

RES-OP-01

**DIETARY SUPPLEMENTATION WITH TALL OIL FATTY ACID AND RESIN ACID INCREASES SOW
COLOSTRUM IGG AND PIGLETS' COLOSTRUM INTAKE IN FREE FARROWING PEN**

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Colostrum is essential for piglet survival and growth, providing the piglets with a source for immunoglobulin and energy. This study examined whether tall oil fatty acid and resin acid (PRO) added to a late pregnancy diet affect colostrum composition, yield (CY, g) and intake of colostrum (g) within 24 h after the birth of the first piglet in free farrowing. One week before farrowing, 60 sows were assigned to a 2×2 factorial [housing (CRATE, PEN), diet (PRO, CON)] experiment. Diet was supplemented daily with 5 ml/sow of PRO or control basic sow diet (CON) during the last week of pregnancy. At the beginning of farrowing, 2 ml colostrum were collected to analyze IgG content (mg/ml, ELISA). Piglets were weighed individually at birth and 24h after the birth of the first piglet to calculate CY. The PEN sows tended to have higher CY than the CRATE sows (4949.3 ± 184.0 vs. 4528.5 ± 162.5, $P=0.06$) and had higher colostrum intake by the piglets (342 ± 6.8 vs. 319 ± 6.9, $P=0.01$). Sows fed with PRO diet had higher colostrum IgG content than CON fed sows (113.8 ± 4.9 mg/ml vs. 97.5 ± 5.1 mg/ml, $P<0.05$). In both PEN and CRATE, sows with PRO tended to have higher IgG level than CON diet (119.1 ± 6.3 vs. 103.8 ± 7.9 and 108.9 ± 7.3 vs. 92.1 ± 6.6, $P=0.06$, PEN and CRATE respectively) and higher colostrum intake in PEN sows (355 ± 8.9 vs. 325 ± 10.4, $P<0.05$). A linear regression model predicts 300 g of more colostrum when PRO is used, and an additional 300 g is predicted when housing in PEN ($P<0.05$, $R^2=0.4$).

In conclusion, this study confirmed the positive effect of PRO diet on IgG level in colostrum and CY. The effect seems to be stronger in a free farrowing pen.