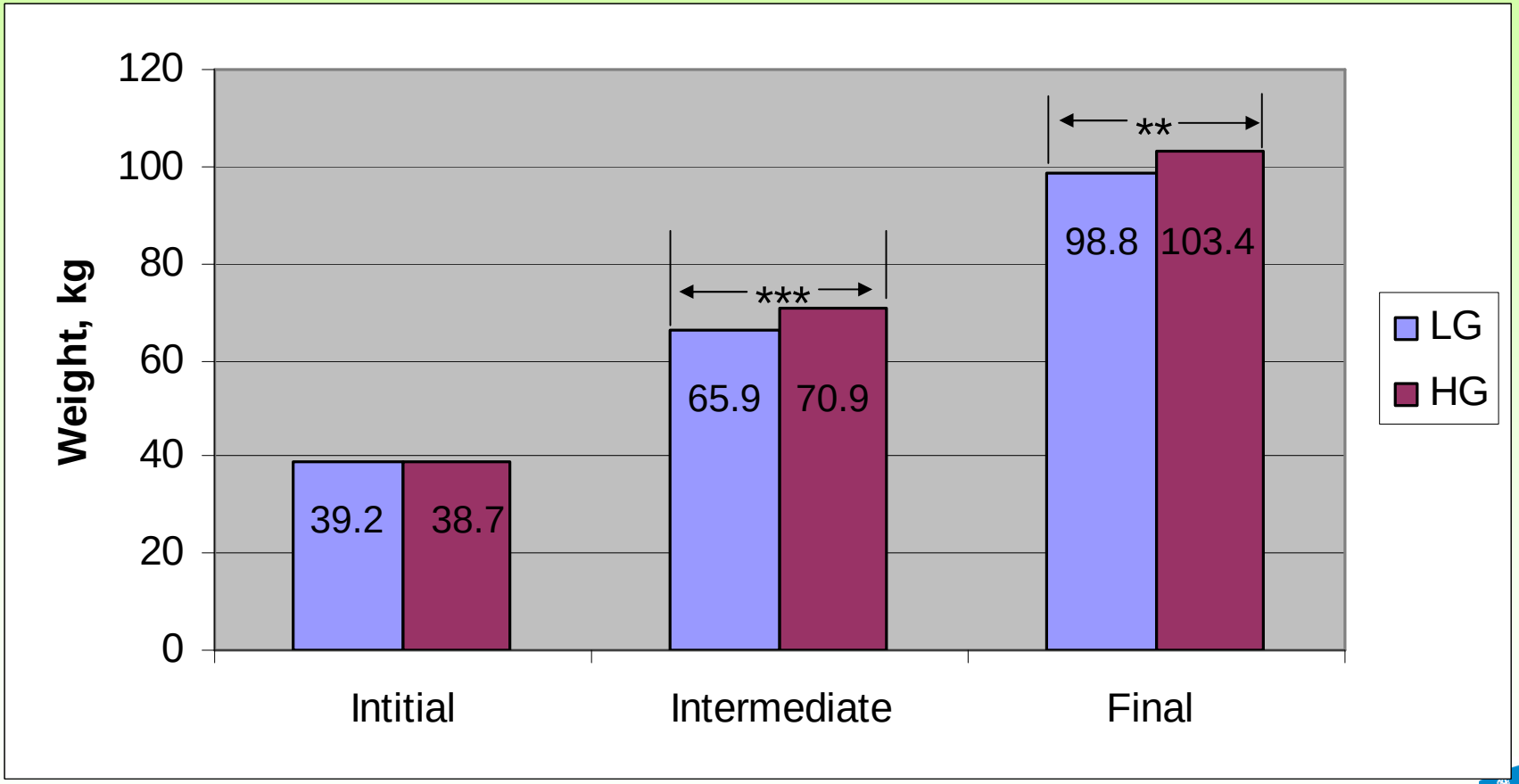
	LG	HG	LF	HF
Barley	80.2	-	84.1	19.9
Wheat	-	64.9	-	51.8
Soy	17.3	27.2	13.5	20.2
Fat	-	5.1	-	5.2
L-Lysine HCl	0.48	0.47	0.41	0.47
DL-Methionine	0.15	0.18	0.09	0.14
L-Threonine	0.17	0.18	0.13	0.18
L-Tryptophan	0.01	0.02	0.02	0.02

