The Impact of Dietary Supplementation with AO-Biotics® EQE on Productive Performance of Laying Hens Under Commercial Conditions from 50-81 Weeks of Age.

Validation Trial Greece
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- **AO-Biotics® EQE improved the productive lifespan of the hens.**
  - ~ **Better egg production persistence**
- **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 50 to 81 weeks of age. Performance was compared to the Lohmann Brown Classic and Lohmann LSL Classic management guides. **AO-Biotics® EQE**-fed hens consistently outperformed the 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 31 weeks, beginning the evaluation at week 50 of age.

Animals:

- Approximately 30,000 laying hens were involved in this validation process.
- Combination of Lohmann Brown Classic and Lohmann LSL 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. Values from the management guide from the Lohmann Brown Classic, Lohmann LSL Classic and an average of the values from both genetics were used for the comparisons.

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 50 to 81 weeks of age improved layer performance and egg quality of the flocks. (***Table 1***)

AO-Biotics® EQE increased egg production by 7%.

- The inclusion of **AO-Biotics® EQE** showed an average of 91% laying rate from 50 to 81 weeks of age, which is +7 % above the average value expected following the Lohmann Management Guide (85%). Improvements observed demonstrated EQE's capacity to improve the persistence of the laying during the late production phase. (***Figure 1***)

AO-Biotics® EQE maintained efficiency despite higher production levels, with an average feed intake of 116 g/day and an FCR of 1.96 g:g.

AO-Biotics® EQE increased egg mass by 4% in comparison to the average value expected following the Lohmann Management Guide.

Improvements observed with the inclusion of **AO-Biotics® EQE** resulted in 13.7 eggs more laid per hen during the validation period of 50-81 weeks of age, resulting in an economic advantage (ROI of 36:1; ***Figure 2; Table 2***)

CONCLUSIONS

Feeding **AO-Biotics® EQE** at 50 g/metric ton of feed from 50 to 81 weeks of age in laying hens resulted in consistent improvements across all major performance and egg quality parameters compared to the average values expected following the Lohmann Management Guides (Lohmann Brown Classic and Lohmann LSL Classic). Results showed the **AO-Biotics® EQE** supports the persistence of production, higher egg mass, and increased sellable eggs, 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 50 to 81 weeks of age[1].		
50-81 weeks of age	**EQE[2]**	**Lohmann Management Guides[3]**
Cumulative mortality, %	3.76	-
Egg production, %	90.7±9.72	84.6±4.97
Egg weight, g	64.7±0.460	66.6±0.611
Egg mass, g	58.7±2.25	56.3±2.81
Feed intake, g/d	116±10.9	-
Feed conversion ratio, g:g	1.96±0.200	-
Cumulative laid eggs per hen, n	203.13	189.41
Sellable eggs, Million eggs[4]	2.29	2.13

[1] Data are means and standard deviations for weeks 50-81.

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

[3] For the Lohmann Management Guides values, the average values for each parameter were calculated using the Lohmann Brown Classic and Lohmann LSL Classic Management Guides values.

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

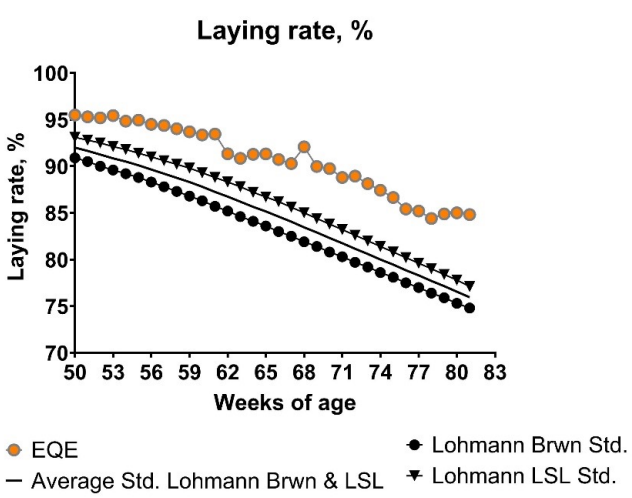

Figure 1. Impact of **AO-Biotics® EQE** at 50 g/ton of feed on the laying rate of hens from 50 to 81 weeks of age.

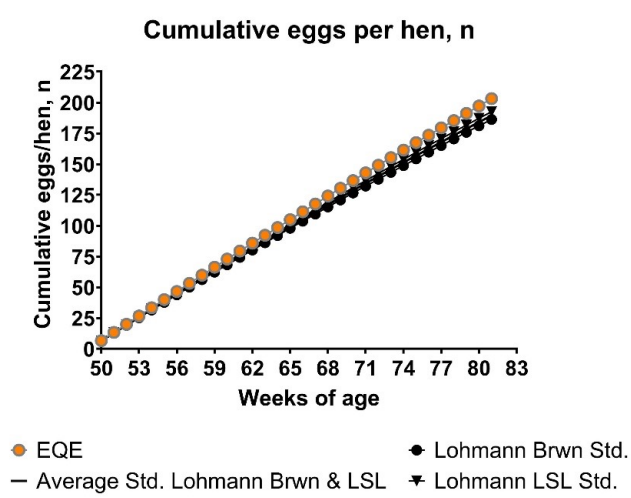

Figure 2. Impact of **AO-Biotics® EQE** at 50 g/ton of feed on the cumulative egg laid per hen from 50 to 81 weeks of age.

RESULTS (CONTINUED)

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, **$**	6.00 €
Weeks of age of hens at the start of the field trial, **week of age**	50
Total weeks of age at the end of the field trial, **weeks of age**	81
Mortality of the flock, **% (Farm Standard Curve)**	3.76%
Feed price, **$/MT**	325.00 €
Inclusion price of EQE (price to end user), **$/50 g of EQE**	2.00 €
ADFI, **kg/d**	0.116
Rate of production, **% (Average from Farm Standard Curve and Lohmann Brown Management Guide)**	84.6%
Number of eggs per hen on production cycle, **n of eggs**	189.4
Average egg weight, **g**	66.6
Egg price, **$/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, **$**	510,379.97 €	547,331.48 €
Investment costs, **$**		-
Pullet price, **$**	120,000.00 €	120,000.00 €
Feed, **$**	163,618.00 €	164,624.88 €
Cost due to mortality (pullet price), **$**	4,512.00 €	4,512.00 €
Total investment cost, **$**	288,130.00 €	289,136.88 €
EQE Economical Evaluation		
Recommended dose of EQE, **g/MT of feed**	50	
Inclusion price of EQE (price to end user), **$/50 g of EQE**	2.00 €	
EQE Cost in production		
EQE per production cycle, **kg needed**	25	
Inclusion cost of EQE per production cycle, **$**	1006.88 €	
EQE Marginal income total sold eggs on the production cycle, **$**	36,951.51 €	
EQE Marginal cost, **$**	1,006.88 €	
EQE Return, number of eggs sold, **$**	35,944.63 €	
EQE Investment, **$**	1,006.88 €	
EQE ROI (number of sold eggs)	**36**	

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

[2] For the Lohmann Management Guides values, the average values for each parameter were calculated using the Lohmann Brown Classic and Lohmann LSL Classic Management Guides values.

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