Oregano oil helps support health and lifetime performance

The foundations for ensuring optimum lifetime performance are laid during the first few weeks of a calf's life. This article explains one way to ensure this can be achieved.

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Pre-weaning mortality in calves is a global economic concern. Around 15% of calves do not survive past six months of age and more than 50% of calf mortality cases are associated with gut health issues and diarrhoea. Many surveys have shown that 35-40% of calves suffer from diarrhoea, which has been found to increase likelihood of mortality by up to five-fold.

Gut health issues

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

Any immunity gained from the colostrum does not protect the calf after around 14 days and it can take 3-4 weeks for the calves' own innate immunity to develop. Therefore, there is a period of time in which the calves' immune system is insufficiently developed to offer full disease protection.

There are also multiple stressful situations during this time for a calf, such as a change of housing or group size, so good management and nutrition are key to maintaining a healthy gut and ensuring optimal growth and performance.

It is now well known that higher body weights at weaning and faster average daily gain are associated with improved fertility in heifers as well as greater milk yields in the first lactation.

More recently, and not surprisingly, research has indicated that healthy calves will be more active and make more visits to feeding stations, whether for milk, forage or concentrates, compared to their sick counterparts.

One way in which calf performance can be supported is through supplementation of the daily diet with oregano essential oil.

Natural oregano essential oil (OEO) contains many active compounds that flavour feed, stimulating an olfactory response which may help with feed intakes.

There are over 100 different compounds found in natural oregano essential oil, with some of the key ones being carvacrol, ρ-cymene, β-caryophyllene, γ-terpinene and thymol.

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Fig. 1. Effect of OEO on the weight of dairy calves (Adapted from Craig et al., 2020).

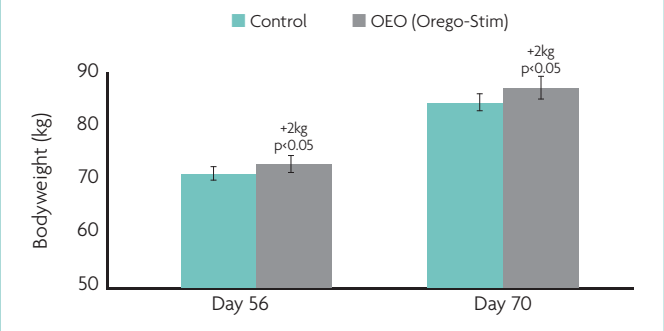
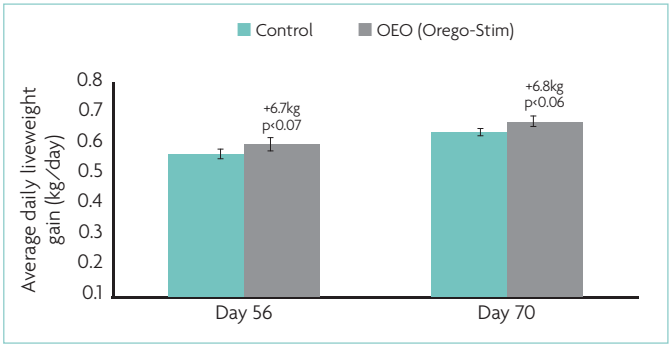


Fig. 2. Effect of OEO on the average daily liveweight gain of dairy calves (Adapted from Craig et al., 2020).



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These compounds have also been found to have anti-inflammatory, antibacterial and immunomodulatory properties. Therefore, it is vital to use the whole oil, and not synthetic compounds, to effectively support development and maintenance of a healthy calf gut.

Ensuring a diverse and well populated gut microbiome is critically important for the newborn calf if it is to achieve its genetic potential.

A recent trial carried out by the Agri-Food and Biosciences Institute (AFBI) in Northern Ireland demonstrated that supplementing the calf's daily milk feed with a 100% natural OEO source (Orego-Stim Liquid) significantly improved growth performance and increased the number of visits a calf made to the feeders.

High quality eubiotic containing 100% natural OEO

All the calves had received sufficient, high quality colostrum to ensure adequate transfer of passive immunity from mother to calf. From five days of age, the calves entered the trial and were all treated the same except for half the animals received 2ml per day of the OEO supplement added to the daily milk feed.

Milk was fed via computer controlled

feeders to a standard programme and concentrates were available ad libitum. Calf weights, visit time and number of visits were automatically recorded at both the milk and concentrate stations.

All the calves had excellent immune status and there was no issue with ill health in any calf at any point.

Calves offered the OEO supplement were 2kg heavier at weaning (56 days) and 2.9kg heavier at 70 days of age (Fig. 1). These calves also had a higher overall average daily gain of 6.8% compared to calves in the control group (Fig. 2).

In addition to the beneficial impact that OEO supplementation had on growth performance, visits to the milk feeders increased where OEO was included.

This is not surprising, particularly given the flavouring effect of OEO, but as the amount of milk fed was controlled, these calves could not consume any more milk. What was particularly interesting was that the calves fed milk supplemented with OEO then visited the concentrate feeders more often as well, taking more frequent, smaller meals, even though there was no OEO in the concentrates.

Recent research at Scotland's Rural College (SRUC) has discovered that calf activity and feeding behaviour can be used as important indicators of disease, with changes in behaviour appearing up to two days prior to visible illness. This can enable early intervention and therefore prevent losses associated with performance, cost and mortality. The research specifically highlighted that healthier calves will visit feeding stations more often, overall spending more time feeding each day.

OEO included as part of any calf rearing programme has the potential to support optimal calf health and thus lifetime performance.

Research indicates that an extra 2kg weight at weaning is worth 20-30kg of additional milk in the first lactation, giving a return on investment of 3:1 when using this particular OEO in this way.

Anpario's OEO products within the Orego-Stim Range are available as a liquid, powder and a new formulation for inclusion in milk replacers, providing flexibility in application for each and every enterprise.

To find out more information, email sales@anpario.com