Results

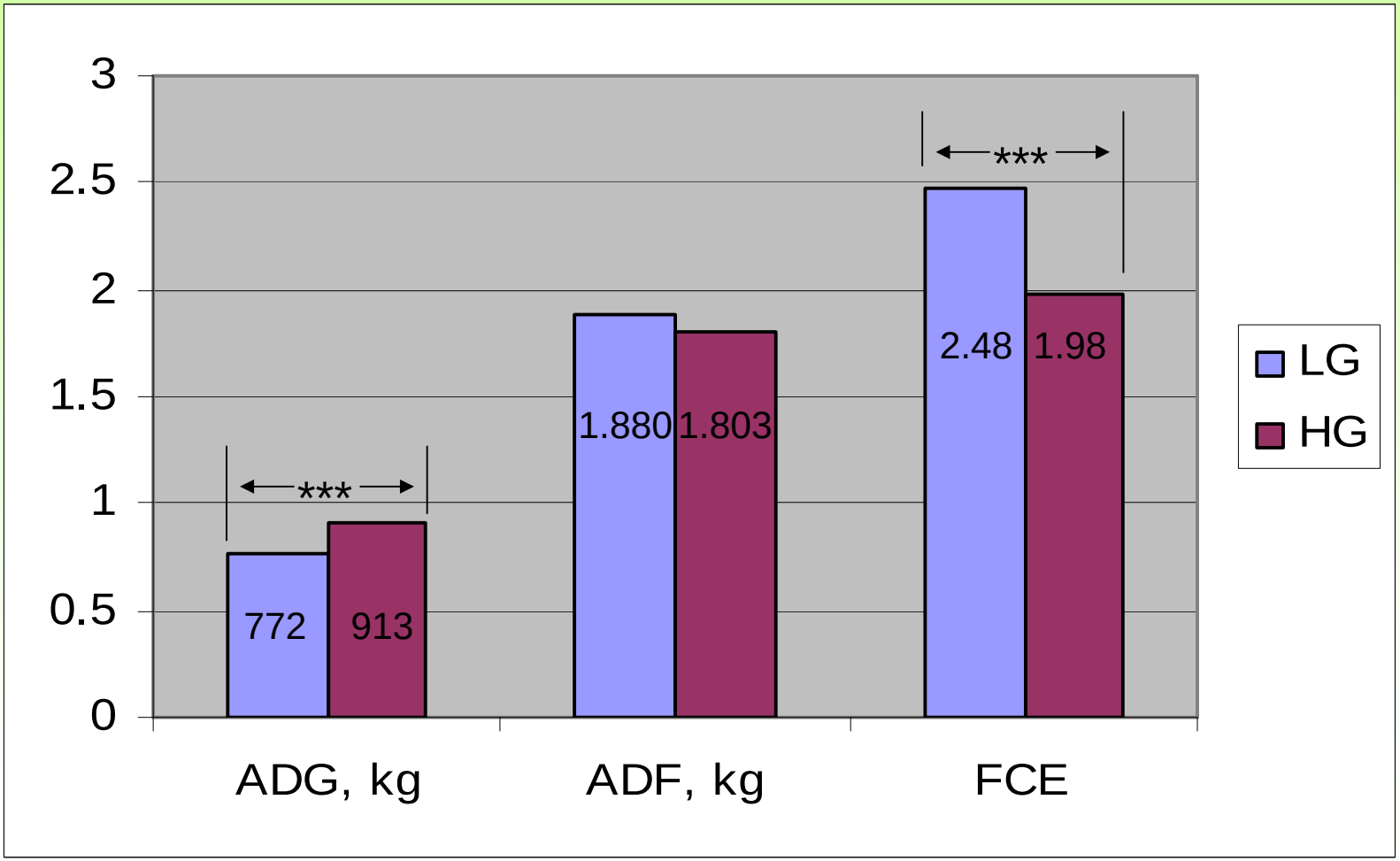
Results

No interactions between grower and finisher treatments

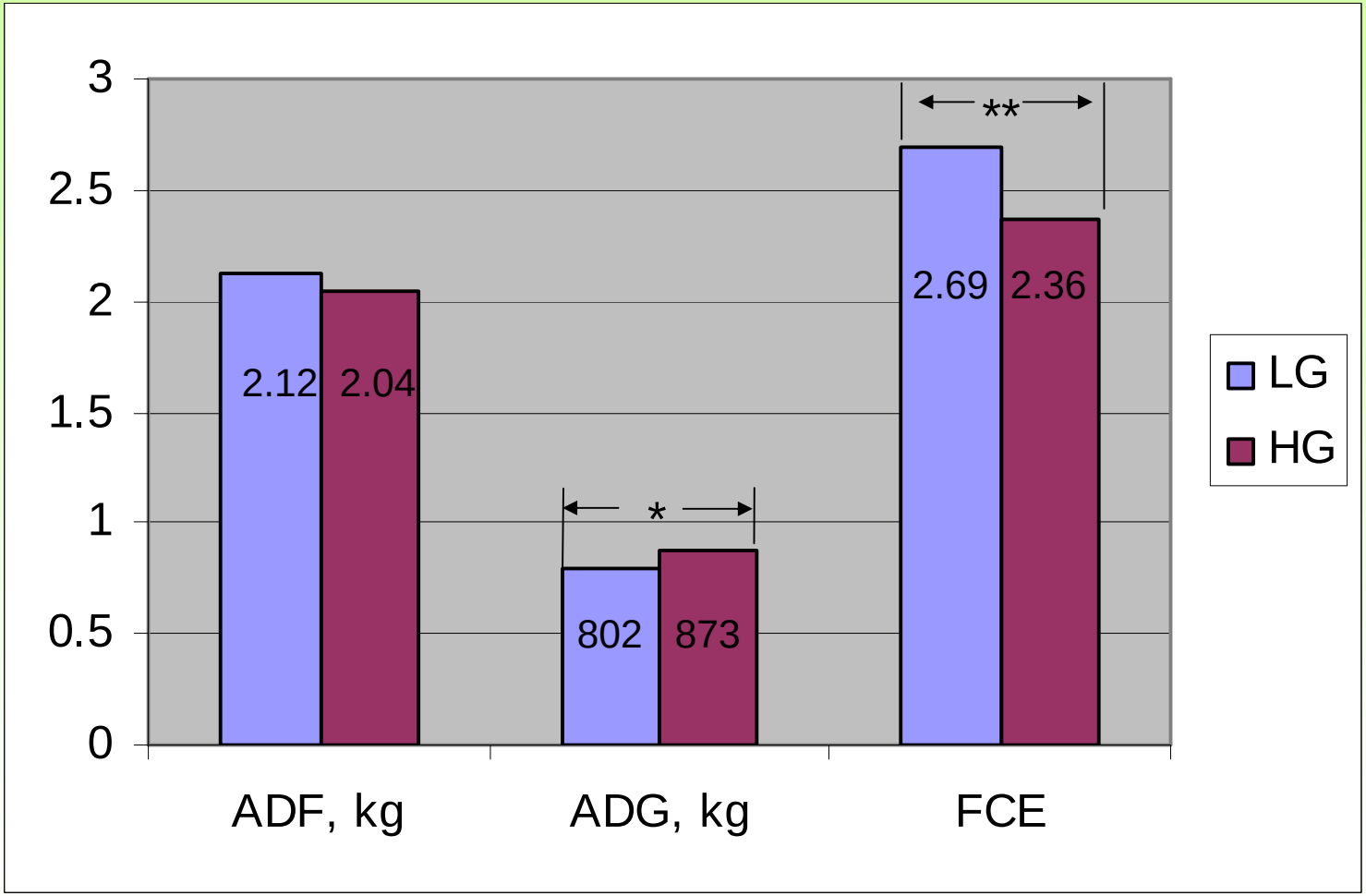
