



Effect of feed restriction during gestation on body weight and backfat depth in European-Chinese sows over two parities.

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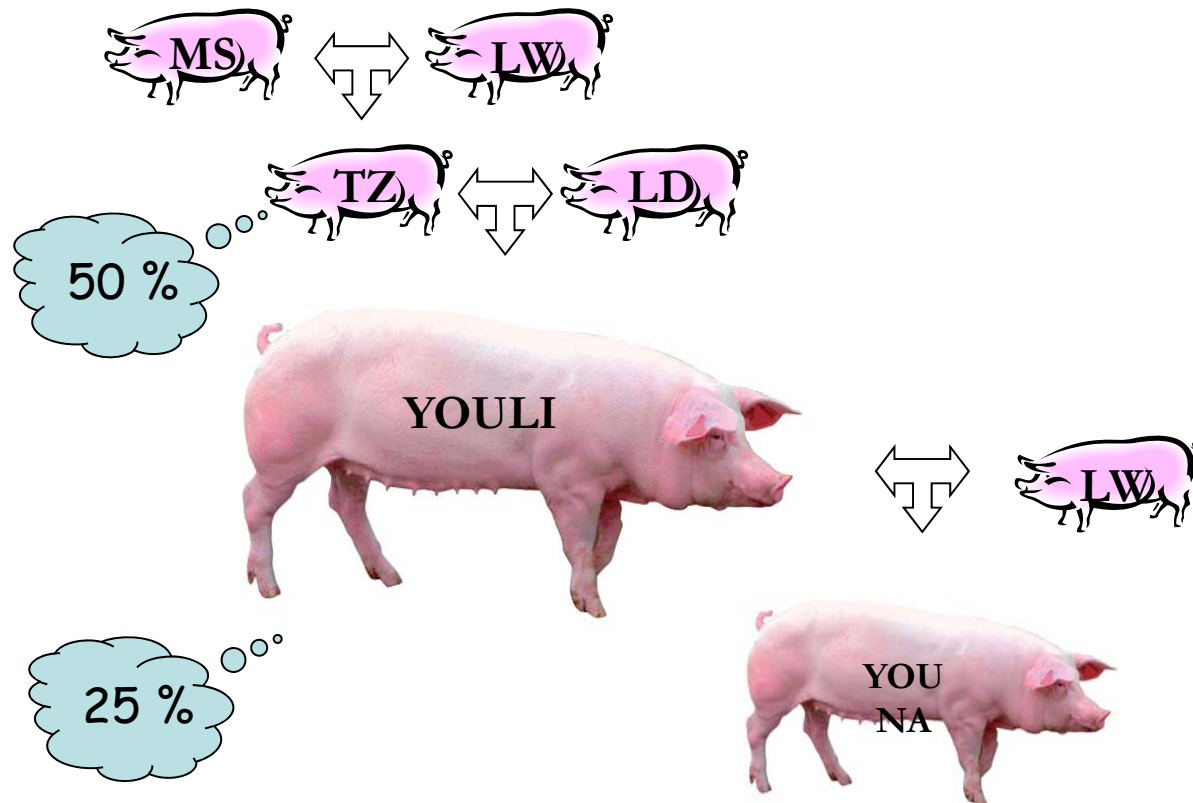
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INTRODUCTION



✓ Youli sows* comes from the Tai Zumu composite line.



*(Gene+)

INTRODUCTION



- ✓ Inclusion of Chinese breeds try to increase prolificacy of European breeds.
- ✓ This have an impact both in body composition and in the nutritional requirements of sows.
- ✓ During gestation sows are usually restricted, and that causes stress to them. Less restricted feeding programs could lead better sow behavior.
- ✓ However, this programs need to be economically feasible regarding the feeding cost and the productivity.

OBJECTIVE



- To evaluate the effect of the level of feed restriction during gestation on body weight, backfat depth and reproduction performance over two parities.



MATERIALS & METHODS



Experimental design

- ✓ Two treatments based on the feeding regime during gestation (liquid feeding) :

Treatment	Backfat Thickness	Feeding regimen (kg feed/d)		
		1-26 d gestation	27-89 d gestation	90 d to farrowing
Experimental sows (ES) *	-	2.83	2.83	2.83
Control sows (CS)	<26 mm	2.13	2.59	2.90
	>26 mm	2.13	2.29	2.59

*when a replicate consumed all feed for 1 week, increased feed supply by 10%

- ✓ All sows were fed *ad libitum* in lactation.
- ✓ 2 consecutive cycles.

MATERIALS & METHODS



Experimental diet

Raw materials, %	Gestation	Lactation
Barley and corn	27.82	51.12
Wheat bran	26.56	11.65
Protein meals	10.79	19.37
Beet pulp	17.46	4.65
Cane molasses	2.90	2.34
Lard and palm oil	5.02	5.94
Barley culms	5.81	0.53
Others	3.63	4.40
Calculated analysis¹		
Humidity, %	10.2	10.7
Ash, %	6.2	5.9
Net energy, kcal/kg	2,193	2,467
Dig. energy, kcal/kg	3,136	3,437
Dig. energy, MJ/kg	13.12	14.38
Crude protein, %	12.5	15.3
Ether extract, %	7.0	8.1
Crude fibre, %	9.7	5.6
Calcium, %	0.89	0.96
Av. Phosphorus, %	0.20	0.24
Av. Lysine, %	0.38	0.63
Av. Methionine, %	0.20	0.29
Av. Met + Cist, %	0.28	0.40
Av. Threonine, %	0.30	0.46

¹FEDNA, 2010.

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EAAP, 2011

MATERIALS & METHODS



Experimental animals

- ✓ A total of 80 Youli nulliparous, primiparous, and multiparous sows (Gene+ Ibérica).
- ✓ All sows were distributed in four batches regarding treatments, body weight, and backfat thickness.

