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Feeding replacement gilts as finishers or less?

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Some 50% of sows replaced yearly

- Need to improve longevity
- Feeding during rearing a useful tool?

Current recommendation Sweden

- Feed 10% less than finishers, use a sow diet
- 
- Service at 2nd – 3rd oestrus
 - Age 230 days, weight 140 kg, backfat 12-13 mm

Hypothesis

- Gilts fed according to recommendations will reach the goal (weight, backfat and age), and have better legs and early reproduction than gilts fed more energy and/or lysine



Material and methods

- 2 * 2 factorial = 4 treatments
- Factors
 - Energy allowance (High, finisher allowance or Low, 90% of High)
 - Feed lysine level (High, 0.83 or Low, 0.57 g sid lysine/MJ NE)
- In total 80 L*Y gilts from 30 kg (age 9-10 weeks) to service
- Housed 10 gilts/pen, split-litter and "individual" feeding
- 4 batches (2 born June 2012, 2 born Dec/Jan 2012/13)
- Gilts served on 2nd oestrus

Gilts housed in pens on deep straw bedding





**Individual feeding stalls,
management by bucket.
Gilts had to be trained ...**



Material and methods

- **Recordings (all)**
 - Feed consumption
 - Live weight
 - Ultrasonic backfat
 - Leg conformation scores
 - Age at 1st oestrus
- **In 40 gilts slaughtered >30 d pregnant:**
 - Numbers ova shed (corpora lutea)
 - Numbers fetuses
 - Osteochondrosis scores of elbow joints

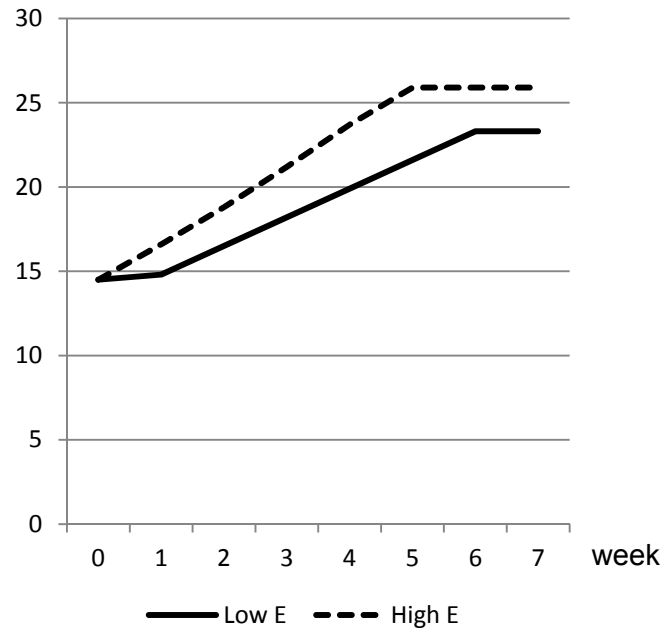


Diets

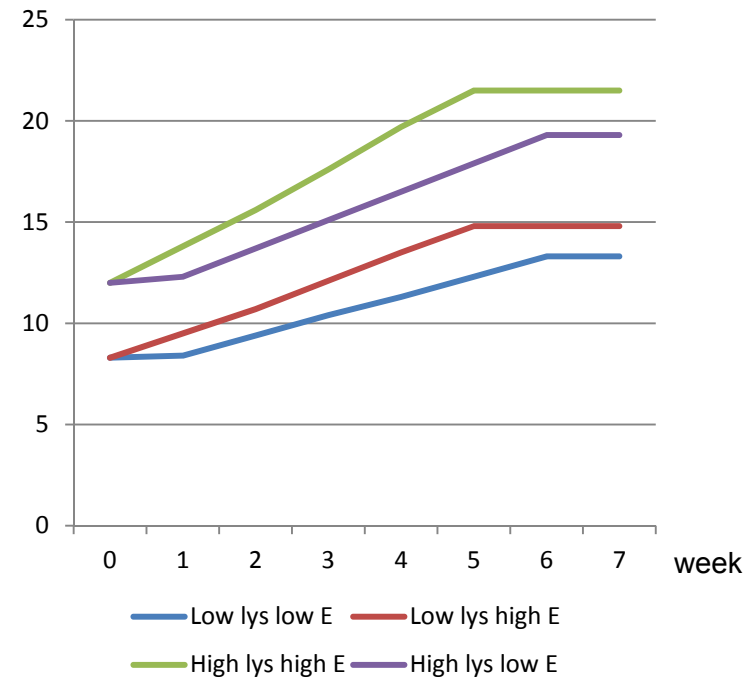
	High lysine (finisher diet)	Low lysine (sow diet)
Calculated, per kg diet		
Crude protein, g	138 (analysed 143)	130 (analysed 134)
Crude fat, g	2.6	2.4
SID lysine, g	7.7 (analysed total lys 9.4)	5.4 (analysed total lys 6.6)
Ca, g	7.1	7.1
Available P, g	2.8	2.8
NE, MJ	9.3	9.4