Effect of grower diet on pig weight



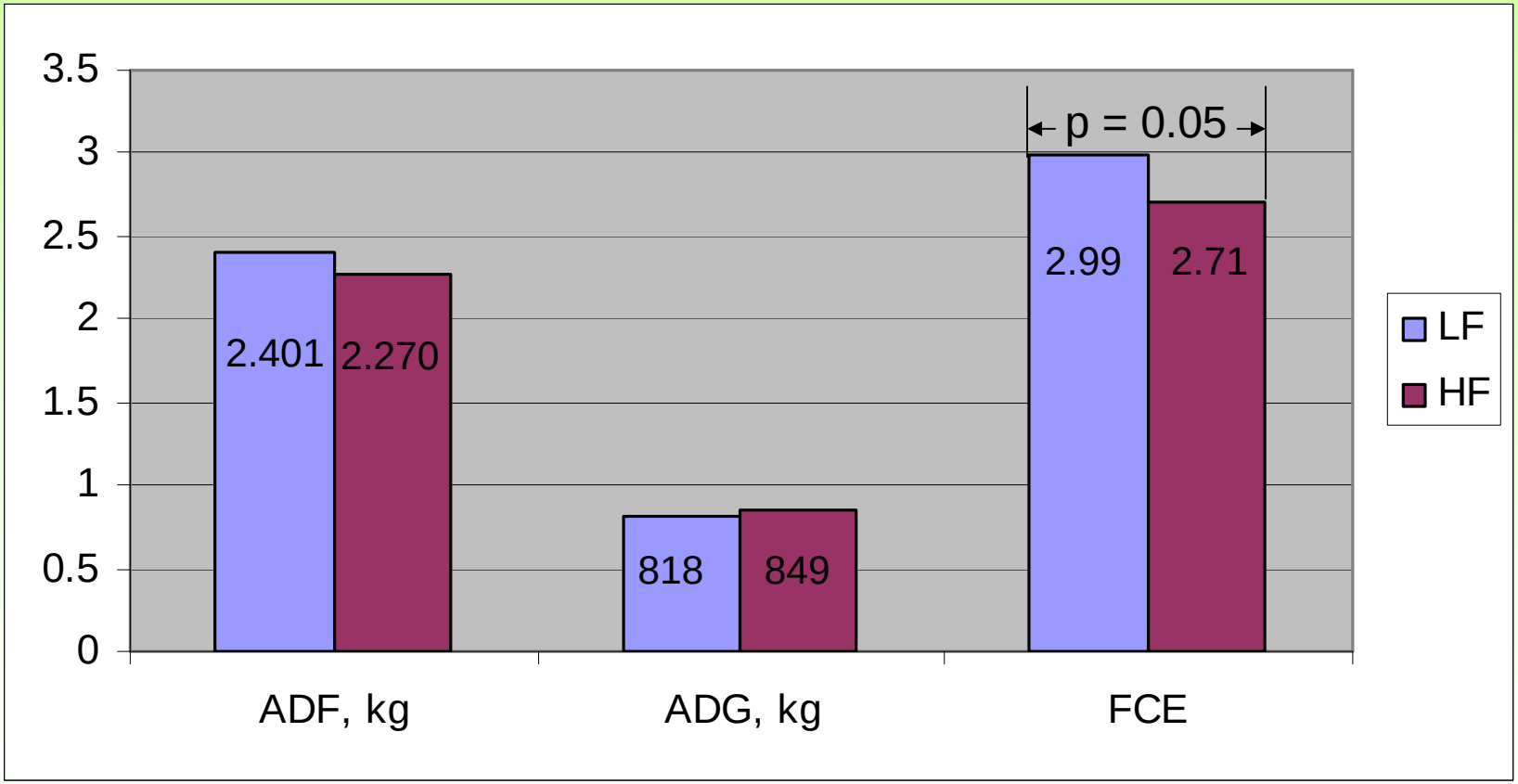
Effect of grower diet on performance to d35



