Support lifetime performance with oregano essential oil

Gut health is vital in supporting optimal calf growth and enhancing lifetime performance, with healthy calves making more visits to milk and concentrate feeders than diseased calves.

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A healthy gut is considered to be in a state of eubiosis, which means that the gut microbiome is diverse and well-populated.

This is very important for calves, particularly as more than 50% of calf mortality cases are associated with gut health issues and scouring.

Surveys have shown that 35-40% of calves suffer from diarrhoea, which has been found to increase likelihood of mortality five-fold.

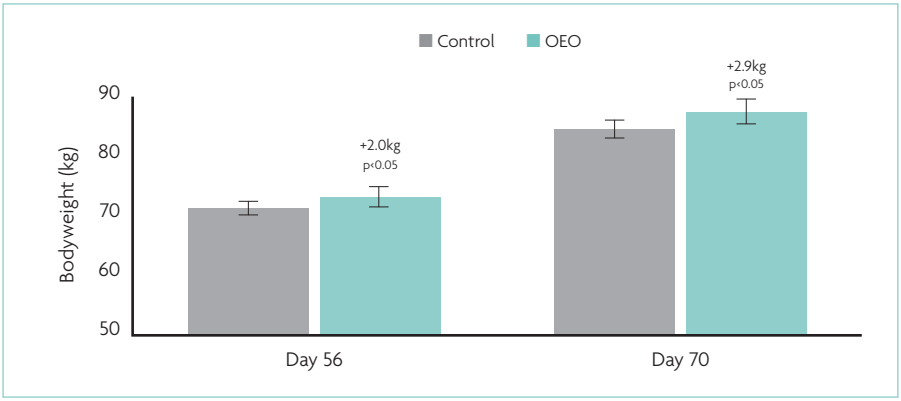
Gut health challenges can be attributed to failure of passive transfer of immunity from the dam, either as a result of poor colostrum quality, or impaired calf consumption.

Phytogenic feed additives, such as those developed from 100% natural oregano essential oil (OEO) have many well documented properties which can help to support calf gut health, performance and development, including antioxidant, anti-inflammatory, antimicrobial, anti-protozoal and immuno-modulatory functions. In addition, the aromatic properties of oregano enhance the appetite of calves, helping to support feed intakes. Heavier calves at weaning, and those with a higher average daily gain from birth to weaning have been shown to have a higher milk production during first lactation.

In addition, a greater average daily gain and bodyweight has been associated with improved fertility in heifers.

It is therefore critical to ensure that calves have the best start to support lifetime performance, allowing their genetic potential to be reached in the herd and OEO supplementation is one such way this can be achieved.

Fig. 1. Calf bodyweight (kg) at day 56 (weaning) and at day 70. (OEO; Orego-Stim Liquid, Anparo plc.). Craig et al., 2020.



Support calf weight gain

An independent trial was recently carried out at the AgriFood and Biosciences Institute (AFBI) in Northern Ireland in order to assess the efficacy of OEO (Orego-Stim Liquid, Anparo plc) on calf growth and health.

Calves fed milk replacer supplemented with the OEO additive were 2kg heavier at weaning (56 days of age) and 2.9kg heavier by 70 days of age (Fig. 1). Compared to control calves fed milk replacer with no additives, the OEO supplemented calves also had a 6.8% greater average daily gain.

When considering the benefits associated with the additional weight gain, this could result in an estimated additional 21-31kg of milk in the first lactation. The trial also reported that calves fed OEO supplemented milk visited milk feeders more often, but interestingly, whilst there was only the OEO supplement in the milk replacer, calves also visited concentrate feeders significantly more frequently than control fed calves.

The effect on cryptosporidia

A major cause of calf scour, cryptosporidia causes long term damage to the lining of the gut, impaired nutrient absorption, poor growth performance and can ultimately prove fatal. Peak shedding of cryptosporida eggs is during the first 2-3 weeks of life, so

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early intervention to prevent multiplication of this parasite which causes significant cost to the dairy industry is essential.

A recent study was conducted at the University of Reading in the UK in dairy calves from two days of age. Calves were fed either a control diet of waste milk with no supplements, or waste milk supplemented with OEO (Orego-Stim Liquid, Anpario plc) for 10 days, before being feed the same milk and concentrates to the end of the trial at 70 days of age. Faecal samples were analysed for Cryptosporidia shedding. Calves offered OEO supplemented waste milk had 62% lower levels of cryptosporidia in their faeces compared to control-fed calves and had a greater weight gain at 10 days of age, with an additional 186g of bodyweight gained per day.

Reduction in antimicrobial resistant bacteria

The composition of the 100% natural OEO based phytogenic Orego-Stim (Anpario plc) has recently been granted a UK patent for reducing antimicrobial resistant bacteria in dairy calves.

The patent was awarded following a combined and successful research programme with the University of Reading, in which trial results show a significant reduction in antimicrobial resistant E. coli in the faeces of dairy calves.

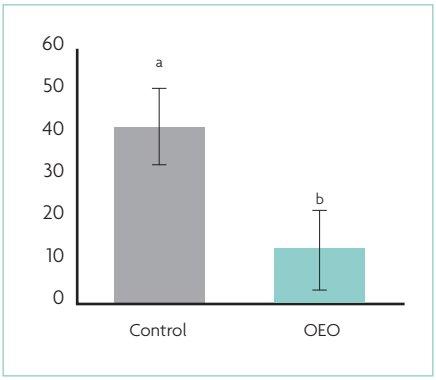

Fig. 2. Proportion of E. coli resistant to fourth generation cephalosporin antibiotics (%) in the faeces of dairy calves fed waste milk. (OEO; Orego-Stim Liquid, Anpario plc). Ray et al., 2019; [a],[b] superscripts denote differences ($p<0.001$).

Antimicrobial resistance (AMR) is a global concern, particularly when considering resistance to third and fourth generation cephalosporins, which are listed as 'Highest Priority Critically Important Antimicrobials' by the World Health Organisation.

In the trial, calves fed OEO (Orego-Stim Liquid, Anpario plc) supplemented waste milk had significantly lower levels of E. coli resistant to fourth generation cephalosporins in the faeces.In control-fed calves, 44.1% of E. coli was resistant to the antibiotic, however this was reduced to just 12.6% when the 100% OEO additive was offered (Fig. 2). Interestingly, this effect was also maintained even after OEO supplementation had stopped at 10 days of age.

Not all oregano is the same

It is well known that the essential oils from oregano plants across the world can vary widely in the content and concentration of active compounds. This variation can depend on location, soil type, climate and altitude. In other instances, synthetics can be used, however this means that the 100+ active compounds within natural oil, which work synergistically for optimal benefits, are lost.

Therefore, using a steam distilled oregano essential oil which is 100% natural is very important in ensuring the final product is consistently high quality, batch after batch.

Orego-Stim from Anpario is available as a powder or a liquid for application through the calf starter diet or milk, or via inclusion in milk replacers, offering flexibility in application to help support calf gut health and optimum lifetime performance. ■

References are available from the author on request