Experimental facilities

- ✓ Gestation: Groups of 5 ♀ - boxes
 - ✓ 18,3 m² (4.55 x 4.05 m²).
- ✓ Lactation: Individual box
 - ✓ 4,30 m² (2.55 x 1.69 m²)
 - ✓ Farrowing crates of 2.10 x 0.60 m².

MATERIALS & METHODS



Controls

- ✓ Over two parities, measures:
 - ✓ Body weight and backfat thickness at:
 - ✓ Insemination, 7 d pre-farrowing, and weaning.



- ✓ Feed intake (group/sow).

MATERIALS & METHODS



Controls

- ✓ Over two parities, measures:
 - ✓ Pigs at farrowing
 - ✓ Total, alive, dead, mummified
 - ✓ Weaned piglets
 - ✓ Litter weight at farrowing
 - ✓ Litter weight at weaning

MATERIALS & METHODS



Statistical analyses

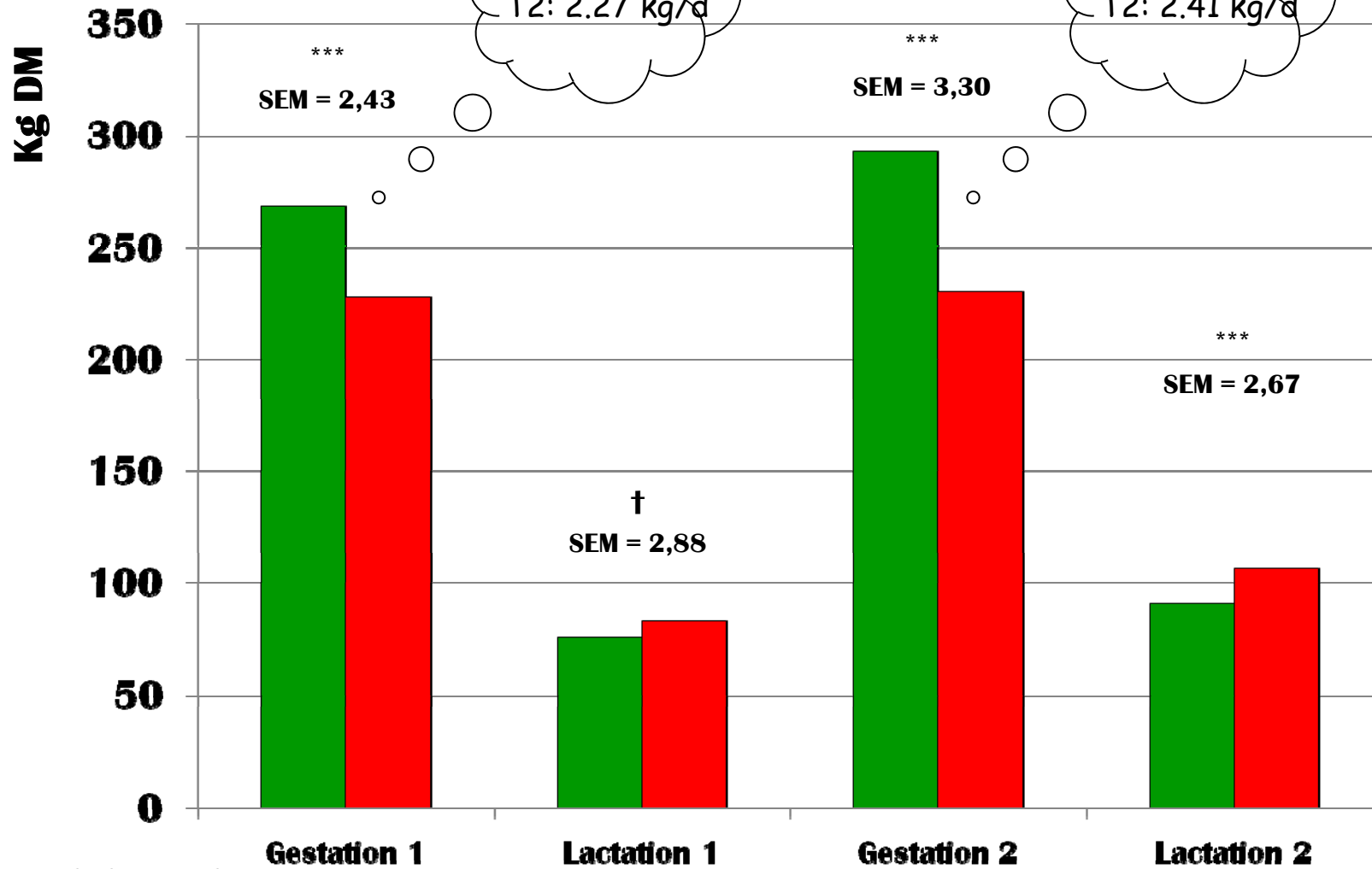
- ✓ GLM procedure
- ✓ Model:
 - ✓ Feeding regimen,
 - ✓ Batch, and initial parity number as main effects.
- ✓ Data are presented as least square means.