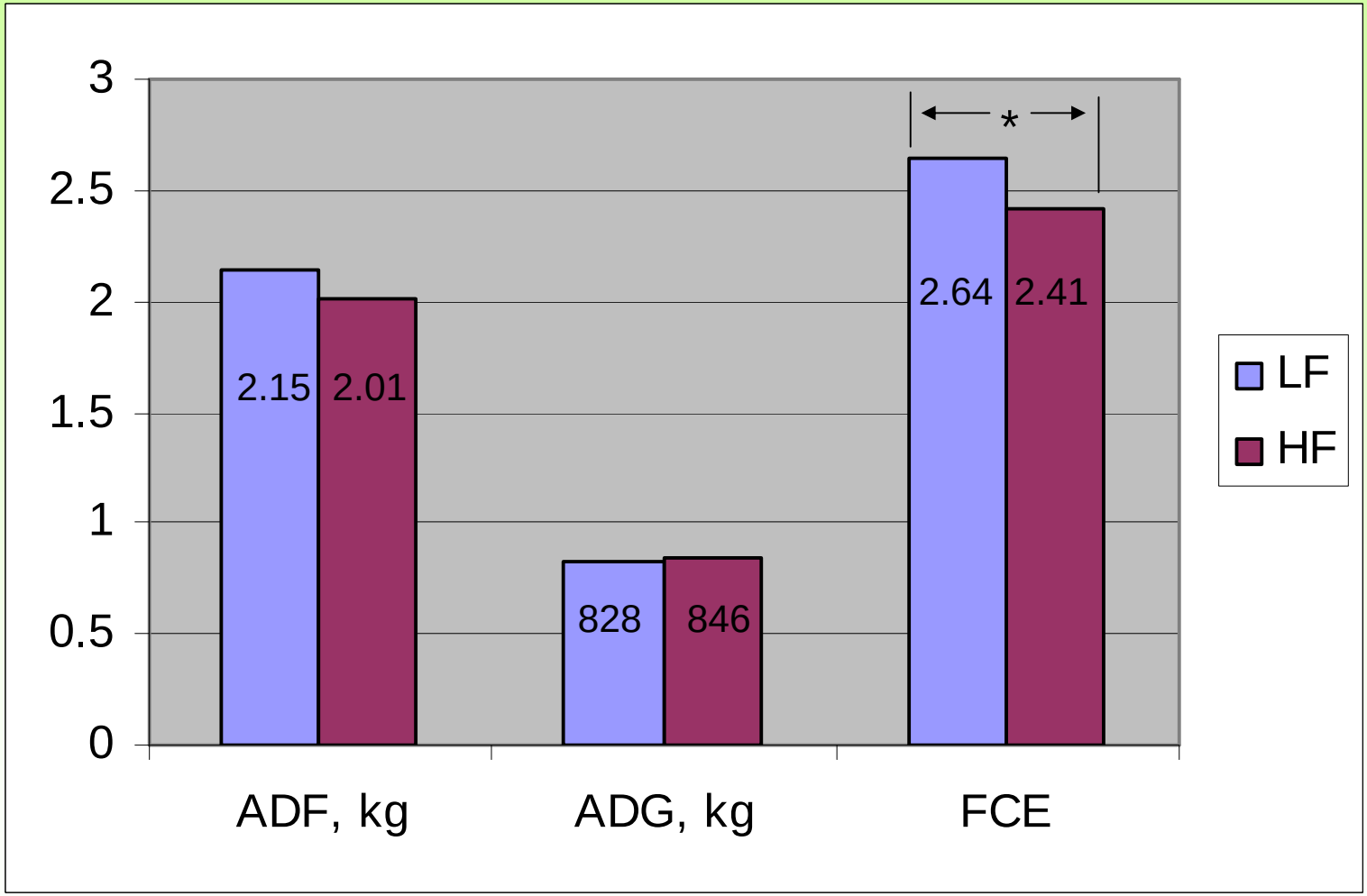
Overall – Main effect of grower diet



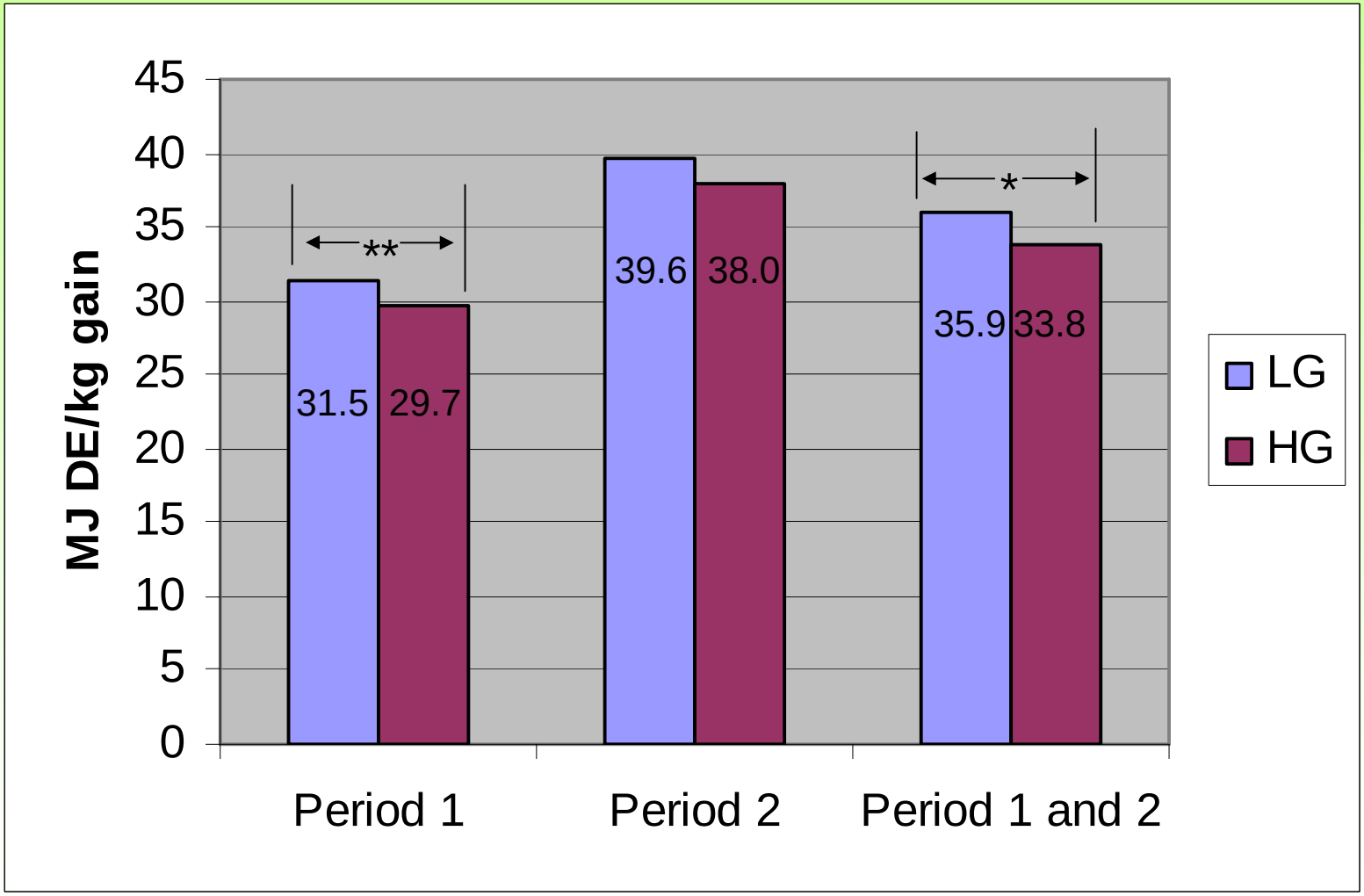
Effect of finisher diet on performance from d35 to slaughter