Energy and lysine allowances

Energy, MJ NE daily

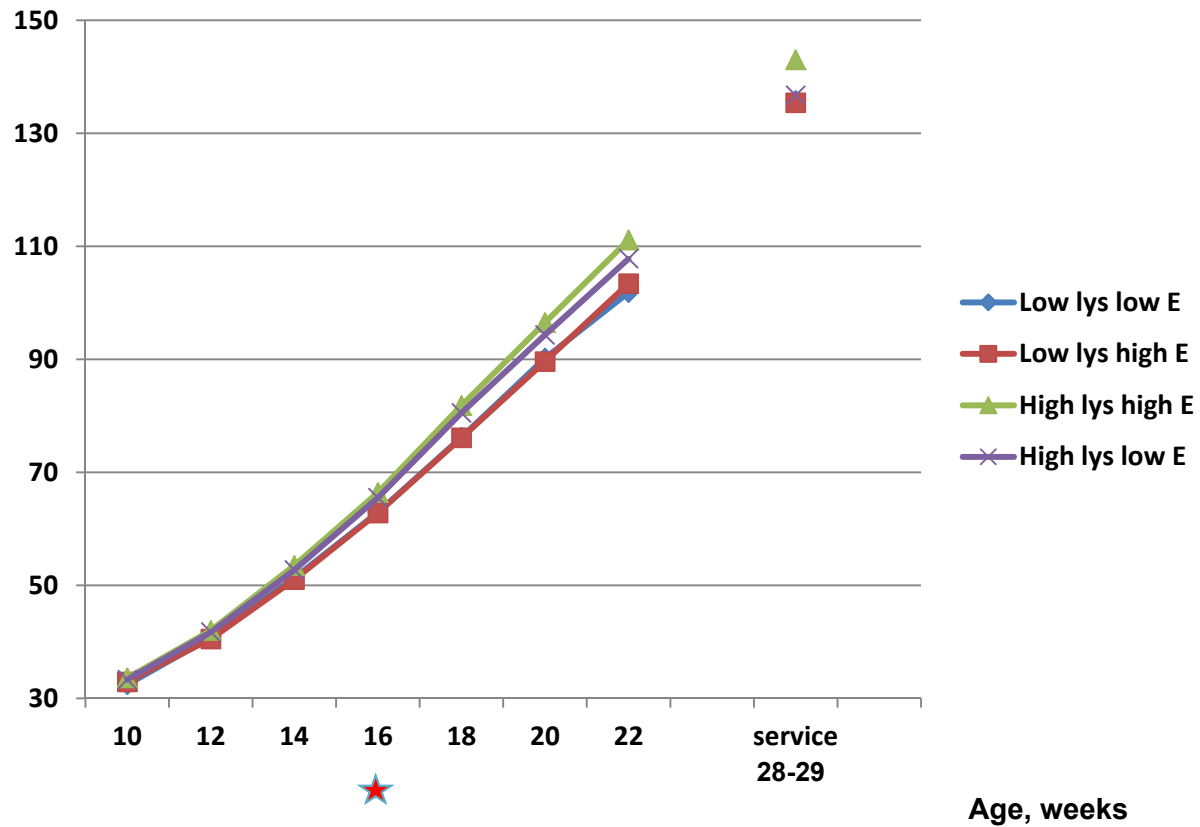


Lysine, g sid daily



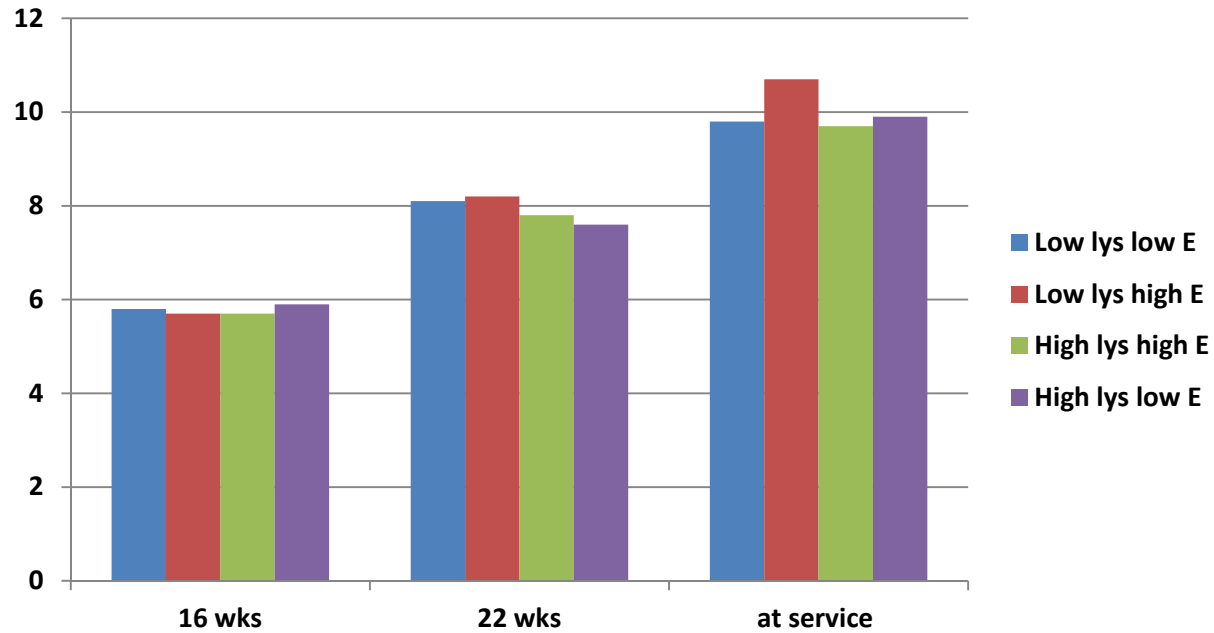
