Support net zero egg industry targets with oregano essential oil

As one of the fastest growing livestock sectors, egg production plays an important role in food and protein availability and as such, there is a large focus on reducing greenhouse gas emissions associated with egg production.

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Of total industry emissions, approximately 80% are from inputs and activities at layer facilities, while the remaining 20% are attributed to pullet facilities, hatcheries and breeder flock facilities. For some countries and their producers, the target is net zero.

A goal was recently set by The National Farmers Union in the UK to reach net zero egg production by 2040. Globally, farmers and egg producers are seeking ways in which to reduce their emissions and lower the carbon footprint of their eggs.

The United Nations define net zero as cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions then being re-absorbed in the atmosphere. Put simply, this means egg production systems should aim to be carbon neutral.

Whilst the overall farm model for achieving a net zero status is yet to be identified and agreed, producers will need to consider multiple factors, including manure storage, feed formulation and housing and management practices.

Feed is the largest contributor to emissions, accounting for as much as 87% of an egg producer's carbon footprint. Global sourcing of raw materials commonly incorporated within layer rations, such as soya, inevitably means feed is associated with a high carbon footprint.

Whilst there is little that the producer can do about such emissions, application of on-farm practices can have an immediate, impact on both laying hen performance and a producer's carbon footprint.

Orego-Stim, a source of 100% natural oregano essential oil (OEO) from Anpario, can help to support sustainable egg production when supplemented in layer feed or drinking water.

Reduce mortality rates

Mortality rates of below 8% are the key target for egg producers and achieving this is associated with potential emission reductions of 2.5-3.0%.

However, even a 2% reduction in overall mortality offers benefits, having been shown to reduce the egg carbon footprint by 1%.

This is because there is an increased number of productive birds during the flock cycle, resulting in a greater volume of eggs produced.

A recent commercial study found that layers supplemented with Orego-Stim had 2.2% lower cumulative mortality rates compared to the control group.

Maximise hen performance

Increasing laying rate by 5% has the potential to reduce emissions by 5%. In addition, by extending persistence of lay, as well as improving production and egg mass during early lay, the overall carbon dioxide equivalent per kilogram of eggs is greatly reduced.

Producing just a dozen extra eggs per hen can have a significant impact. In a recent European commercial study, Orego-Stim supplementation resulted in 13 extra eggs per hen (Fig. 1) and a 9% increase in overall production.

Regarding the impact of OEO on early lay performance, an additional commercial study demonstrated that supplementing diets with Orego-Stim increased egg mass during early lay (18-23 weeks) by 84%, whilst lowering cumulative mortality by 0.14%.

Recent trials conducted across six countries from 2016-2022 in both university and commercial settings reported an average increase of eight extra eggs per hen when supplemented with Orego-Stim.

Improve feed efficiency

Sources of 100% natural oregano essential oil have been shown to support gut health, which can help to improve nutrient utilisation and feed efficiency.

Whilst this does not directly lower the emissions associated with feed production, if diets are better utilised, the overall carbon emissions will be substantially reduced.

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This is particularly true for proteins, as unused protein is excreted in hen manure, increasing environmental impact due to resultant nitrous oxide emissions.

Recent analysis of results of commercial and university trials indicate that Orego-Stim supplementation reduced the amount of feed required egg produced by 11%. Based on a production system of just 10,000 hens with an average feed consumption of 110g/hen/day for 62 weeks.

This could equate to feed savings of 52.5 tonnes which not only supports producer profitability, but also reduces overall emissions associated with raw materials and feed requirements.

Poor feather cover has also been shown to decrease efficiency of feed utilisation, with poor feather coverage on the back and neck resulting in higher feed intake and low feed efficiency.

When hens lose feathers over a large part of their body the process of thermo-regulation is disrupted and energy from feed is directed to generating or expelling heat, as opposed to laying eggs.

Orego-Stim supplementation has been shown to improve feather cover by 5% and reduce feather loss in the back/vent and head/neck areas.

This is particularly important for free range flocks where hens are exposed to various weather conditions.

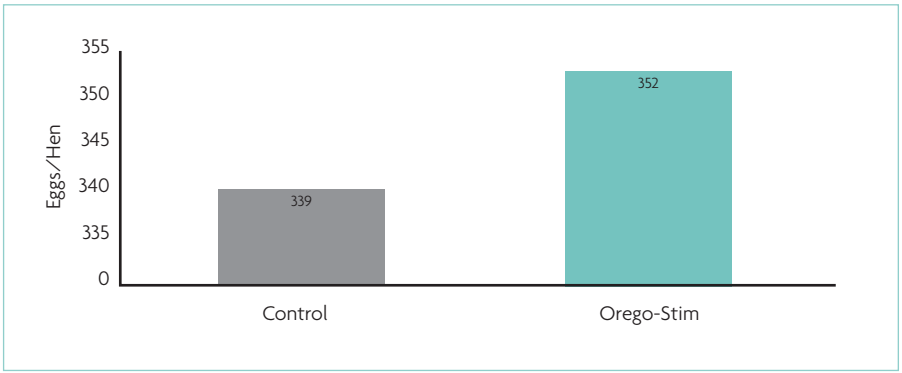

Fig. 1. Number of eggs per hen by 81 weeks of age in laying hens fed Control or Orego-Stim diets (European commercial study, 2020).

A greener future with Orego-Stim

With proven efficacy across a multitude of species, natural oregano essential oil-based feed additives, such as Orego-Stim, can provide several benefits. When produced from the whole oil up to 100 naturally occurring compounds can be present, all of which work in synergy to offer well-documented properties.

This includes antimicrobial, anti-inflammatory, immunomodulatory and antioxidant functions, all of which have a role in supporting optimal hen health and performance.

Whilst there is no single answer to lowering egg carbon footprint and net zero farm models are yet to be agreed, Orego-Stim offers both a natural and profitable solution for producers which is easy to incorporate into existing feed and water systems. Supplementation has resulted in a return on investment of 13.6:1 when fed during rearing and early lay, and a return on investment of 5.5:1 when supplemented throughout the entirety of lay.

Not only is this additive capable of boosting performance and profitability, but it is an ideal solution in supporting the future of greener, more sustainable egg production. ■