RESULTS:



Feed intake



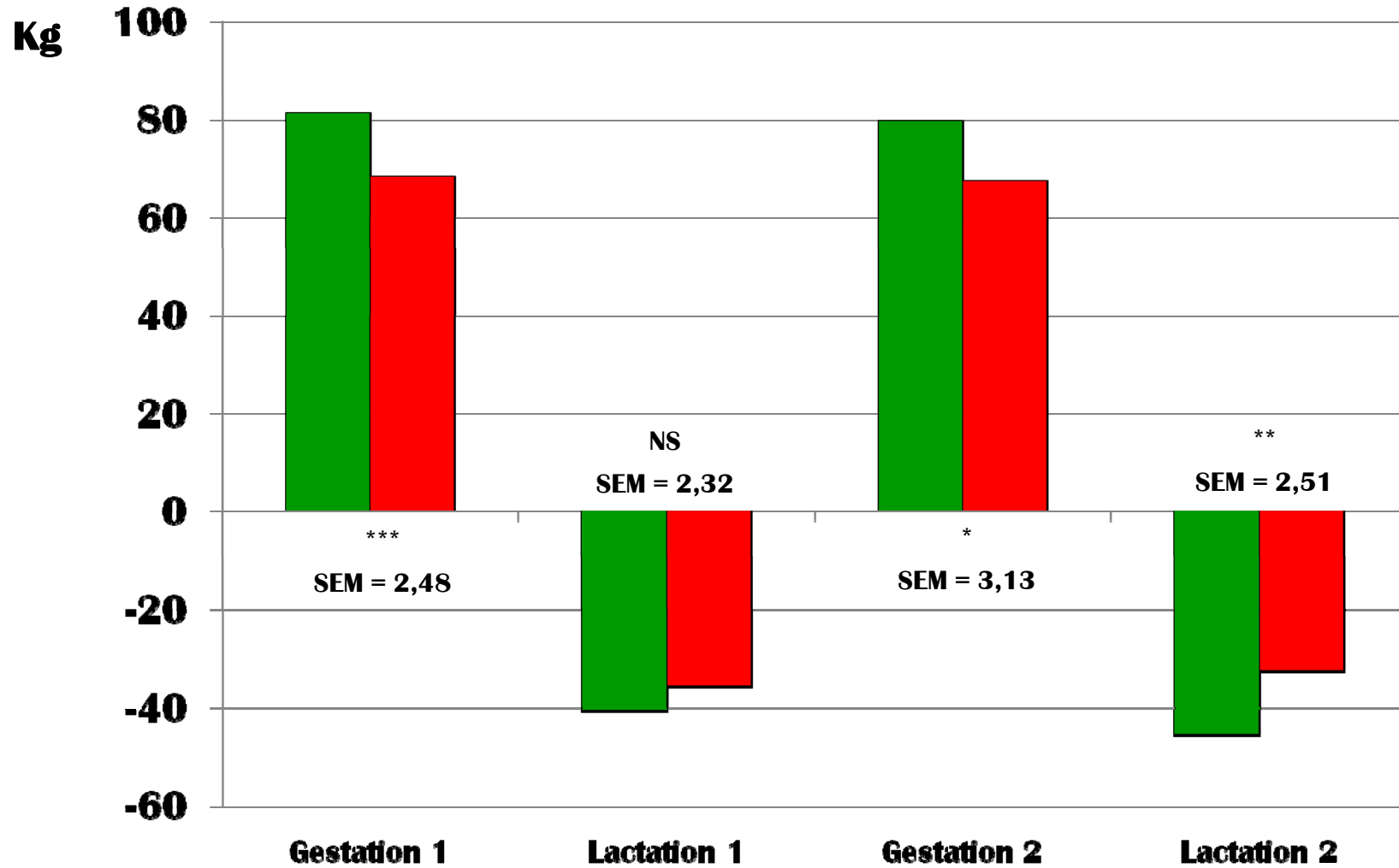
SEM = Standard error of the mean.
 † P<0,10; * P<0,05; ** P<0,01; *** P<0,001. NS=No significance

■ Experimental ■ Control

RESULTS:



Increase body weight



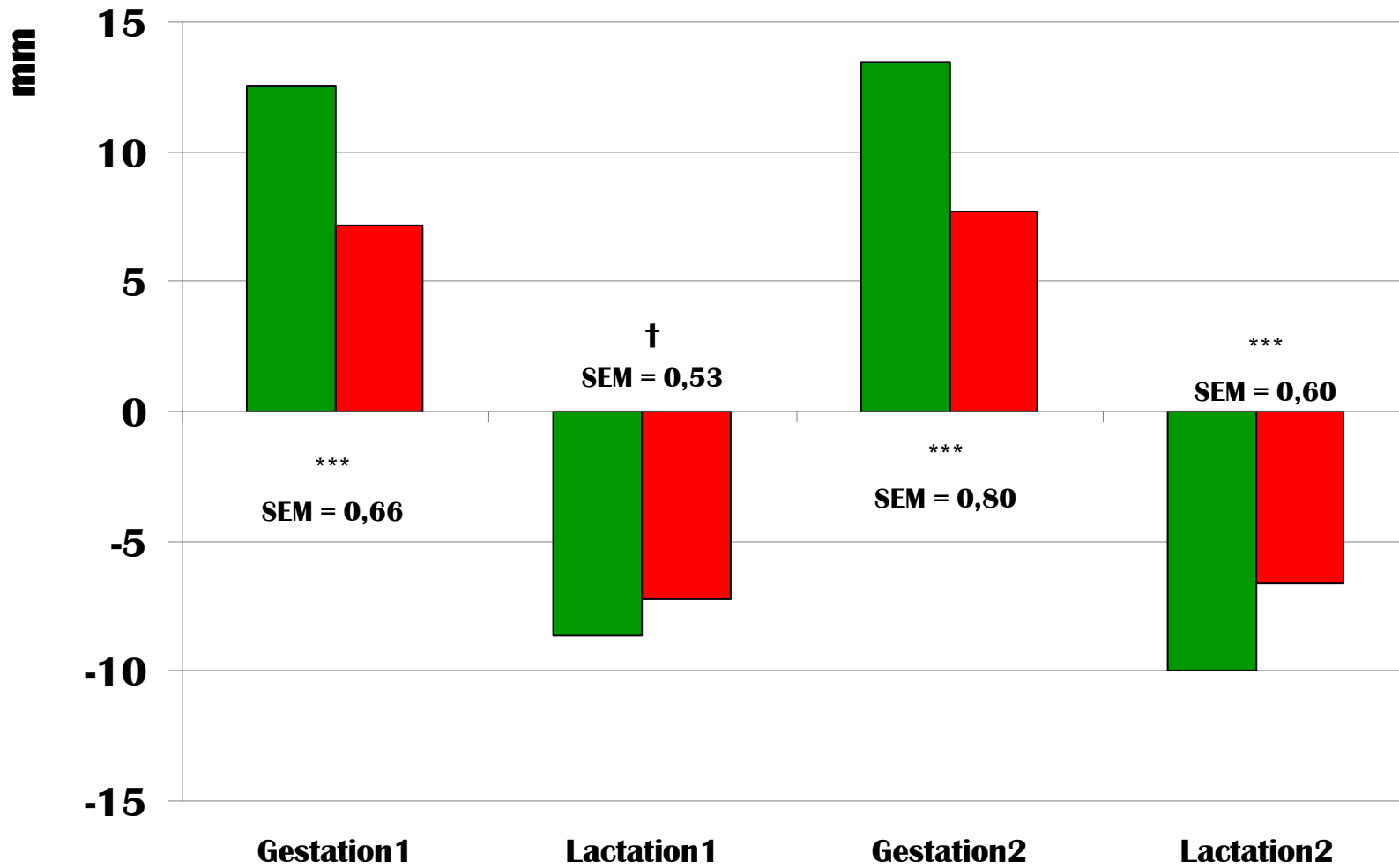
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RESULTS:



Increase backfat thickness



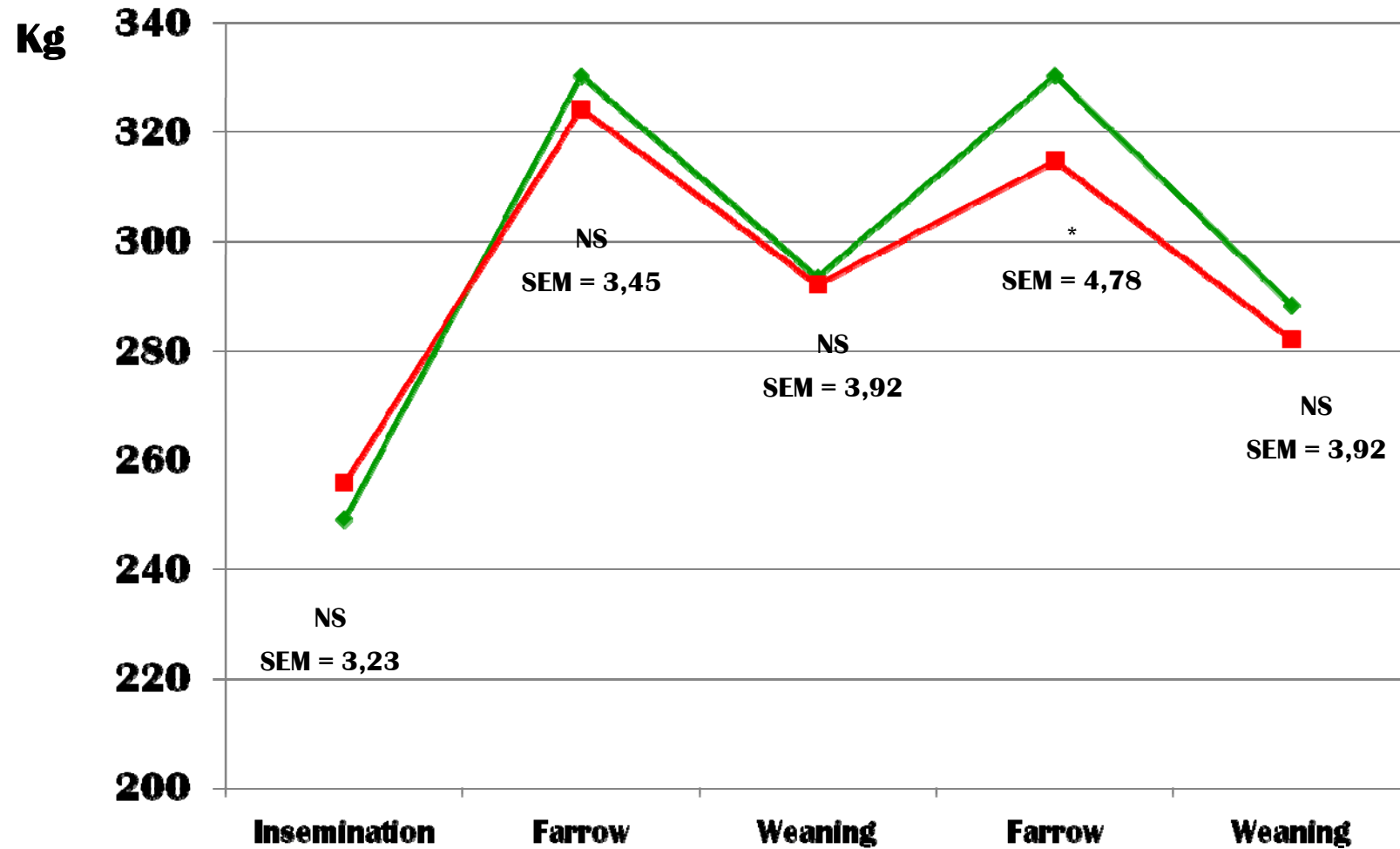
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RESULTS:



