

The Impact of Dietary Supplementation with **AO-Biotics® EQE** on Productive Performance of Laying Hens Under Commercial Conditions from 23-37 Weeks of Age.

Validation Trial Greece

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- **AO-Biotics® EQE** improved the productive lifespan of the hens.
 - ~ Better egg production
 - ~ Lower cumulative mortality
- **AO-Biotics® EQE** increased the number of sellable eggs.
- **AO-Biotics® EQE** improved egg mass.

SUMMARY

DOSE OF AO-BIOTICS® EQE USED
50 g/metric ton of feed

This field trial evaluated the effect of **AO-Biotics® EQE** on production performance, egg quality, and mortality in laying hens from 23 to 37 weeks of age. Performance was compared to the farm's historical standard performance curve (Farm Standard Curve) and the Lohmann Brown Classic management guide. **AO-Biotics® EQE**-fed hens consistently outperformed both benchmarks across production and quality metrics.

VALUE

The inclusion of **AO-Biotics® EQE** in the nutritional program for laying hens contributes to the increase of the egg quality, the improvement of the flock's productivity, and the profitability of the producer.

PROTOCOL

Location:

- Thessaloniki, Greece

Duration:

- The impact of **AO-Biotics® EQE** was evaluated for 14 weeks, beginning the evaluation at week 23 of age.

Animals:

- Approximately 30,000 laying hens were involved in this validation process.
- Lohmann Brown Classic

Treatments:

- A commercial feed supplemented with **AO-Biotics® EQE** at 50 g/metric ton of feed was fed to the animals

Trial Design:

- Laying hens were fed a commercial feed supplemented with **AO-Biotics® EQE** at 50 g/metric ton. A Farm Standard Curve was calculated using historical data from the barn, where the same genetics had previously been used. Values from the management guide from the Lohmann Brown Classic were used as well for the comparisons.
- From weeks 34 to 37 of age, temperatures in the barn went up to over 30°C. Therefore, following the models and corrections from Mignon-Grasteau et al. (2015), values from the Farm Standard Curve and the Lohmann Brown Management Guide were corrected to simulate expectations under heat stress conditions.

Data Collection:

Hen production:

- Laying rate (Egg production)
- Egg weight and egg mass
- Feed intake
- Feed conversion rate

Egg quality:

- Cumulative laid eggs per hen

RESULTS

The Inclusion of **AO-Biotics® EQE** in the diet from 23 to 37 weeks of age improved layer performance and egg quality of the flocks. (*Table 1*)

AO-Biotics® EQE increased egg production by 4.5%.

- The inclusion of **AO-Biotics® EQE** showed an average of 95,7% laying rate, which is +4.1% above the farm standard curve (91.9%) and +4.8% above the Lohmann Brown management guide (91.3%). Improvements were steady throughout the trial, demonstrating EQE's capacity to sustain peak production levels. (*Figure 1*)

AO-Biotics® EQE reduced the mortality of the flock by 6.9%.

- Animals fed the **AO-Biotics® EQE** showed a cumulative mortality of 0.47% vs 0.50% in the farm standard. EQE maintained lower mortality across the period 23 to 37 weeks of age, with the difference widening after week 28. (*Figure 2*)

AO-Biotics® EQE maintained efficiency despite higher production levels, with an average feed intake of 115 g/day and an FCR of 1.95 g:g.

AO-Biotics® EQE increased egg mass by 4.5% in comparison to the Lohmann Brown management guide.

Improvements observed with the inclusion of **AO-Biotics® EQE** resulted in 4.3 more eggs laid per hen during the validation period of 23-37 weeks of age, resulting in an economic advantage (ROI of 26:1; *Figure 3; Table 2*)

CONCLUSIONS

Feeding **AO-Biotics® EQE** at 50 g/metric ton of feed from 23 to 37 weeks of age in laying hens resulted in consistent improvements across all major performance and egg quality parameters compared to both the farm standard and the management guide. Results showed the **AO-Biotics® EQE** support sustained peak production, higher egg mass, increased sellable eggs, and reduced mortality, making it a strategic tool for maximizing the profitability of the production.

RESULTS (CONTINUED)

Table 1. Mean performance and egg quality of hens fed AO-Biotics® EQE from 23 to 37 weeks of age¹.

23-37 weeks of age	EQE ²	Farm Standard Curve ³	Lohmann Brown Classic Management Guide
Cumulative mortality, %	0.47	0.50	-
Egg production, %	95.7±1.70	91.9±4.76	91.3±4.73
Egg weight, g	61.3±2.64	-	59.4±2.15
Egg mass, g	58.7±3.24	-	57.1±3.42
Feed intake, g/d	115±7.24	-	-
Feed conversion ratio, g:g	1.95±0.099	-	-
Cumulative laid eggs per hen, n	100.5	96.5	95.9
Sellable eggs, Million eggs ⁴	2.41	2.32	2.30

¹ Data are means and standard deviations for weeks 23 to 37.

² Commercial feed supplemented with AO-Biotics® EQE at 50 g/metric ton.

³ The farm standard curve was calculated using historical data from the barn, where the same genetics had previously been used.

⁴ Data standardized at 20,000 hens/group and 18 weeks under production.

