Sow feeding after weaning and during gestation

In this white paper you will read about how to feed sows in the time just after weaning and in gestation until a few days before farrowing. You will learn the importance of flush feeding and why it is important to use two or more gestation feeds. This white paper gives you practical tips that will help you to produce efficient and on a high level
The feeding strategy for Topigs Norsvin sows is based on the body condition targets and the stage of production. The feeding strategies are developed to provide the correct nutrient levels, at the right time to meet the sow's daily nutritional requirements. To obtain top performance, Topigs Norsvin recommends feeding five well-developed sow diets. The practicalities of feeding different diets are always a concern. Even with a reduced number of diets the sows will perform but it is more difficult to reach specific nutrient requirements for different phases of production. To obtain the maximum productive potential from the sow it is vital to manage the sow's body condition, to optimize the daily amount of feed offered and to supply the correct dietary requirement levels during all stages of production.

The recommended five sow diets:

1. **Flush diet**: Fed from weaning to mating to stimulate ovum development.

2. **Gestation Diet 1**: Backfat stimulating diet (lower AA to energy ratio). Fed after insemination (day 5 of pregnancy) till day 84 of gestation or fed to older parity sows.

3. **Gestation Diet 2**: Late gestation diet to enhance piglet birth weights. Fed from day 85 till day 110 of gestation or fed to first parity sows.

4. **Transition Diet**: Fed during the transition period between gestation and lactation (from day 110 of gestation till 2-3 days after farrowing).

5. **Lactation Diet**: To maximize feed intake and milk yield during lactation. Fed for the duration of the lactation period.
Flush for more and better piglets

Short-term, high-level feeding (flushing) after weaning until mating will increase the quality of the oocytes in breeding animals. Flush-feed gilts and sows have been shown to increase plasma levels of follicle-stimulating hormone (FSH) and the pulse frequency of luteinizing hormone (LH), suggesting that it enhances oocyte quality (size and uniformity) by stimulating the secretion of gonadotropins.

Energy and nutrient intake should be maximized before mating by maintaining a high feed intake level until the sow is serviced. Sows must follow an ad libitum feed schedule from weaning to service. Specialized flush feed must be fed during this phase. The energy source of the diet must originate from a carbohydrate constituent (especially starch and sugars). Use of a standard lactation feed is not recommended. The vitamin and mineral recommendations of the lactating sow should be followed. The ratio between essential amino acids and lysine should follow the recommendations given for the lactating sow.

TIPS TO FLUSH BETTER

- Dextrose can have positive effects on piglet vitality when incorporated into the flush diet. Ensure that the sows receive a minimum of 150 grams of dextrose per day.
- Additional minerals and vitamins can also be provided during the flush period. Higher levels of Vit A, Vit E, Vit B12 and Folic acid have been shown to have a positive effect on reproduction.
- Feeding sows ad libitum requires feeding more often per day. Feed smaller portions at least three to four times a day to increase total daily feed intake from weaning till mating.
- Sows will naturally reduce their feed intake when they are in heat. Reduce feed allowance to normal levels to reduce wastage.
- Provide water ad libitum, but prevent wet floors.
**Feeding in gestation**

Proper feeding of gestating animals directly benefits the lactation performance and piglet vitality. It is important that gestating sows receive enough amino acids and energy to support body maintenance, body recovery from previous lactation, and fetal and mammary gland growth (especially during the last trimester). During gestation, sufficient body reserves must be accumulated to compensate for eventual nutritional deficits that may occur in the following lactation period.

During the first six weeks of gestation (0-45 days), the sow uses most of the feed for maintenance and to regain lost condition. Sows can loose on average 2-4 mm of backfat (measured at the P2 position), during lactation. Depending on the sow’s condition at weaning, the desired feed level of the individual sow must be determined after mating. On day 84, the sow should have regained the adequate body condition, weight and backfat, so that the feed surplus can be used for piglet growth.

Topigs Norsvin recommends feeding a minimum of two gestation diets. Feeding two gestation diets, offers the possibility to better meet the daily demands of the gestating sows, but also offers the possibility to further enhance sow productivity and longevity. The advantage of feeding two gestation diets are that you minimize the overfeeding of nutrients to sows and it is easier to manage and control the body condition of sows. Feeding two gestation diets also has economic benefits by reducing sow feed cost per year and by improving sow and litter performance.