Body weight



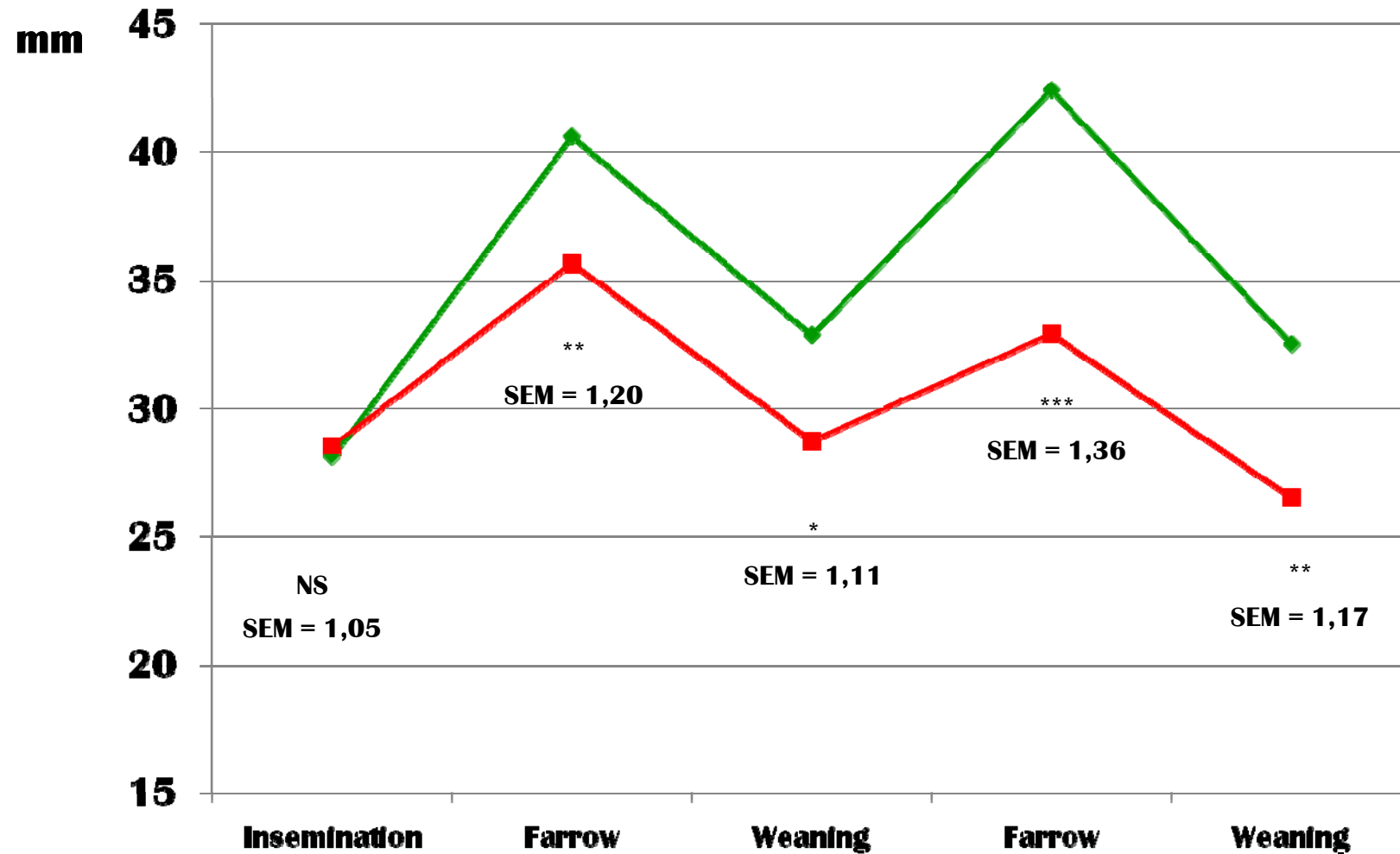
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■ Experimental ■ Control

RESULTS:



Backfat thickness



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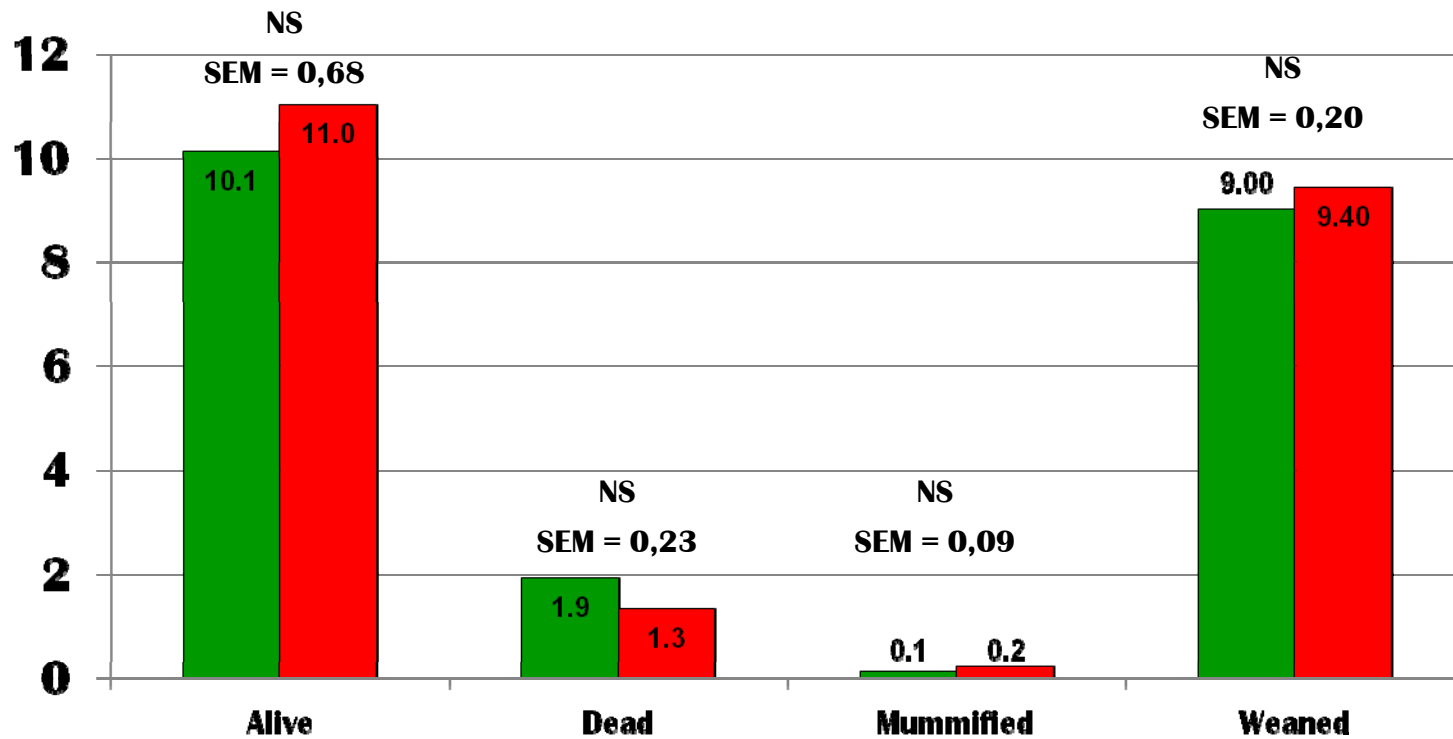


