Feeding the lactating sow: Meeting energy requirements in 2025

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Introduction

- NBA↑ by 2.6 pigs in the past 10 yrs – **(15.3 in 2024) – 4.4 pigs↑in 24yrs**
- DK – 18.5, NE – 15.7 and FR – 15.8
- Optimum nutrition in lactation ever more critical
- How much feed do suckling sows need?
- Depends on
  - maintenance
  - **milk production**
  - loss in body weight (mobilisation of body tissue)
  - creep feed intake

Moorepark Performance 2024

- Avg born alive - 16.2
- Avg weaned - 13.5
- Avg birth weight -1.41kg
- Avg weaning age - 29.5 days
- Avg weaning weight - 8.6kg
- Sow weight pre-farrowing - 256kg (220Kg)
- Sow weight weaning - 222kgs
- Lactation Feed Intake (Avg. from 3 batches)
  - Sow - 8.8 kg/day
  - Gilt - 7.7 kg/day

Introduction

- Sows' energy intake (MJ DE/day) = feed intake (Kg/day) x density in diet (MJ DE/Kg)
- Great progress in increasing lactation intake

But

- Common lactation diets (14.2 MJ DE/kg & 0.9% Lys/kg) may no longer be sufficient
  - Excessive weight loss during lactation and/or milk yield depressed

- **What is optimum DE and Lys density ?**

Assumptions

- 28 / 32 day lactation
- Mean birth weight - 1.4 kg
- Mean weaning weight - 8.0 / 9.0 kg
- Sows
  - Empty farrowing weight of 220 kg
  - 13.5 / 14.0 / 14.5 pigs weaned per litter
- Gilts (Not for today)
  - Empty farrowing weight of ~180 kg
  - 13.5 pigs weaned per litter

Energy and feed requirement of lactating sows

Table 1. Energy requirement of sows [28 day weaning (8.0 kg WW)]

	Equation	Pigs weaned per litter 13.5	14.0	14.5
Maintenance requirement	mean $BW^{0.75} \times 0.492$	28.1	28.1	28.1
Milk production (MJ DE/day)	litter growth rate x 30.4	96.7	100.3	103.9
Total Required (MJ DE/day)		124.8	128.4	132.0
	Dietary DE (MJ/kg)			
Required feed intake (Kg/ day)	14.2	8.8	9.0	9.3
Required feed intake Kg/ day)	15.0	8.3	8.6	8.8

- 10Kg weight loss contributes 4.5 MJ DE /day
- But must keep weight loss below 10% in sows and 5% in gilts

Sow weight loss

- Important source of energy

BUT

- **≤ 5% for gilts and ≤ 10% for older sows**
- To ensure fertility and subsequent productivity
- Gilts are most affected by lactation weight loss

Energy and feed requirement of lactating sows

Table 2. Energy requirement of sows [32 day weaning (8.0 kg WW)]

	Equation	Pigs weaned per litter 13.5	14.0	14.5
Maintenance requirement	mean $BW^{0.75}$ x 0.492	28.1	28.1	28.1
Milk production (MJ DE/day)	litter growth rate x 30.4	84.6	87.8	90.9
Total Required (MJ DE/day)		112.7	115.9	119.0
	Dietary DE (MJ/kg)			
Required feed intake (Kg/ day)	14.2	7.9	8.2	8.4
Required feed intake (Kg/ day)	15.0	7.5	7.7	7.9

- 10Kg weight loss contributes 4.5 MJ DE /day
- But must keep weight loss below 10% in sows and 5% in gilts

Energy and feed requirement of lactating sows

Table 3. Energy requirement of sows [28 day weaning (9.0 kg WW)]

		Pigs weaned per litter		
	Equation	13.5	14.0	14.5
Maintenance requirement	mean $BW^{0.75}$ x 0.492	28.1	28.1	28.1
Milk production (MJ DE/day)	litter growth rate x 30.4	111.4	115.5	119.6
Total Required (MJ DE/day)		139.5	143.6	147.7
	Dietary DE (MJ/kg)			
Required feed intake (Kg/ day)	14.2	9.8	10.1	10.4
Required feed intake (Kg/ day)	15.0	9.2	9.6	9.9

