Due to the use of 0.8% potassium diformate (KDF) in lactation diets of sows, the number of weaned piglets tend ($P<0.1$) to increase, while losses during weaning ($P<0.05$) are reduced by 50%.

Potassium diformate has been used in feed for the entire pig production chain, where it acts as an acidifier and antibacterial agent. The latter is based on molecular stability, which bolsters a potent response against harmful bacteria - mainly Gram-negative bacteria - within the digestive tracts’ lower parts.

Overland et al. (2008) describes the effects of potassium diformate (KDF) on health and performance of newborn piglets. When fed to sows, KDF has a positive effect on sow’s backfat thickness in gestation and milk composition, and growth performance of piglets.

More studies revealed better piglet performance from birth, through improved microbial conditions at farrowing and sow milk output, which correlate with sows’ feed intake from farrowing onwards.

KDF’s antimicrobial effect against the harmful microflora in the intestinal tract of sows (mainly Enterobacteria) helps improve gut health. It also responds positively to the presence of Lactobacilli in sows and piglets (Overland et al., 2008), another important parameter for newborns’ health. With KDF, E. coli in the faeces of sows is mitigated by 90% (Table 1), hence better health for newborns (Hittel and Lückstädt, 2017).

Furthermore, Overland et al. (2008) found higher fat concentration in sow milk starting from the 12th day after farrowing in sows fed with KDF (Figure 1); this is possibly due to improved digestibility parameters, as reported previously.

With newborns, it is important to examine factors affecting their performance, which will be reflected in the outcome of the overall pig production. First contact with the...
outside environment is the most critical. Also, it is important to note that the most common cause of post-farrowing piglet death is the lack of energy due to an inadequate amount of colostrum and diarrhoea due to harmful bacteria (mainly E.coli in sow faeces) found in their environment. FORMI can mitigate direct infection via sow faeces (Table 1).

Piglets are born with low energy reserves (Mellor and Cockburn, 1986; Theil et al., 2014) and lesser immunoglobulins (Bourne, 1969). They should ingest colostrum for energy and possess passive immunity to ensure survival and development (Le Dividich et al., 2005; Quesnelet et al., 2012). Lückstädt et al. (2012) reported that, due to the use of 0.8% KDF in the lactation diets of sows, the number of weaned piglets tend (P<0.1) to increase, while losses during weaning (P<0.05) are reduced by 50%. KDF-fed sows tend to have a higher average daily gain (Figure 2), resulting in heavier litter weights at weaning. Noticeably healthier, piglets do not suffer from diarrhoea in the initial days after farrowing as the bacteria in the faeces of sows is reduced.

The growth-promoting impact of 0.8% dietary KDF in lactation diets was further confirmed by Durst et al. (2012), who found weight gains during weaning increased by almost 8%, coupled with lower backfat losses (67%) for the sow.

Supplementing lactation diets with KDF leads to increased milk fat content, and higher birth and weaning weights of piglets. The diets benefit the microbial population in the gastrointestinal tract of sows, resulting in a healthier environment for newborns and better survival rates till weaning. It is therefore recommended that ADDCON’s FORMI be used regularly in lactation diets as it not only improves the sow’s overall condition but also supports piglet survival and performance, leading to a higher number of weaned piglets and increased litter weaning weight.

Given that weaning weights of 300g+ lead to a reduction of the fattening period (3-4 days), the economy of pig fattening would consequently be cost-efficient.

- STEVAN PETROVIC (stevan.petrovic@addcon.com) and CHRISTIAN LÜCKSTÄDT, ADDCON

---

**Table 1: Reduction of E.coli in faeces of sows fed with or without FORMI in the lactation diet (Hittel and Lückstädt, 2017)**

<table>
<thead>
<tr>
<th></th>
<th>90th day of gestation</th>
<th>4th day after farrowing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E. coli</strong></td>
<td>5.2 x 10⁷</td>
<td>11 x 10⁶</td>
</tr>
</tbody>
</table>

---

**Figure 1: FORMI’s impact on milk fat content of sows during lactation (Øverland et al., 2008)**

<table>
<thead>
<tr>
<th>Fat content (%)</th>
<th>Day 12</th>
<th>Day 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formi 0.8% Formi 1.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2: Daily weight gain of piglets during lactation of sows fed with or without FORMI (Landkildehus, KFK, Denmark, 2001)**

**Control** | **0.8% Formi** | **Control** | **1.0% Formi**

---

**Figure 1: FORMI’s impact on milk fat content of sows during lactation (Øverland et al., 2008)**

![Chart showing milk fat content of sows fed with or without FORMI during lactation.](chart1.png)

**Figure 2: Daily weight gain of piglets during lactation of sows fed with or without FORMI (Landkildehus, KFK, Denmark, 2001)**

![Chart showing daily weight gain of piglets fed with or without FORMI.](chart2.png)