Results: Live weights

Live weight, kg



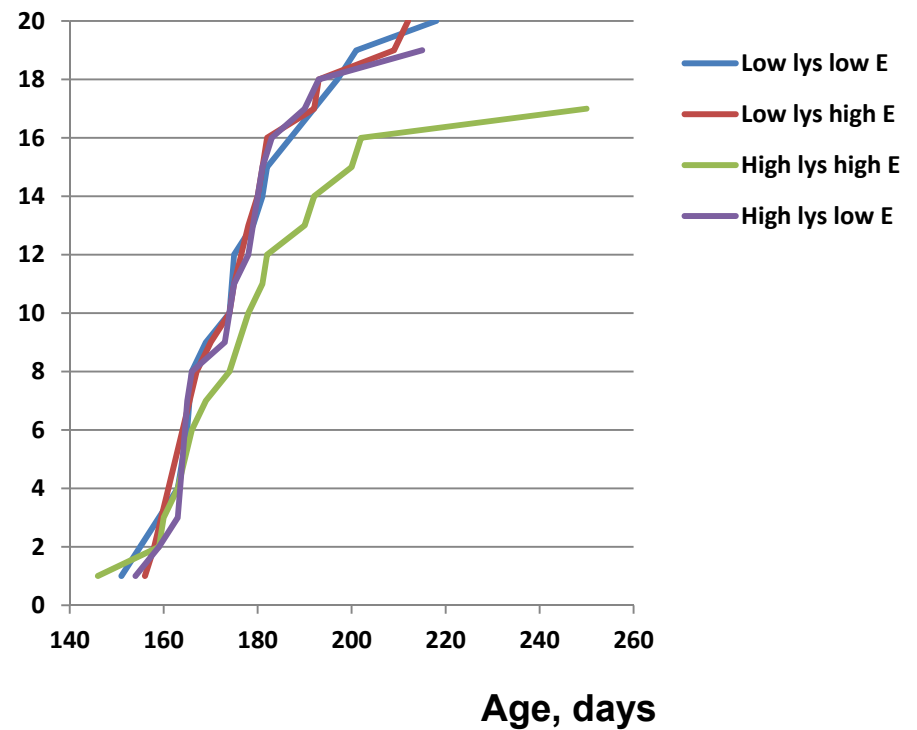
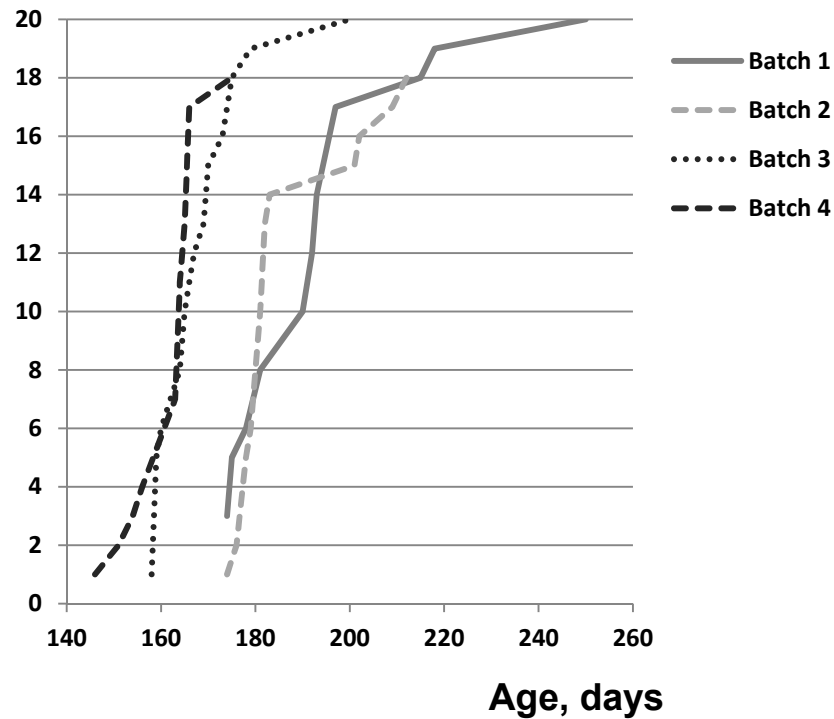
Results: Ultrasonic backfat

