# Influence of Lianol® Solapro on sow milk production and piglet weight gain

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## Introduction

Sow milk is a pivotal factor in piglet survival, growth, development and pre-weaning piglet body composition. The demonstration that heavier weaning piglets attain market weight faster than lighter weaning piglets has sparked increasing interest in exploiting the lactation period to enhance overall piglet growth and pork production. The incorporation of Lianol® Solapro in the sow's diet increases milk production and feed efficiency.

## Materials and methods

Forty Belgian Landrace sows at CRA-W from 3 groups were divided into a feeding control group and a Lianol® Solapro group upon entering the farrowing unit (7 days prior to expected farrowing). Distribution was done manually as top feeding on the first diet (14.1 MJ of ME/kg, EVAPIG®, rate of 10 g/day) until 3 days post-farrowing. Thereafter, it was added to the 2nd diet at 0.1% (14.7 MJ of ME/kg, EVAPIG®). Piglets are weaned at 4 weeks of age. Sows were weighed and backfat thickness was ultrasonographically measured on P2-site[1] at the beginning and end of trial. Sow weight loss was determined by subtracting uterine weight content[2]. Piglets were weighed at birth and after 4 and 24 days age.

Total energy requirements (TER, MJ of ME/d) of sows during lactation were calculated[3]. The Energy Balance (EB) was found by subtracting calculated TER from the intakes. Milk production over the 1st 3 weeks was estimated from litter weight gain and litter size[4]. IGF-I concentrations were determined in the sow plasma when entering the farrowing unit and at 4 and 24 days of lactation.

Elisa Kit (Mediagnost®) was used after protein cryo-precipitation: acid-ethanol method[5]. Data are processed by variance analysis (GLM procedure, Minitab® 15.1.30.0). Included: effects of feeding treatment, of group and corresponding interaction.

## Results

Litter size (total born, born alive, at 24 hrs) and the average weight of piglets per litter were similar. While the EB was more negative for Lianol® sows (P=0.07), they did not lose more weight and backfat thickness, weight of litter at weaning, litter ADG and milk production were not lower.

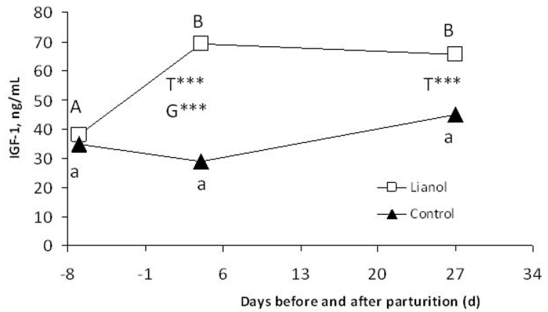
Lianol® sows showed optimal feed efficiency. Sow plasma IGF-I was significantly higher (P<0.001) at day 4 of lactation and at weaning.

**Table 1: Growth performance**

| | Control | Lianol® Solapro | s.e. | Effect |
|---|---|---|---|---|
| Number of litters | 22 | 18 | | |
| Avg. litter size | | | | |
| At birth (born alive) | 11.3 | 11.5 | 0.4 | |
| At weaning | 10.0 | 10.4 | 0.3 | |
| Avg. litter weight, kg | | | | |
| At birth (born alive) | 16.5 | 17.0 | 0.6 | |
| At weaning | 67.5 | 72.0 | 1.8 | |
| Litter ADG, kg/d | 1,956 | 2,129 | 0.063 | |
| TER, MJ EM/d | 74 | 79 | 1.8 | |
| Intake, MJ EM/d | 52 | 51 | 1.8 | |
| EB, MJ EM/d | -22 | -28 | 1.8 | T† |
| BW of sows, kg | | | | |
| Beginning (calculated) | 210 | 204 | 4.4 | |
| At weaning | 184 | 177 | 4.8 | |
| Loss | -26 | -27 | 2.0 | G*** |
| Backfat thickness of sows, mm | | | | |
| Beginning | 18.7 | 18.1 | 0.5 | |
| At weaning | 13.2 | 12.9 | 0.4 | |
| Loss | -5.5 | -5.2 | 0.4 | G** |
| Milk Production first 3 wk, kg | 133 | 143 | 3.6 | |

No standardization of litter size, T=Treatment effect, G=Group effect, TxG=Treatment x Group interaction - † = P<0.01, * = P<0.05; ** = P<0.01, * = P<0.001

**Figure 1: Sow plasma IGF-I**




## Conclusion

Lianol® Solapro added to the feed of sows supports milk production and increases litters of lactating sows.

## References

1. Dourmad, J.Y. et al. (2001), Measuring backfat depth in sows to optimize feeding strategy, INRA Prod. Anim., 14, 41–50.
2. Dourmad, J.Y. et al. (1997), Prédiction de la composition chimique des truies reproductrices à partir du poids vif et de l'épaisseur de lard dorsal. Application à la définition des besoins énergétiques, Journ. Rech. Porcine, 29, 255-262.
3. Noblet, J. et al. (1990), Energy utilization in pregnant and lactating sows: modeling of energy requirements, J. Anim. Sci., 68, 562-572.
4. Noblet, J., Etienne, M. (1989), Estimation of sow milk nutrient output, J. Anim. Sci., 67: 3352–3359.
5. Renaville R. et al. (1993), Changes in the hypophyso-gonadal axis during the onset of puberty in young bull calves, J. Reprod. Fertil., 99, 443-449