- 10Kg weight loss contributes 4.5 MJ DE /day
- But must keep weight loss below 10% in sows and 5% in gilts

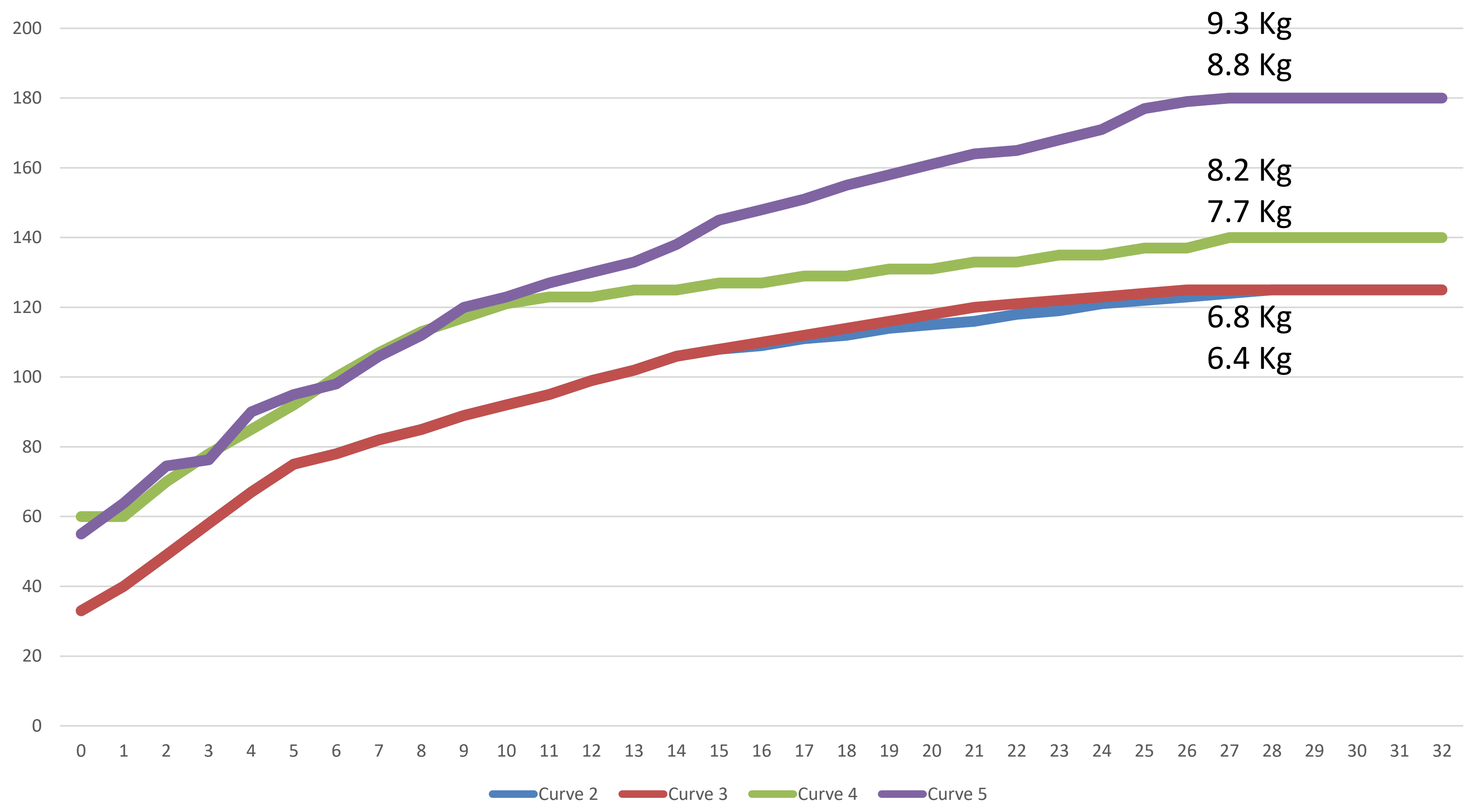
Energy and feed requirement of lactating sows

