

# Sustainable poultry production with natural oregano oil

Securing health and performance of the flock throughout the production cycle reduces the need for additional management input and protects producer investment.

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The benefits of supplementing feed or drinking water with natural phytochemicals, such as oregano essential oil (OEO) are substantial. With a growing number of published trials alongside proven efficacy in the commercial environment for both broilers and layers available, confidence to use such products amongst vets, nutritionists and producers is expanding.

The current combination of rising feed prices and efforts to reduce environmental footprint demand producers to focus on driving greater feed efficiency, and together with pressure to reduce antibiotic intervention, leads experts to predict that these natural phytochemical products for use in feed and management programmes globally will only increase.

## Phytochemicals and poultry gut health

Improving gut health of all poultry species can have a direct impact on overall bird health and performance. The bird's

gastrointestinal tract plays a critical role in nutrient absorption and approximately 70% of immune cells reside within the gut. Therefore, producers who understand the importance of maintaining a healthy gut and ensuring a balanced and diverse gut microbiome, will likely benefit from optimal flock health, performance and profitability.

In addition, supporting bird health can also be beneficial in reducing the need for therapeutic antibiotics. A healthy, robust bird is far better able to deal with disease and environmental challenges, thus helping producers to reduce reliance on antimicrobials, which is of fundamental importance in the fight against antimicrobial resistance (AMR) and safeguarding the future efficacy of antibiotics.

Natural phytochemical feed additives, such as oregano, have been extensively studied and the benefits surrounding supplementation of poultry feed with essential oils are well documented. It is important to remember that there are several different types of oregano oil available, including synthetic, natural, fresh or dried varieties.

For best results it is always advisable to use a source of 100% natural oregano essential oil, as it is the synergistic action of the multitude of naturally occurring compounds within the oil which provides optimal benefits. Natural OEO contains over 100 active compounds, enabling this particular phytochemical to offer anti-inflammatory, antioxidant, anti-protozoal and immunomodulatory properties, as well as antibacterial action.



As a natural flavouring compound, OEO also helps to increase voluntary feed intakes to support performance. All of these properties help in the drive towards supporting lifetime gut health and sustainable poultry production.

## OEO supports coccidiosis control programmes

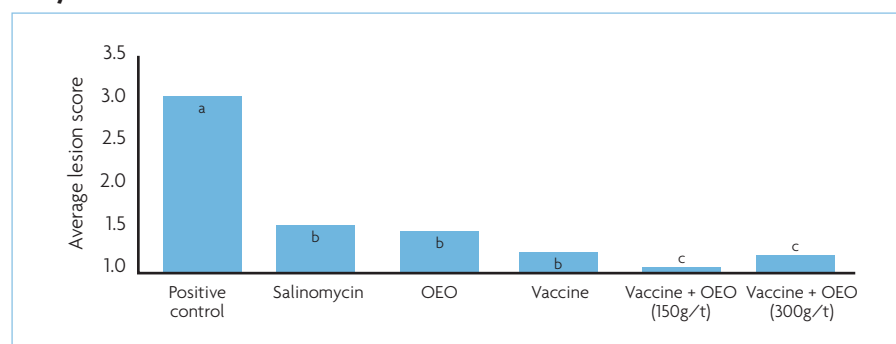
Coccidiosis is a common issue for broiler producers worldwide and in a recent published paper by Blake et al., 2020, has been estimated to result in global costs of €8.6-14.6 billion annually. Coccidiosis infection, and to a lesser extent coccidial vaccination, can create challenging conditions within the gut, leading to damage of the gut wall lining and the development of intestinal lesions.

Compromised gut health caused by coccidiosis can lead to a number of sub-clinical and clinical symptoms, including poor feed conversion ratio, slower growth rates, blood in excreta, loss of appetite and elevated flock mortality of up to 100%. Coccidiosis is also a predisposing infection to secondary diseases such as necrotic enteritis and bacterial enteritis, which was recently estimated to result in losses of €0.18 per 2.5kg broiler.