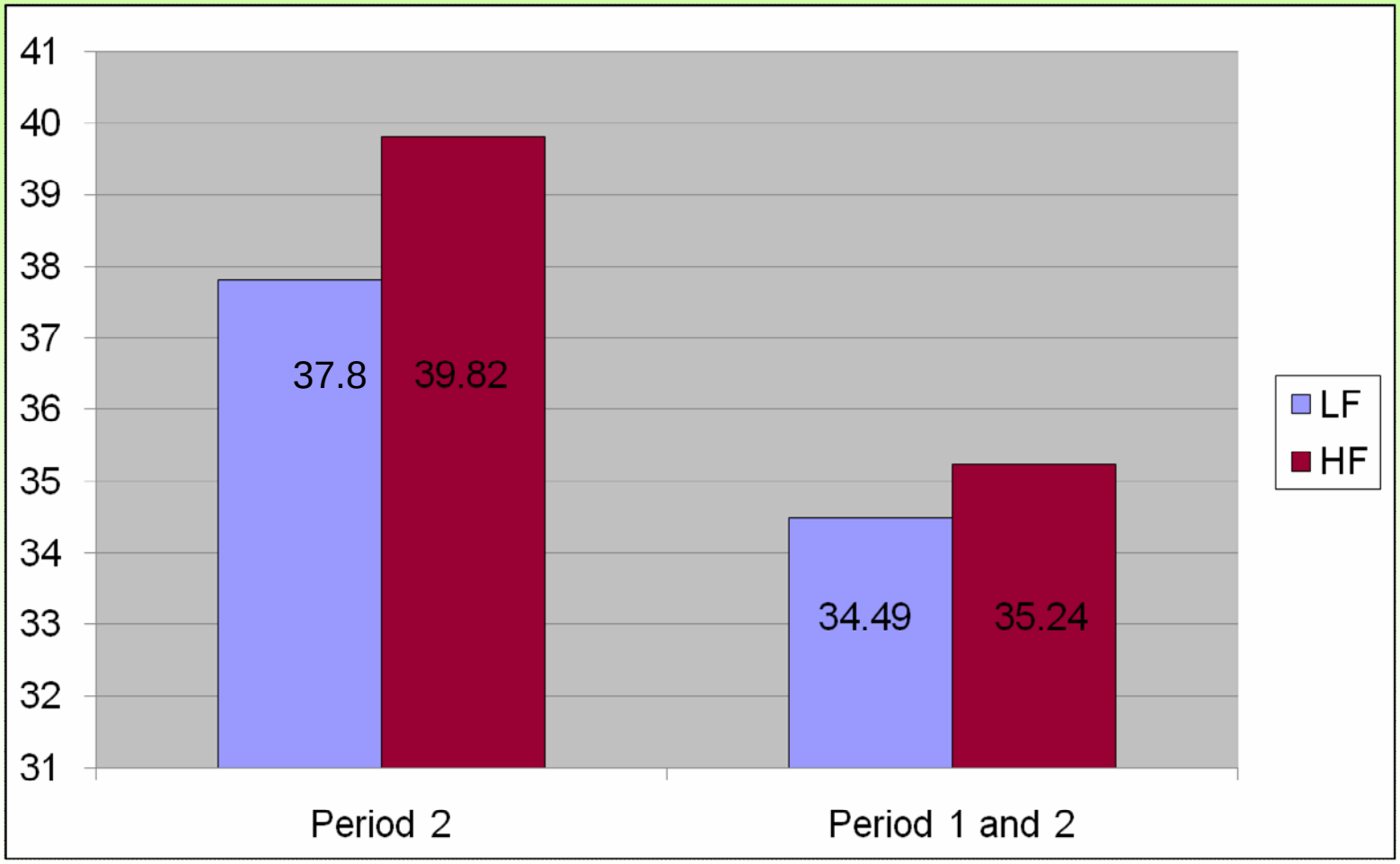
Overall – Main effect of finisher diet



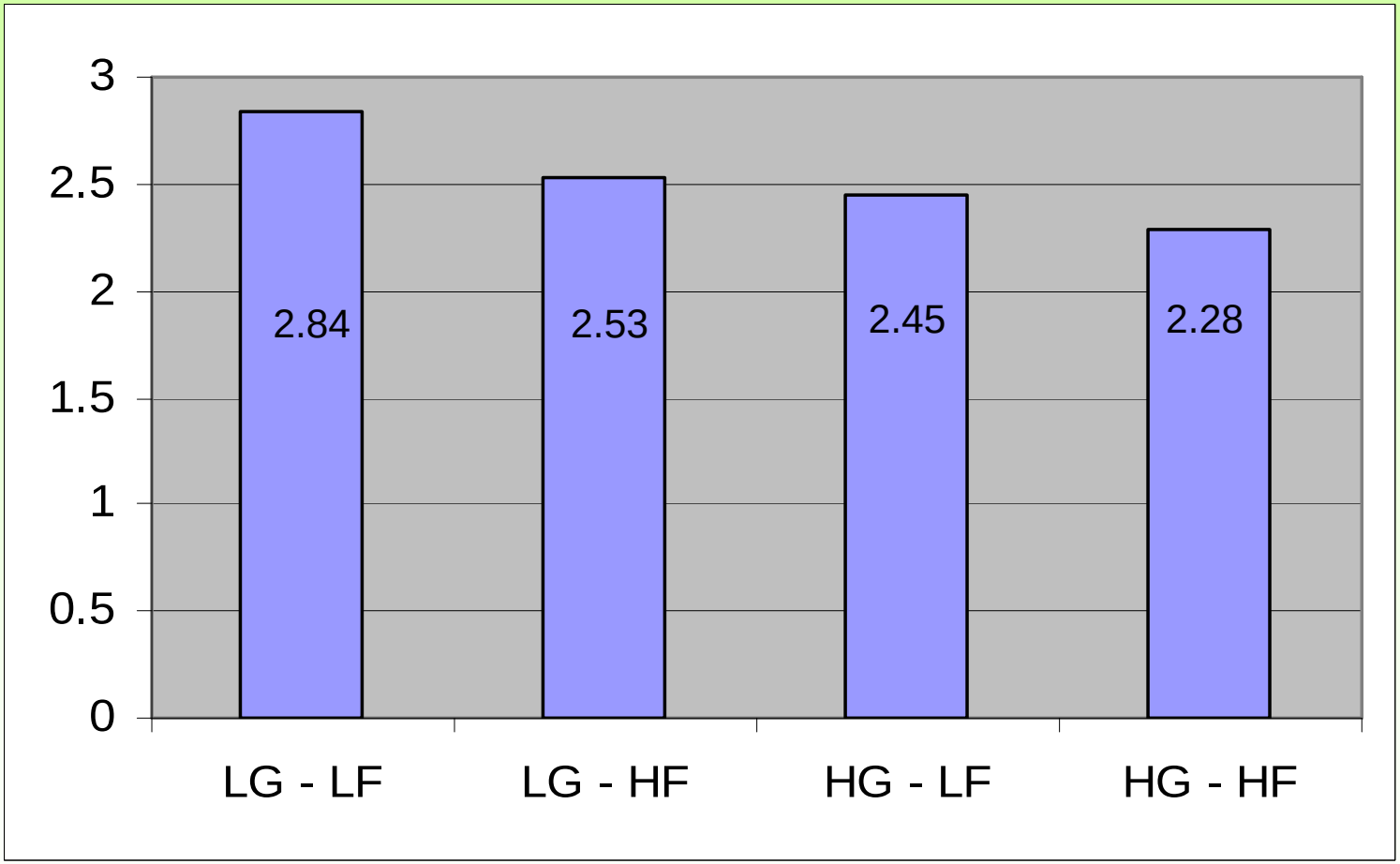
FCE in MJ DE/kg gain



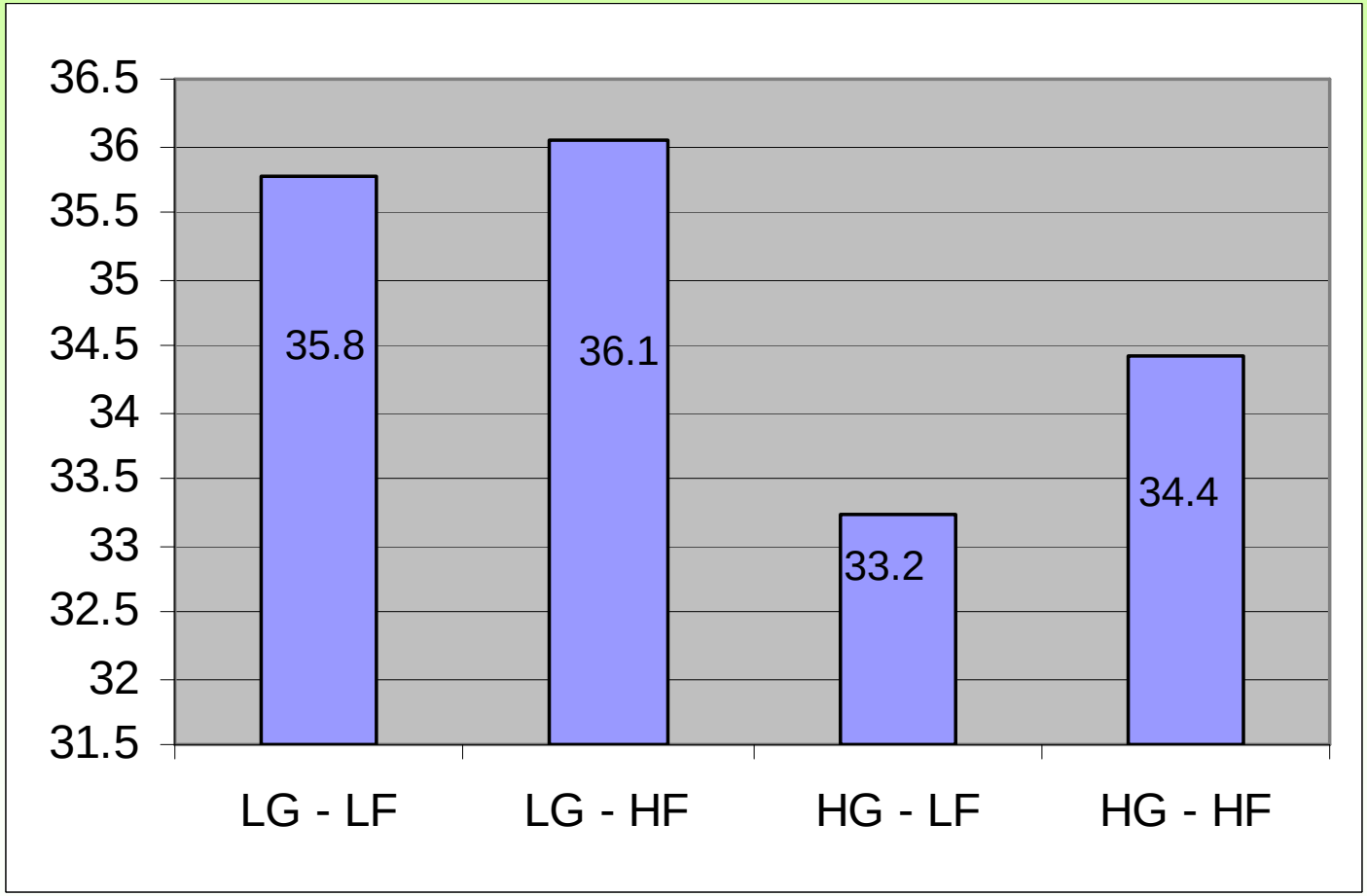
FCE in MJ DE/kg gain



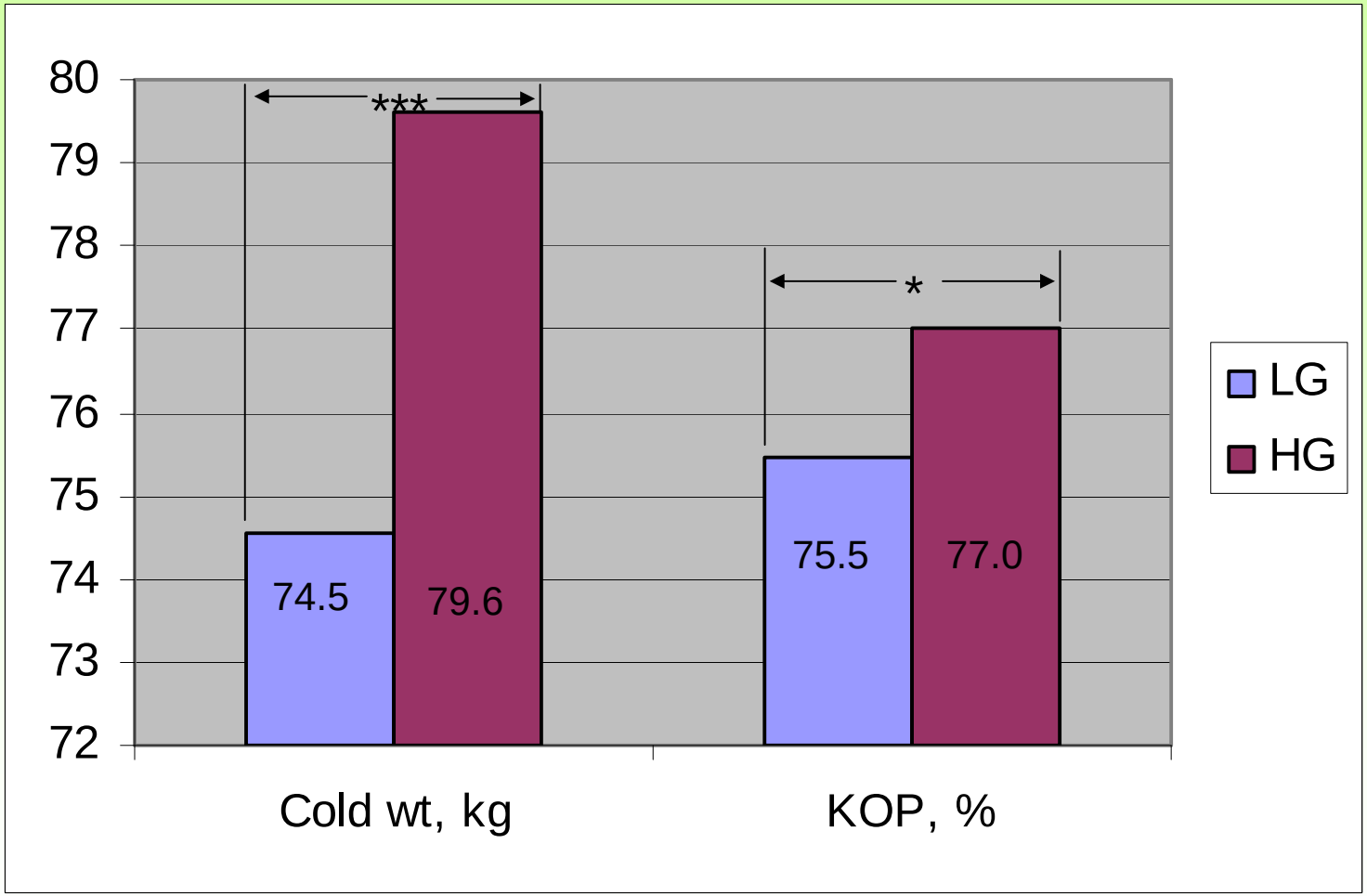
