The benefits of natural oregano essential oil on sow & piglet performance

The modern day prolific sow faces many challenges in regards to her general health and lifetime performance. One commonly forgotten area in sow management is gut health. Ensuring the gut is well balanced and rich in diversity can help to improve sow feed efficiency, liveability and ensure the carryover of a healthy bacterial population to her litter.

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In a world with an ever-increasing population and finite resources, ensuring health and performance of sows and reduced need for medication in her progeny is fundamental in providing sufficient, safe and healthy food to meet global demand.

In pig production, the number of piglets weaned per sow per year has been commonly used as a marker to determine the comparative productivity of breeding sows and values have increased drastically over the past 30 years.

However, this increase has been associated with a lower piglet birthweight, which coincides with an elevated incidence of pre-weaning mortality which can lead to impaired post-weaning growth performance. Piglet growth performance is directly related to colostrum and milk intake and quality, therefore driving piglet performance through improved maternal nutrition can be a cost effective way to maximise lifetime performance and the health of growing piglets.

Piglets lost prior to weaning represent a major economic loss for producers as well as a potential welfare target, while weaning homogenous and robust piglets is known to benefit later performance and lower the incidence of health issues.

Beneficial compounds

Oregano essential oil (OEO) has been shown to contain more than 100 beneficial compounds, with a complex mode of action. Utilising a natural oil which is consistently produced helps to ensure all active components are in balance and so the benefits seen from using natural OEO can be more diverse.

Compounds such as ρ-cymene, carvacrol and thymol are well documented to have a role in appetite enhancement and antioxidant function, as well as being antibacterial and effective in both immunomodulatory and anti-inflammatory processes. ρ-cymene and thymol are precursors to carvacrol and so there is a synergistic action when the active levels of these components are in balance.

Using a synthetic product which has only one or two components cannot provide the multifactorial benefits of the natural oil.

Furthermore, an overloading of the antibacterial action can actually impede growth of the beneficial bacteria in the gut.

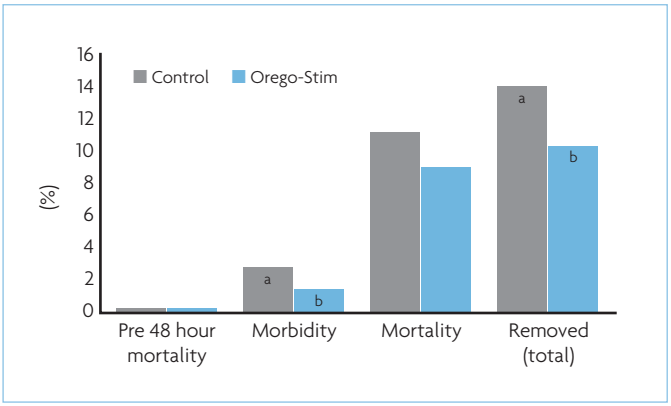
Published work has found natural OEO to be beneficial in sows to aid lactation performance, feed intake and modification of the gut microbiota.

These improvements can have a beneficial impact on piglet health and post-weaning performance.

Previous findings have also shown that dietary supplementation of natural OEO throughout gestation in sows significantly decreased oxidative stress markers at the time of farrowing.

This may have a positive effect on sow energy levels and therefore help to reduce time taken for farrowing, helping to ensure more live born. Therefore, OEO supplementation could help drive sow reproductive success through the management of intestinal health and reducing enteric stress.

Fig. 1. Piglet losses and removals per treatment ([a, b] letters denote statistical significant difference by ANOVA (p<0.1)) (CISS, 2019).



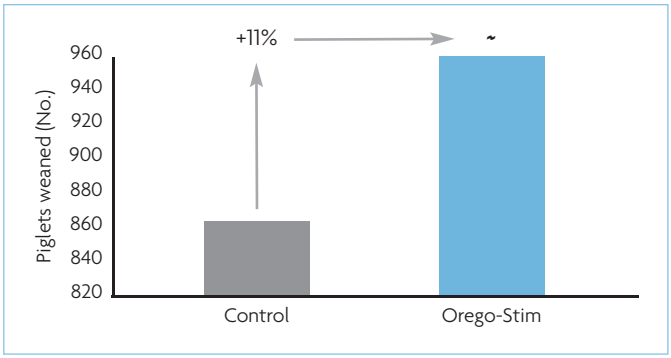


Fig. 2. Piglets weaned per treatment (~represents significantly improved likelihood of weaning (RR=1.73, p=0.0001)) (CISS, 2019).