Ultrasonic backfat, mm



Results: Age at 1st oestrus

Accumulated number of gilts in oestrus

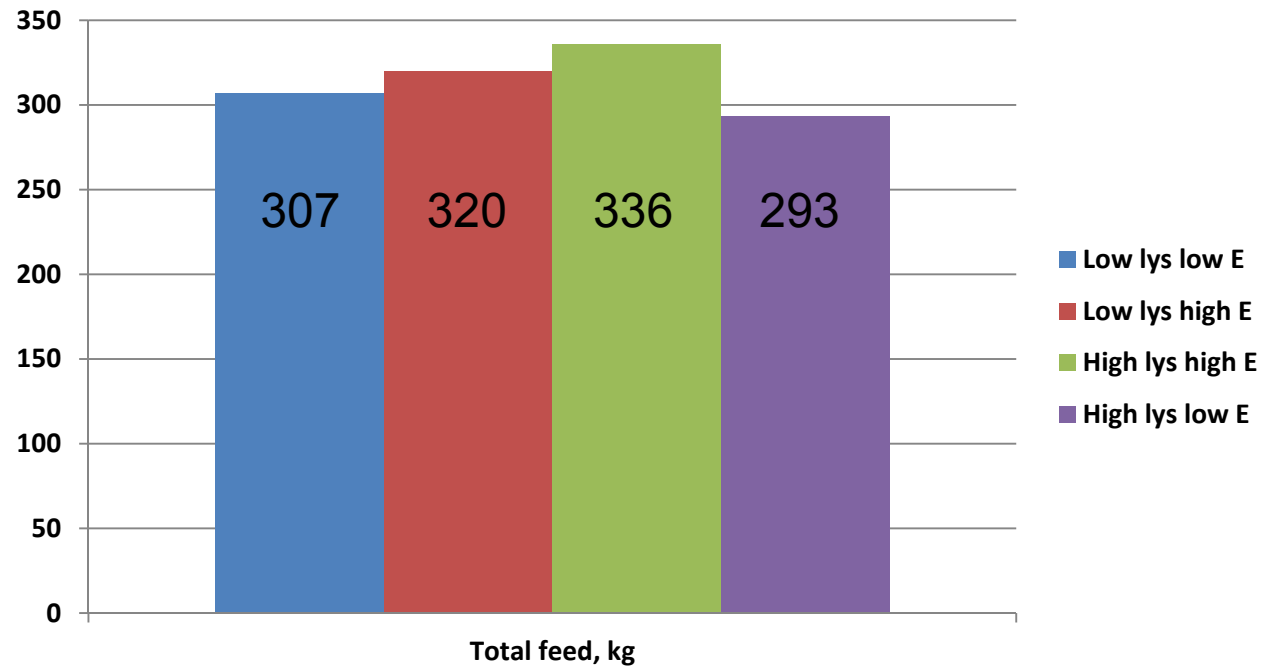




Results: Reproduction

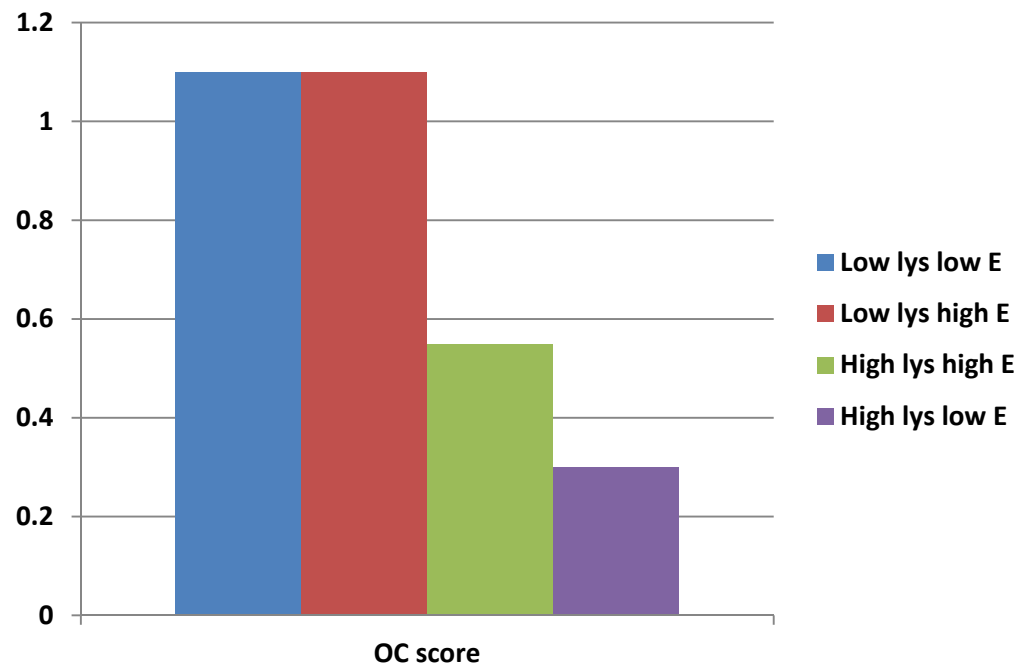
	Low lys low E	Low lys high E	High lys high E	High lys low E
Age 1st oestrus	177	176	178	175
# not showing oestrus	0	0	2	1
# not served	1	1	3	1
# repeat	1	2	2	2
Age 1st service	198	198	200	196

Results: Feed consumption, 30 kg - service



Gilts slaughtered > 30 d pregnant

- No difference in # corpora lutea, # fetuses
- Osteochondrosis scores higher in low lysine gilts





Fate of gilts after the experiment

	Low lys low E	Low lys high E	High lys high E	High lys low E
Still alive (March -14)	5	5	6	5
Culled: Not pregnant	1	4	0	2
Culled: Thin, shoulder sores	1	0	1	1
Culled: Legs	1	1	1	0

Summary

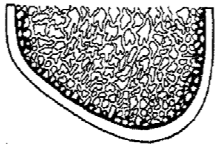
- Low lysine but not low energy decreased growth during rearing
- Low lysine tended to increase backfat
- Low lysine increased osteochondrosis scores
- Early reproduction in gilts fed high lysine and high energy?

- Goals (140 kg live weight, 12-13 mm backfat, age 230 days) were met for weight (~140 kg), but gilts were thinner (~10 mm) and younger (200 d) when served at 2nd oestrus

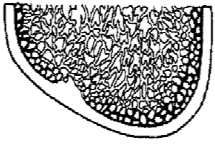
Thank you for your attention!

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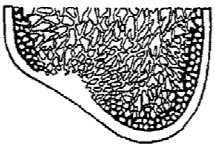
Scores for osteochondrosis



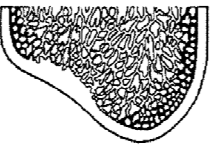
Score 0
All smooth



Score 1
Surface smooth, bone-cartilage slightly uneven



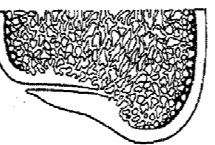
Score 2
Surface minor, bone-cartilage moderately uneven.



Score 3
Surface moderate, bone-cartilage distinctly uneven.



Score 4
Surface and bone-cartilage distinctly uneven. Surface torn, bone visible.



Score 5
Crack. Bone-cartilage very uneven (grave and wide).