Gilt feeding – Ad libitum feeding

How to maximize lifetime productivity

Careful attention to the feeding of the DanBred gilt will be rewarded in the farrowing unit- setting a prime starting point on the road to release their genetic capability.

Optimum feeding of gilts by ad libitum feeding

Gilts represent the future production of the sow herd, and DanBred gilts come with an extraordinary genetic potential for reproductive performance.

Careful attention to the feeding of the DanBred gilt will be rewarded in the farrowing unit- setting a prime starting point on the road to release the genetic capability for optimum lifetime performance.

The recommended feed curve will ensure a balance of the feed amount in relation to the age and weight of the gilts as shown in figure 1 (on the left).

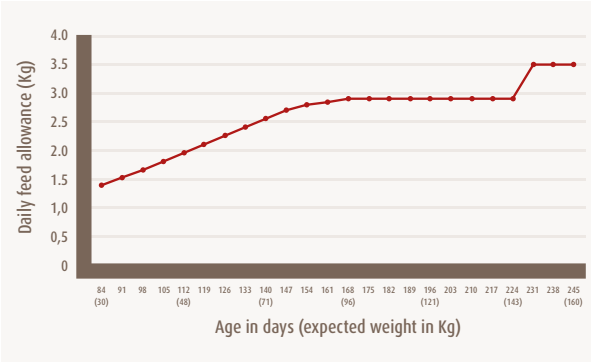

Figure 1 Feed curve ensuring ensure a balance of the feed amount in relation to age and weight.

The huge potential for growth in the DanBred animals means that there must be a focus to limit growth rate in the DanBred gilts, which is why the feed energy level is a very important factor when working with DanBred gilts.

The optimum lifetime production for DanBred gilts is reached when the gilt is mated for the first time in the second heat, at the age of 230-250 days weighing between 140-160 kg with a back fat thickness of 14-15mm at the P2 measuring point (2).

Find P2 about 7 cm from the backbone. When measured in a straight line from the tip of the last up towards the backbone

Moderation of gilt growth

The feeding strategy for DanBred gilts is set to meet nutrient requirements as well as maximisation of long-term productivity.

A daily gain of 750-800 g/day from 30 kg to 140 kg will lead to the best possible basis for long-term reproduction productivity in DanBred gilts [2].

Feeding of DanBred gilts should ensure a steady continuous but controlled weight gain throughout the period of growth. Expected weight development from following the DanBred recommendations is shown in figure 2.

The target is to initiate puberty and the onset of the oestrus cycle, support the pre-pubertal mammary development and maximise the productivity on litter size and longevity.

Studies indicate that the age of the gilt, as well as the correct introduction of boar contact, is the main factors when it comes to the onset of puberty [2][3].

The amount of body fat in the gilts might help the onset of puberty in gilts [1].

The managed growth rate for replacement gilts has shown to positively correlate with sow longevity because the moderated growth rate has a positive effect on bone growth giving the gilts stronger legs and thereby increase longevity in breeding animals [5].

In a 2004 trial Vestergaard et. al. found that 50 to 60 % of sows were culled due to leg problems and this can be related to unmanaged growth rates during gilt development. Managing growth and increasing fat deposit through feeding will give lighter but slightly fatter gilts at the age of first mating.

Age, Days (weeks)	Weight, Kg	ADG, (g/day)
28 (4)	7	250
56 (8)	17	430
70 (10)	25	430
84 (12)	30	500
112 (16)	48	500
140 (20)	71	500
168 (24)	96	570
196 (28)	121	615
224 (32)	143	640
245 (35)	160	650
From 56 to 135 days	145	770

Table 1: Optimum ADG from weaning to first mating.

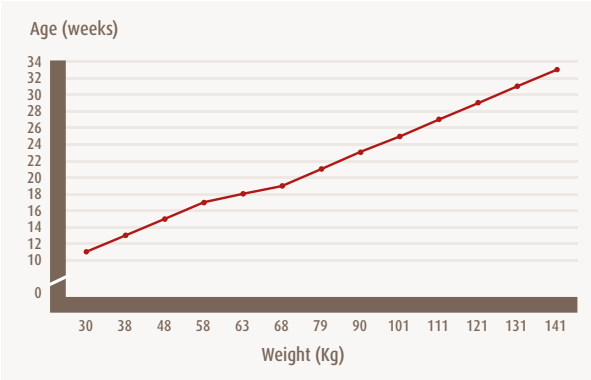

Figure 2 Feed to ensure balanced steady growth

Gilt body fat content can play a role in the onset of puberty, therefore, it is important to ensure a back fat target of 15 mm and of at least 12 mm at first mating [4].

Mammary development in the replacement gilts is not affected by the more linear growth curve, as the vast part udder growth happens in the last third of gestation [2].

Size of first litter might be marginally decreased at steady growth rate, but flushing the gilts before mating has proven to be a very efficient way of increasing the ovulation rate at mating in the second oestrus and thereby enlarge the litter size [1].

Easy gilt feeding to reach optimum DanBred reproductivity targets

To exploit the full potential of DanBred gilts the following targets should be met at first mating:

- Age: 230-250 days (32-35 weeks)
- Weight: 140-160 kg
- 14-15 mm back fat at the P2 measuring point.
- First mating on the 2nd heat

Start boar exposure daily at the age of 200 days (28 weeks).

To efficiently control daily gain, the DanBred gilts must be fed diets containing less crude protein and lysine than finisher pigs. Restricted phase feeding with three different diets from 30 to 140 kg is recommended as shown in figure 1.

If ad libitum feeding is the only possibility, the daily gain should be controlled as ad libitum increase the risk of daily gain exceeding the recommendation.

From 30-110 kg keep the energy density between 9.2-9.5 MJ NE/12.0-12.5 MJ ME/0.97-1.00 EW per kg feed and feed increased amounts of fibre. Additionally, follow the lysine and protein recommendations shown below.

At a weight of 110 kg, the diet should be changed to promote the deposit of back fat. Energy density should be kept but Standardized Ileal Digestible (SID) lysine should be reduced and the gilts should be fed based on body condition to ensure a growth rate within the desired level.

The table to the right shows the recommended content of selected nutrients per kg feed when using ad libitum feeding for gilts from 30-110 kg and for gilts above 110 kg, respectively.

Ad libitum feeding	Diet 1	Diet 2
Weight	30-110 kg	>110 kg
Energy density per kg feed	9.2-9.5 MJ NE/ 12.0-12.5 MJ ME/ 0.97-1.00 EW	8.7-9.2 MJ NE/ 11.5-12.0 MJ ME/ 0.90-1.00 EW
SID Lysine per kg feed (g)	5.8	4.0
Total lysin per kg feed (g)	6.8	4.9
Minimum SID crude protein per kg (g)	102	90
Phosphorous per kg (g)	4.7	4.0
Digestible phosphorus per kg (g)	2.5	2.0
Calcium per kg (g)	6.9	6.5

**NE = Net energy,; ME = Metabolic Energy; EW= Net Energy in Dutch evaluation system*

References

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