Table 4. Energy requirement of sows [32 day weaning (9.0 kg WW)]

	Equation	Pigs weaned per litter 13.5	14.0	14.5
Maintenance requirement	mean $BW^{0.75} \times 0.492$	28.1	28.1	28.1
Milk production (MJ DE/day)	litter growth rate x 30.4	97.5	101.1	104.7
Total Required (MJ DE/day)		125.6	129.2	132.8
	Dietary DE (MJ/kg)			
Required feed intake (Kg/ day)	14.2	8.8	9.1	9.4
Required feed intake (Kg/ day)	15.0	8.4	8.6	8.9

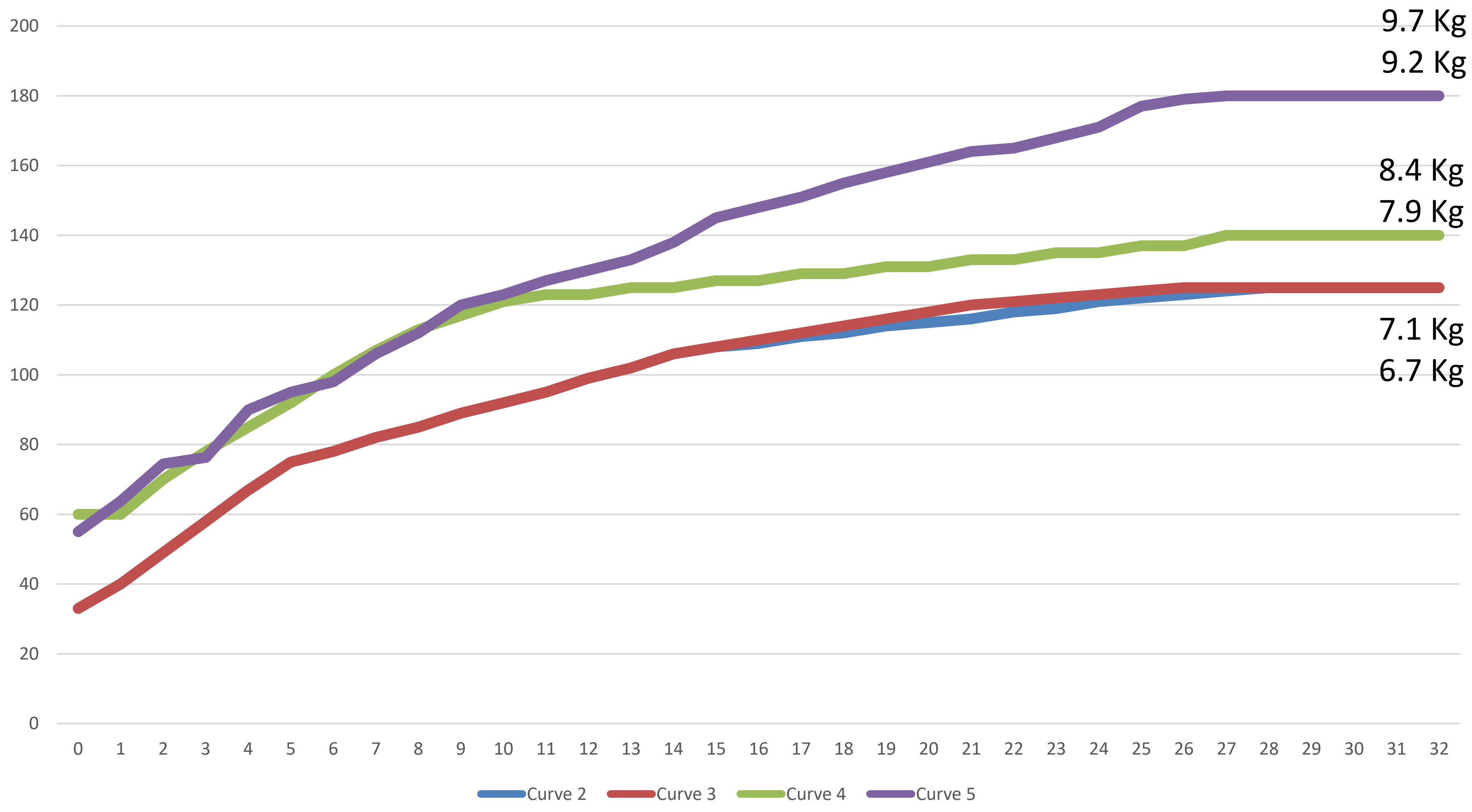
- 10Kg weight loss contributes 4.5 MJ DE /day
- But must keep weight loss below 10% in sows and 5% in gilts