Evaluation of efficacy

A recent trial managed by Carthage Innovative Swine Solutions (CISS) in the US was undertaken by Anparo to evaluate the efficacy of OEO in sow gestation and lactation feed.

The trial consisted of 200 multi-parous sows which were fed either a basal gestation and lactation ration, or OEO supplemented rations (Orego-Stim at 500g/tonne) in both gestation and lactation.

Orego-Stim is a high quality, eubiotic containing 100% natural OEO produced in the UK by Anparo plc.

In this study, the total number of piglets born, the number of piglets born alive and piglet birthweights were recorded for each sow.

Weaning was carried out at around 19 days of age, as is common practice on commercial units in the US. At weaning the number of piglets weaned per litter and litter weaning weights were recorded for both groups.

It was found that supplementation with OEO improved sow and progeny performance.

The average number of piglets born alive was conserved across both treatment groups, however, at weaning, average litter weight was numerically higher from sows supplemented with OEO.

There was a significant trend in the reduction of the number of removals (Fig. 1) and overall there was a 2% reduction in pre-weaning mortality.

As a result of this, the number of piglets weaned was 11% higher for litters from sows fed diets supplemented with OEO (Fig. 2).

These improvements provided a potential return on investment for the unit of 8:1.

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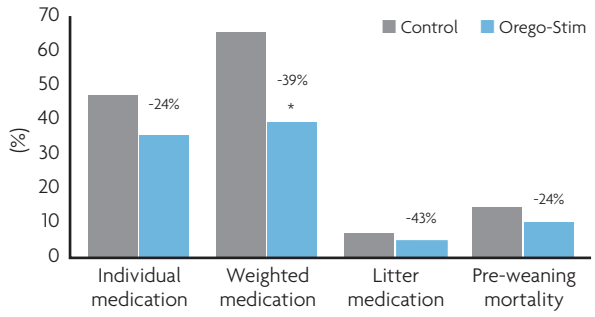

Fig. 3. Piglet health records; individual, weighted (includes repeated intervention) and litter medication and mortality pre-weaning. (*denotes significant trend of difference to control (p<0.05)) (NTU, 2018).

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Top-dressing sow feed

The benefits of OEO can also be achieved with a supplementation daily by top-dressing sow feed.

Anparo has developed a product specifically designed for easy addition by top-dressing sow rations called Orego-Stim TD.

A trial was conducted by Nottingham Trent University with 60 multiparous sows which were randomly allocated to either a control basal lactation diet or OEO top-dressed to the lactation diet (Orego-Stim TD) fed from seven days pre-farrow until weaning at approximately 26 days. At two weeks of age, piglets of all sows were fed creep feed containing OEO (Orego-Stim at 1kg/tonne) and performance was monitored through to finish.

It was found that supplementation of OEO by daily top-dressing to sow diets led to fewer incidence of health problems in the piglets. This therefore led to a reduction in the requirement for treatment with medication by 4.7% in these piglets compared to litters from sows fed the basal diet. In addition, the pre-weaning mortality of litters from OEO fed sows was reduced from 14.3% to 10.9% (Fig. 3) and piglets displayed improved performance post-weaning.

Pigs from supplemented sows had an average finishing weight which was 3.4kg heavier than piglets from the control sows (Fig. 4).

Conclusion

OEO provides a natural tool for the improvement of sow, and subsequently progeny, health and performance. It has been shown to be able to support sow lactation performance leading to an increased number of piglets weaned per sow.

Improving performance, particularly prior to and at weaning, can have a significant effect on lifetime performance and herd medication requirements. ■

References are available from the author on request.

For more information on the benefits of supplementing sow diets, particularly when top-dressing daily rations, email sales@anpario.com

Fig. 4. Body weight (kg) at weaning, 10 weeks post-weaning (PW) and at finish (NTU, 2018).