RESULTS:



Productivity, cycle 1

No. piglets born



SEM = Standard error of the mean.
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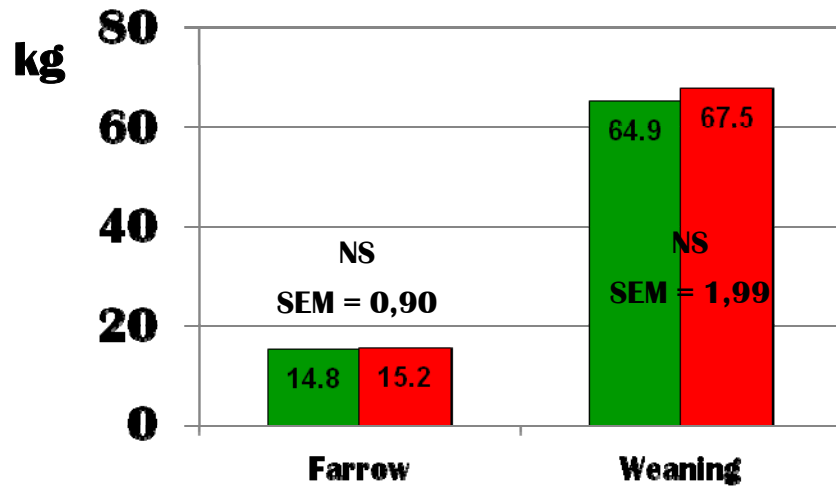


RESULTS:

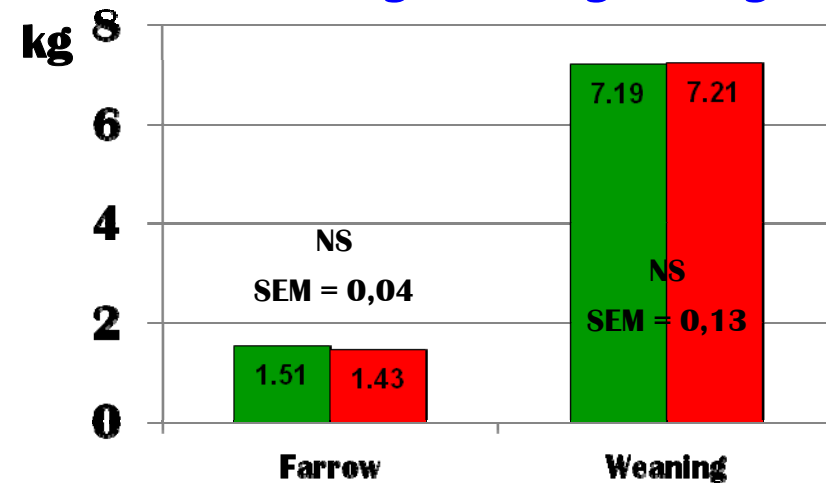


Productivity, cycle 1

Litter weight, kg



Piglet weight, kg



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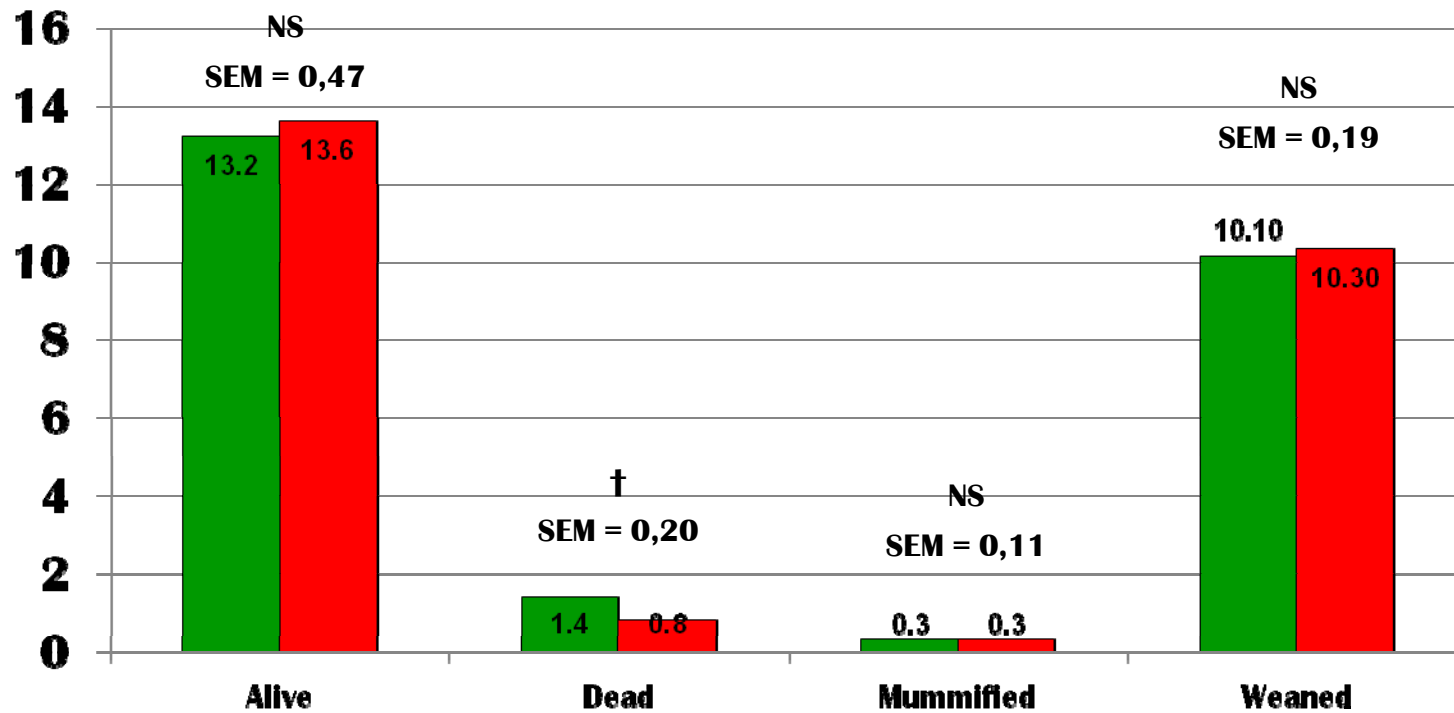