Due to the short production cycle of the broiler chicken, any inefficiencies or losses caused by coccidiosis are difficult to compensate for. Sub-clinical coccidiosis is

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**Fig. 1. Average lesion scores in broilers following Eimeria challenge (p<0.05). OEO was Orego-Stim from Anpario and vaccine was Coccivac-B52 (Southern Poultry Research Inc., 2016).**



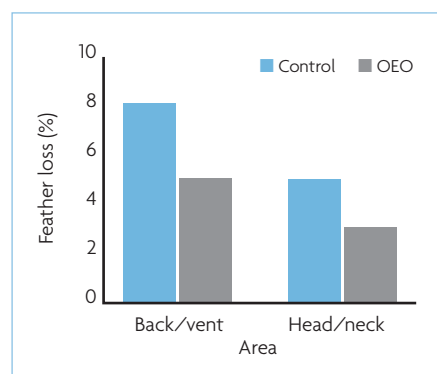
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prevalent in 100% of broiler flocks, therefore protecting gut health is a very effective way to control the negative impacts of coccidiosis and to maintain broiler performance.

Conventional coccidiosis control programmes include the use of chemicals, ionophores and vaccines, each of which come with their own challenges. However, extensive research has now been conducted to determine how phytochemicals, such as OEO, can support these programmes.

A 2016 trial conducted by Southern Poultry Research Inc in the US demonstrated that OEO (Orego-Stim, Anpario) supplementation did not interfere with anticoccidial vaccine immunity and when used on its own, or in combination with a live vaccine, birds were supported in achieving their genetic potential during a coccidiosis challenge. The trial also showed that OEO supplementation enabled low level coccidia cycling, which is essential for the development of the bird's natural immunity against coccidiosis.

**Fig. 2. Percentage of feather loss in control and OEO (Orego-Stim, Anpario) fed hens at the back/vent and head/neck.**



In addition, the results of the work conducted by Southern Poultry Research proved that OEO supplementation, in conjunction with vaccination, significantly lowered average lesion scores compared to the anticoccidial salinomycin and the positive, *Eimeria* infected control group (see Fig. 1).

Previous work has shown that OEO has a beneficial effect on gut cell turnover, thus supporting healing and repair which may help to minimise the severity of lesions commonly associated with coccidial challenge.

### More saleable eggs with OEO

Improved laying performance with OEO has been shown in a recent commercial study with Hy-Line Brown hens at a large layer farm in Western Europe.

The 2020 commercial study demonstrated that hens fed diets containing 100% natural OEO (Orego-Stim, Anpario) produced more saleable eggs per hen and had reduced flock mortality.

Hens supplemented with the non-synthetic OEO feed additive over the 66-week laying period produced 13 more eggs per hen on average and achieved a 2.2% reduction in mortality. Egg quality and grade were also improved compared to hens fed the control diet.

Results included fewer liquid, cracked and dirty eggs, providing a 1.6% increase in first class eggs and an increased number of medium and large eggs, with fewer small and peewee grades.

In addition, the hens fed diets supplemented with OEO demonstrated an improved feather cover over the whole of the bird, from the head and neck to the back and vent (Fig. 2).

Feather cover is essential to minimising

body heat loss and overall welfare and is of particular importance for free range production where hens are exposed to enhanced environmental challenges.

In this study, the beneficial combination of improved egg quality, egg numbers and larger egg weights resulted in more saleable eggs, increasing the producer's income.

The producer received a 26.9% and 21.6% higher income from extra-large and large eggs respectively, compared to the control shed. In this instance, this gave the producer an impressive return on investment of 5.5:1.

Other global studies conducted in Japan, Mexico and the US demonstrate similar benefits, with an average of four extra eggs per hen from flocks fed OEO (Orego-Stim) compared to control groups.

### OEO: naturally more profitable

The benefits associated with the improved health and performance of poultry species offered OEO can result in substantial economic benefits in today's modern production systems.

Feed additives which deliver a consistent, high-quality source of OEO provide producers with a natural, sustainable solution to support health, maintain optimum performance and boost profitability, whilst helping net zero emission targets to be met.

Natural OEO feed additives that are available as both a liquid and powder offer flexibility in application through feed or drinking water and enable producers to make an immediate, positive impact, on both poultry gut health and their carbon footprint. ■

References are available  
from the author on request