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Oregano essential oil in gestation and lactation diets improves sow and piglet performance

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Introduction

Oregano essential oil (OEO) is a phytogetic feed additive with a spicy, aromatic flavor that stimulates appetite and promotes feed intake. Phytogetic feed additives, including OEO, are being studied because of their well documented antibacterial, antifungal and antioxidant activities and their ability to support a healthy gut microflora (1). Recent studies showed that OEO increased sow feed intake and was associated with improved sow and piglet productivity (2, 3). The aim of this experiment was to investigate the effects of OEO in gestation and sow lactation diets on sow and litter performance.

Materials and Methods

Three hundred and nine pregnant PIC gilts and sows were enrolled in the study: control: 146 (95 sows, 51 gilts) and experimental: 162 (109 sows, 53 gilts). Gestation and lactation diets were the farm's usual medication-free diets \pm OEO (0.5 lb/ton Regano[®], Ralco Nutrition, Inc). Gilts received OEO-supplemented diet for the final 30 days of gestation and during lactation. Sows were offered OEO-supplemented diet when they entered the farrowing house 5-7 days before farrowing. Lactation diet was given *ad libitum* and was offered 3 times per day. The average lactation length was 18.8 days: 19.5 days for the sows and 17.2 days for the gilts. Reproductive and litter performance parameters were measured through lactation.

Results

Results showed significantly increased number born alive ($P=0.047$) in the OEO group, which was most pronounced in gilts. An interaction between mummies and parity ($P=0.062$) was observed: control gilts had a higher level of mummies (0.44%) than OEO-gilts (0.24%). For sows, mummies were slightly higher for OEO-sows than control sows (not significant). There were no other treatment effects for stillbirths or mummies, although sows had higher stillbirths.

Although previous studies showed OEO supplementation increased sow feed intake, this was not observed in the current study. However, feed intakes averaged a very healthy 7.64 kg/day (16.8 lb) for sows and 6.84 kg/day (15.1 lb) for gilts in the control group. This is in the high range for this PIC genotype.

OEO-fed sows had significantly reduced number of scouring litters ($P=0.008$). Litters from control sows were 3.5 times more likely to scour (95% CI, 1.58 to 7.80) than those from OEO group. Prewaning mortality was not different between the treatment groups. The OEO group had significantly increased ($P=0.026$) number of pigs weaned (+0.29 pigs/litter for sows and +0.61 pigs/litter for gilts), and weaning weight was increased by 0.33 lb for OEO-fed sows ($P=0.035$) compared with controls.

Discussion

This study confirmed prior studies showing that OEO significantly reduced the number of scouring litters and improved litter growth rate, resulting in higher weaning weight. These results suggest that OEO improved the health of the litter and/or increased milk production. OEO did not reduce overall preweaning mortality; however this can be confounded by overlays and other non-gut health problems. University of Minnesota research (3) showed that inclusion of OEO in sow gestation and lactation diets increased number of piglets born alive, increased litter birth weight and improved average daily gain of piglets. The authors suggested higher growth performance of piglets was attributed to the higher quality colostrum from OEO-sows.

References

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