RESULTS:



Productivity, cycle 2

No. piglets born



SEM = Standard error of the mean.
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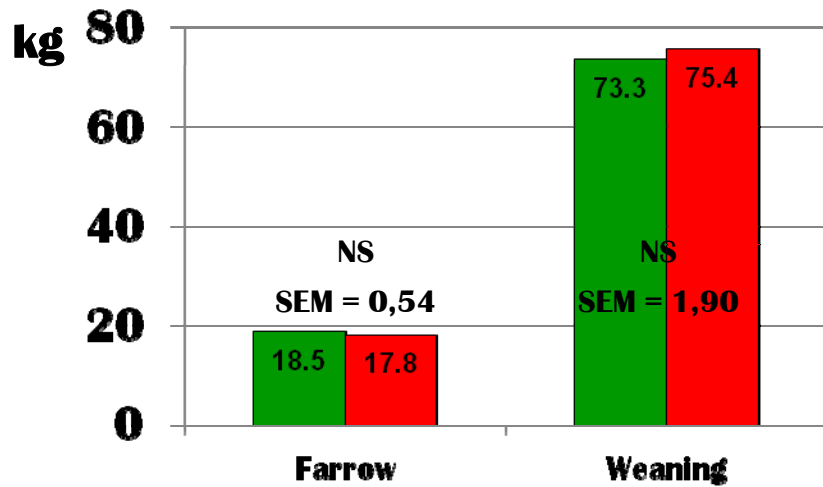


RESULTS:

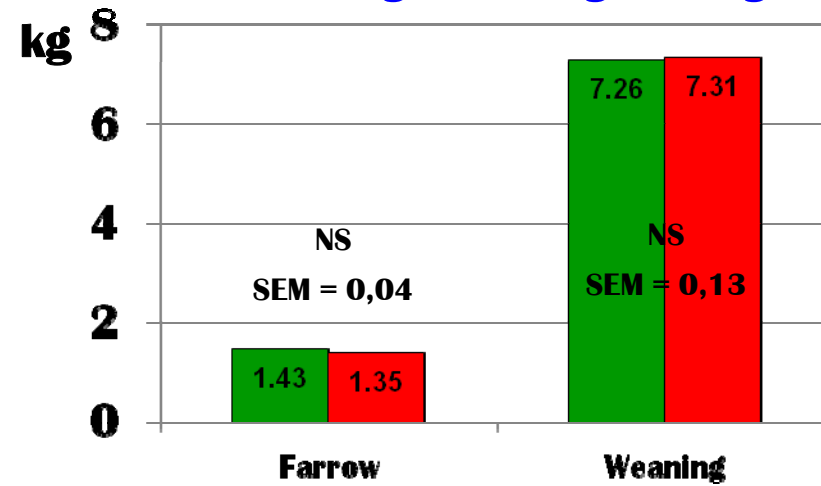


Productivity, cycle 2

Litter weight, kg



Piglet weight, kg



SEM = Standard error of the mean.
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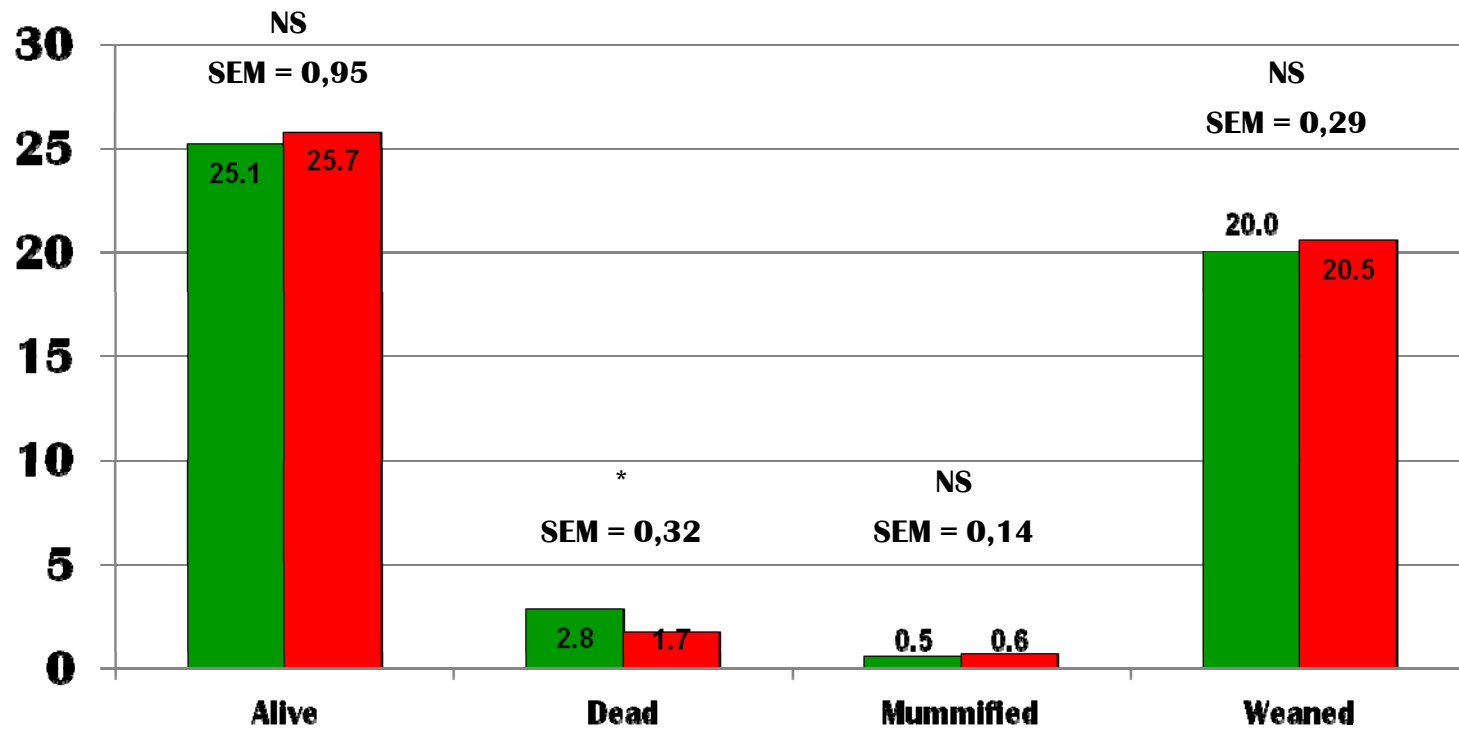


RESULTS:



Productivity, 2 cycles

No. piglets born



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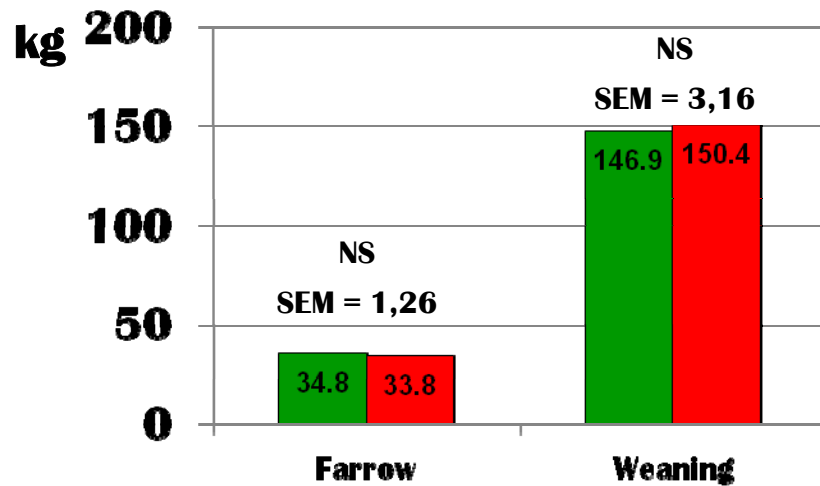


RESULTS:

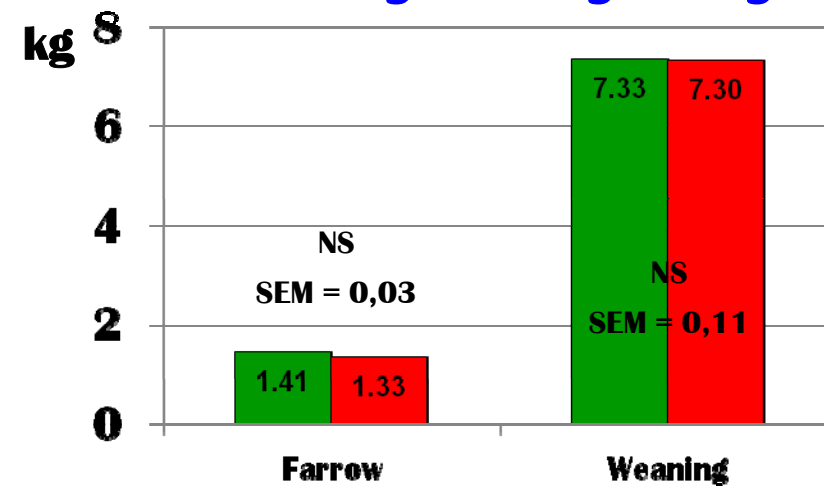


Productivity, 2 cycles

Litter weight, kg



Piglet weight, kg



SEM = Standard error of the mean.
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CONCLUSIONS



- Feed restriction stabilizes the body condition of sows:
 - Less consumption and increase of BW and BT during gestation but...
 - More consumption and less decrease of BW and BT during lactation.
- Different feeding regime change the body composition in some extent
- The increase of feeding regime in this line had not beneficial effects different to theoretical better behavior



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MESSAGE TO TAKE HOME



- It is possible to increase the feeding regime to increase the behavior, but it has not additional supplemental benefits and increases feed cost and leads fatter sows.