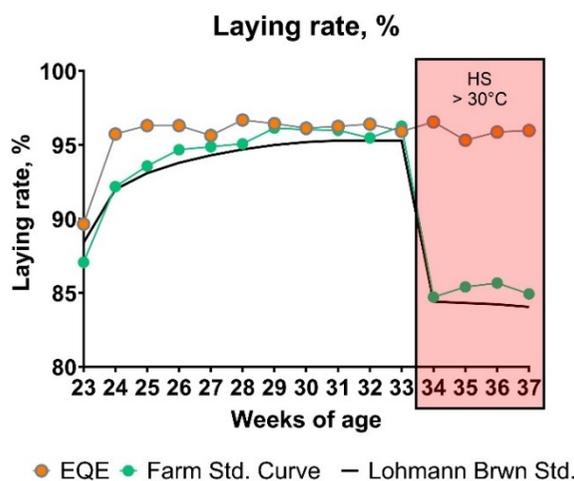


Figure 1. Impact of AO-Biotics® EQE at 50 g/ton of feed on the laying rate of hens from 23 to 37 weeks of age.

NOTE: From weeks 34 to 37 of age, temperatures in the barn went up to over 30°C. Therefore, following the models and corrections proposed by Mignon-Grasteau et al. (2015), values from the Farm Standard Curve and the Lohmann Brown Management Guide were adjusted to simulate expectations under heat stress conditions.

RESULTS (CONTINUED)

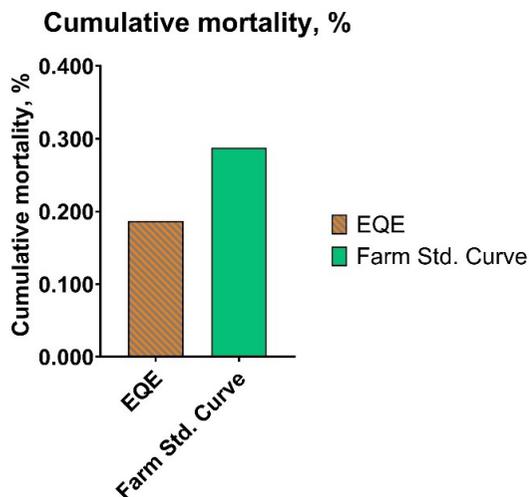


Figure 2. Impact of AO-Biotics® EQE at 50 g/ton of feed on the cumulative mortality of the flock from 23 to 37 weeks of age.

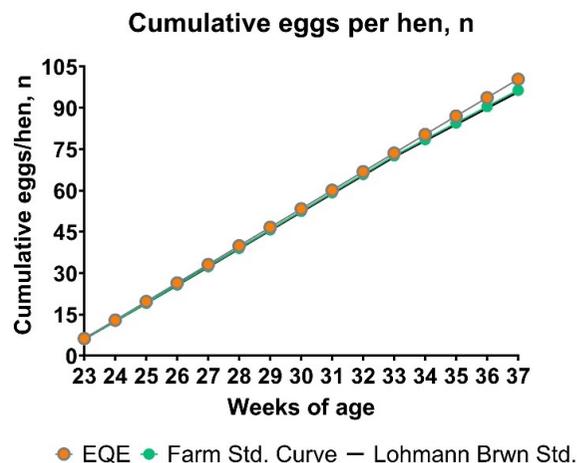


Figure 3. Impact of AO-Biotics® EQE at 50 g/ton of feed on the cumulative egg laid per hen from 23 to 37 weeks of age.

Table 2. An economic evaluation of the ROI when including AO-Biotics® EQE in the diet of hens from 23 to 37 weeks of age.¹

	Values to enter
Number of laying hens in the operation, n of laying hens	20000
Pullet price, \$	6.00 €
Weeks of age of hens at the start of the field trial, week of age	23
Total weeks of age at the end of the field trial, weeks of age	37
Mortality of the flock, % (Farm Standard Curve)	0.50%
Feed price, \$/MT	325.00 €
Inclusion price of EQE (price to end user), \$/50 g of EQE	2.00 €
ADFI, kg/d	0.115
Rate of production, % (Average from Farm Standard Curve and Lohmann Brown Management Guide)	91.6%
Number of eggs per hen on production cycle, n of eggs	96.16
Average egg weight, g	59.4
Egg price, \$/egg	0.14 €

RESULTS (CONTINUED)

Table 2. (CONTINUED) An economic evaluation of the ROI when including AO-Biotics® EQE in the diet of hens from 23 to 37 weeks of age.¹

Economical Evaluation	Control	AO-Biotics® EQE
Income from total eggs sold on the production cycle, \$	267,901.76 €	280,000.95 €
Investment costs, \$	-	-
Pullet price, \$	120,000.00 €	120,000.00 €
Feed, \$	73,255.00 €	73,705.80 €
Cost due to mortality (pullet price), \$	600.00 €	558.54 €
Total investment cost, \$	193,855.00 €	194,264.34 €
EQE Economical Evaluation		
Recommended dose of EQE, g/MT of feed	50	
Inclusion price of EQE (price to end user), \$/50 g of EQE	2.00 €	
EQE Cost in production	-	
EQE per production cycle, kg needed	11	
Inclusion cost of EQE per production cycle, \$	450.80 €	
EQE Marginal income total sold eggs on the production cycle, \$	12,099.19 €	
EQE Marginal cost, \$	409.34 €	
EQE Return, number of eggs sold, \$	11,689.85 €	
EQE Investment, \$	450.80 €	
EQE ROI (number of sold eggs)	26	

¹ Evaluation was done utilizing BioZyme's Economic Return Calculator and local market values (Greece in Euros).

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