Overall FCE



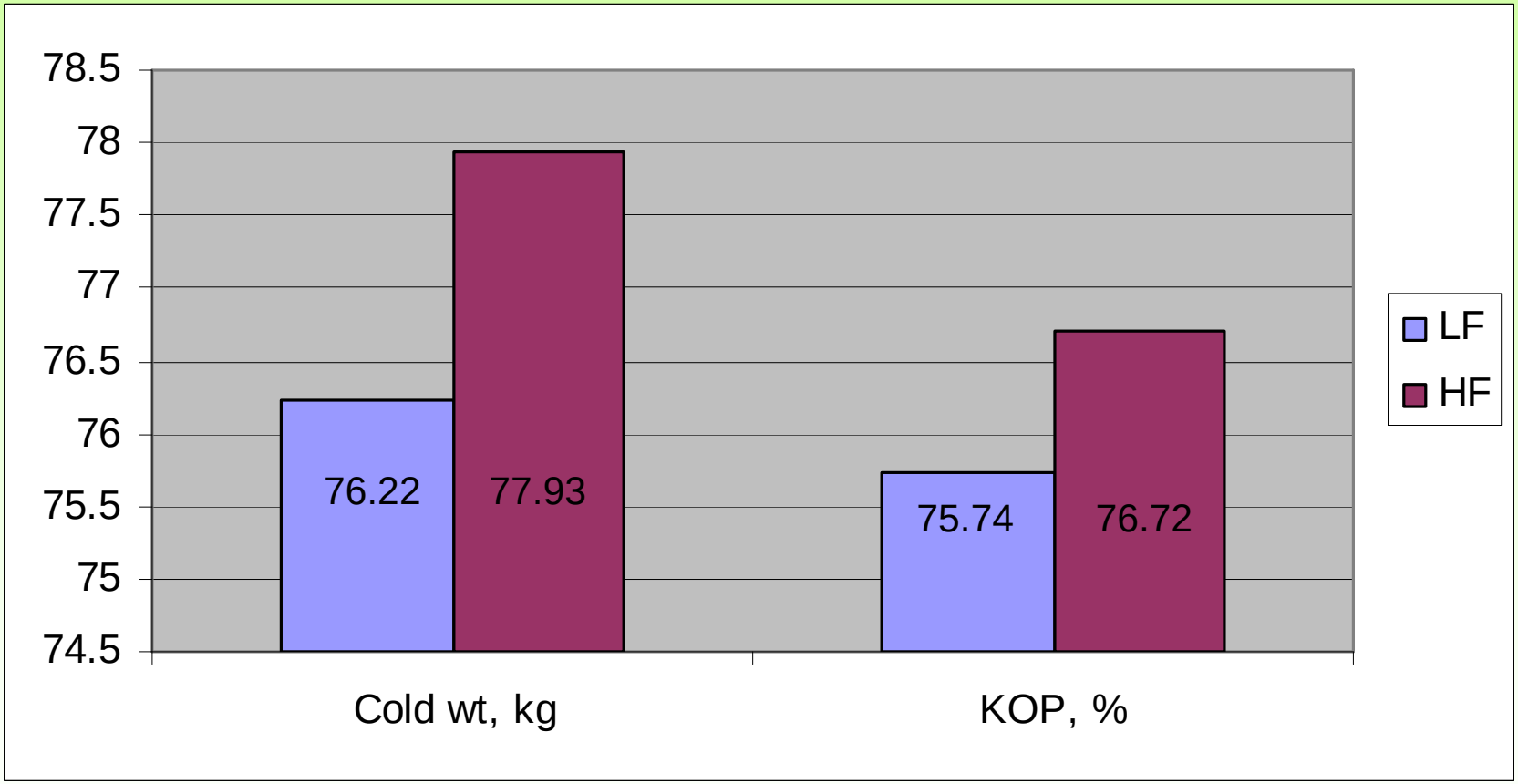
Overall FCE, MJ DE/ kg gain



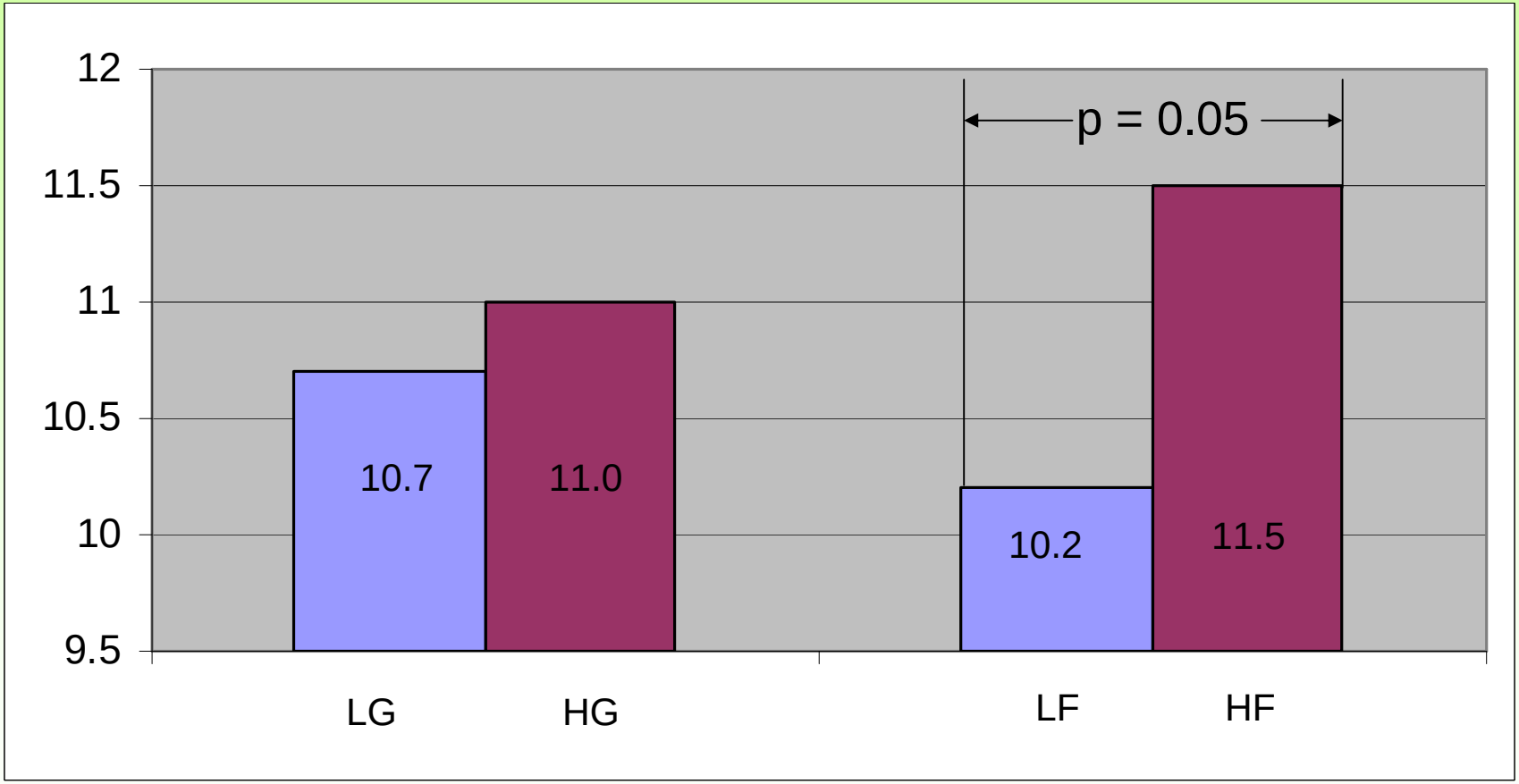
Slaughter data – Main effects of grower diet



Slaughter data – Main effects of finisher diet



Effect of treatments on back fat



Conclusions

- Pigs fed HG diet heavier at d35 and slaughter
- Pigs fed HG diet had higher ADG from d0-35 and a better FCE from d0-35 and for overall period
- Pigs fed HG diet had lower energy requirement from d0-35 and in the overall period
- Pigs fed HG diet had higher cold weight and KOP

Conclusions

- Pigs fed HF diet had a better FCE for overall period
- Pigs fed HF diet tended to be fatter
- No interactions between grower and finisher diets