<table>
<thead>
<tr>
<th>Mixed parities</th>
<th>Lower AA: Energy (5-84 d)</th>
<th>Higher AA:Energy (85-110 d)</th>
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</thead>
<tbody>
<tr>
<td>Parity 1 and 2</td>
<td>Gestation 1</td>
<td>Gestation 2</td>
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<tr>
<td>Parity ≥ 3</td>
<td>Gestation 1</td>
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The main difference between the two gestation diets lies in the ratio between the amino acids and energy. The two gestation diets are described as follows:

- **Gestation 1** has lower amino acid to energy ratio. It is a backfat stimulating and body weight recovery diet that is fed directly after insemination till day 84 of gestation. It can also be fed as single gestation diet to older parity sows (>3rd parity).

- **Gestation 2** has higher amino acid to energy ratio. It improves the piglet birth weights and is fed from day 85 till day 110 or until transfer to the farrowing unit. It can also be fed as single gestation diet to young sows (<3rd parity).

**The advantages of backfat stimulating diets:**
- Better coverage around the shoulders before farrowing to prevent shoulder sores.
- More reserves to be used for milk production.
- Better lifetime performance and stayability.
- Calmer, more relaxed sows during gestation and lactation.
Feed the right amount at the right time

By dividing the energy level of the diet by the daily nutrient requirements of the sow a proper feed scheme can be derived. The examples of feed curves below are based on the example diet calculations. The feed curves need to be further adapted to the specific farm situation to ensure that sows regain the condition lost during the previous lactation, but also to reach the ideal condition target before entering the next lactation. This is best achieved by feeding each individual sow a well-balanced diet and basing daily feed allowances on an estimation of the sow’s body weight and backfat thickness. The Topigs Norsvin Sow Feed Monitor was developed to assist to determine and to evaluate the feed curves based on local conditions. Read more about the Feed Monitor at feedmonitor.topigsnorsvin.com

<table>
<thead>
<tr>
<th>Days in gestation</th>
<th>Cycle 1</th>
<th>Cycle 2-3</th>
<th>Cycle 4 and more</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
<td>Min</td>
</tr>
<tr>
<td>0-49</td>
<td>2.1</td>
<td>2.2</td>
<td>2.5</td>
</tr>
<tr>
<td>50-84</td>
<td>2.3</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>85-110</td>
<td>2.8</td>
<td>2.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

This advice is for corn-soy feed. Add 0.1 kg for feed based on wheat-barley-soybeans. Your local Topigs Norsvin can inform you in detail about the nutrient levels we advice for the feed. This advice is for the TN70 sow of Topigs Norsvin. Contact us or your feed advisor to enquire about the specific needs of your genetics.

Water and gestation

In the beginning of gestation, a sow must be supplied with a minimum of 12 liters of water per day. During advanced stages of gestation, the water requirement increases to a minimum of 17 liters per day. In group housing systems, sows have free access to water. The water requirements for this period vary between 10 and 12 liters of water per day.

Gestating multiparous sows should be fed according to body condition lost during the previous lactation, so that most sows will be in the desired condition before being transferred to the farrowing crates. In other words, this means increasing the feed allowance for skinny sows and restricting the feed allowance somewhat for fat sows. Use the Topigs Norsvin Sow Feed monitor to determine the most appropriate feed curve based on body condition of the type of sow you have. The Topigs Norsvin Sow Feed monitor can be found at feedmonitor.topigsnorsvin.com.

If more backfat is desired during gestation, research has shown that high-lean reproductive females can be fed a slightly deficient lysine diet. This will moderate lean deposition and increase fat deposition, and possibly improve longevity.
Nutrition is one of the key components to ensure that the modern sow achieves her genetic potential for production and reproduction. The nutritional demands of the modern gestating and lactating sow and her litter have changed significantly over time. Today’s genetic advancements have resulted in feed efficient, fast growing, and leaner pigs.

However, this progress has also created new challenges when it comes to feeding the modern sow. Nutrient supply, in the form of amino acids and energy, must be designed to optimize the reproductive performance and to maintain the optimal condition (body reserves) for the sow’s entire productive life.

Diets should also be optimized to ensure nutritional welfare and comfort to the animals and also to minimize the environmental impact through excretions. To achieve this, a precise adjustment of the feeding level and the feed composition according to the performance level of the sows is required.

This series of white papers about sow feeding covers the following issues:
- Controlling condition
- Transitions and feeding during lactation
- Feeding after weaning and in gestation
- Improving piglet weight

You can download these white papers as well as others from the download section on our website www.topigsnorsvin.com

We hope you find these white papers useful. We have published these to enable our clients to get the maximum out of our genetics. These papers have been produced by our nutrition team. You can visit our website if you want to get into contact with them or you can reach them via feed.group@topigsnorsvin.com

The advice in these documents is based on the perfect feeding of Topigs Norsvin TN70 sows. Nevertheless most of the information is usable for other lines. Use the knowledge of your local Topigs Norsvin advisor or other specialists for the perfect feeding advice for your genetics and situation.

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