Progression in Moorepark Lactation Curves Over Years (MJ DE/Day)



14.2 MJ DE Diet
15.0 MJ DE Diet

Progression in Moorepark Lactation Curves Over Years (MJ DE/Day)



14.2 MJ DE Diet
15.0 MJ DE Diet

So, Which Diet?

- Feeding a 14.2 MJ DE diet
- 8.0kg /day + intake necessary with 13.5 weaned at 8kg
  - ~ +0.5kg per additional pig weaned
  - ~ +1kg per 1kg increase in average weaning weight.
- Balancing act between dietary energy density and intake
- Failure to meet the requirements of the sow/gilt result in
  - Piglet weaning weight targets not achieved
  - Excessive sow weight loss
  - Poor reproductive performance at next farrowing

Diet Comparison at 8kg/day

Minimum avg. intake (MJ DE) to prevent >10% weight loss (wean at 28 days)

	No piglets weaned per sow		
	13.5	14	14.5
Weaning Weight			
8kg	115	119	122
9Kg	130	134	138

Minimum avg. intake (MJ DE) to prevent >10% weight loss (wean at 32 days)

	No piglets weaned per sow		
	13.5	14	14.5
Weaning Weight			
8kg	104	107	110
9Kg	117	121	124

* Shaded area represents where a 15MJ DE / 10g/Kg Lys diet should be considered

So, what's the cost?

- August 2025
  - 14.2 MJ DE/kg - €268 (ingredient cost)
  - 15.0 MJ DE/kg - €318 (ingredient cost)
- A switch from 14.2 MJ DE/kg to **15.0 MJ DE/kg** €50/tonne or
- At 224 kg per lactation (8kg; 28days) €11.20/lactation
- At 2.25 litters per sow per year €25.20/sow/year
- If each weaned piglet is worth €50 = ↑0.5 of a pig weaned/year to cover this

- **↓empty days, ↑weaning weight, ↑subsequent born alive as well as likely ↑ in sow longevity ……………………….Birth weight??**

Increase Avg. Daily Lactation Energy Intake

1. **Increase physical lactation feed intake**
2. Increase energy density in the diet
3. Increase lactation length (later weaning)

Encourage increased lactation feed intake

- Feed curves to match/exceed desired intake
- Don't overfeed during gestation
- Maintain farrowing rooms at 18-20^{0}C
- Wet better than dry
- Water:meal ratio 3:1
- Feed 3 times daily (Summer Splits: 40%, 20%, 40%)
- *Ad-libitum* wet dry feeding is a good alternative
- Pellets better than meal with dry feeding

Encourage increased lactation feed intake

- Keep feed fresh
- Supplementary water
- **First 2 weeks of lactation critical !!**
- **Don’t let curve or trough capacity restrict intake**
- **Curve is your target!**
- **What is actual intake per sow?**

Summary

- Sow's requirement - no. pigs weaned and weaning weight
- Lactation feed intakes ↑ in recent years
- BUT NBA↑ - higher targets for the number weaned/litter
- Focus on increasing physical feed intake, but
- ↑ Lactation diet density will help increase energy intake
- **At high feed intakes, excellent targets can be achieved by feeding a diet of 15.0 MJ DE/kg and Lys content of ~1%**

Questions?