



LYSOFORTE® EXTEND dry, laying hen performance and egg quality – A successful field trial (Spain)

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Introduction

The current trial evaluated the efficacy of LYSOFORTE EXTEND dry on performance parameters and egg quality of laying hens. The trial was carried out from May to July 2017 in a commercial laying hen farm in Spain. The total number of laying hens (Lohman Brown Classic) was 27 000 and the trial period was 9 weeks (from 38 to 47 weeks of age). The laying hen diets were based on barley-wheat-soybean meal with soya acid oil as the source of added fat, and were reformulated to lower energy content keeping the minimum of total fat at 4%. Laying hen diets were supplemented with 500 g/ton of LYSOFORTE EXTEND dry from week 38. The reformulation decreased the feed cost by 3 €/ton of feed. Laying hen production parameters, egg yolk color (DSM yolk color fan) and egg size and classification were recorded.

Key Words: LYSOFORTE EXTEND, laying hens, feed reformulation, egg quality.

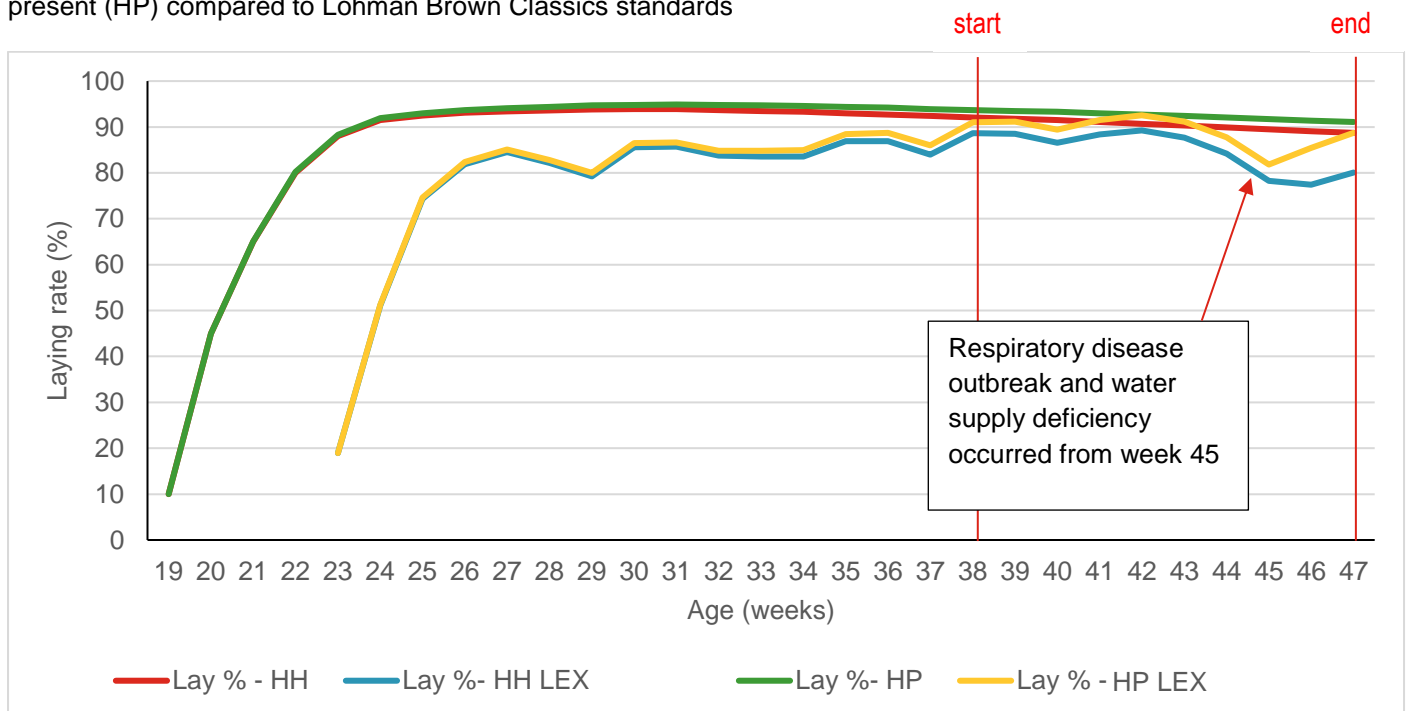
Results

Average feed consumption was 112 g/hen/day, so the average **feed cost savings (extra income) were 570 €** for the total number of animals (27 000 laying hens) and trial period (63 days).

As there was no control house to compare with, it was decided to compare with the Lohmann Brown Classic standards.

The laying rate (%) compared to Lohman Brown Classic standards is presented in figure 1.

Figure 1 – Laying rate (%) of LYSOFORTE EXTEND supplemented laying hens per hen housed (HH) and per hen present (HP) compared to Lohman Brown Classics standards



It can be observed that the treated flock started to lay eggs around 4 weeks later than suggested by the standard curves. And indeed, peak of lay did not reach the Lohmann Brown Classics genetic standards and similar laying rates were only achieved from week 41. Still, an improvement in laying % and laying homogeneity during the trial period was confirmed by the farmer. He claimed a visible improvement in laying percentage despite the very high T registered in the area (30-40°C) throughout the entire trial period. It is likely that the improved fat and nutrient digestibility elicited by the use of LYISOFORTE EXTEND helped maintain the laying rate. At week 45, a respiratory disease outbreak occurred together with a water supply deficiency, involving high mortality.

The commercial classification of eggs compared to Lohman Brown Classic standards (S, M, L and XL, %) is presented in figures 2, 3 and 4.

Figure 2 – S and M size eggs (%) of LYISOFORTE EXTEND (LEX) supplemented laying hens compared to Lohman Brown Classics standards

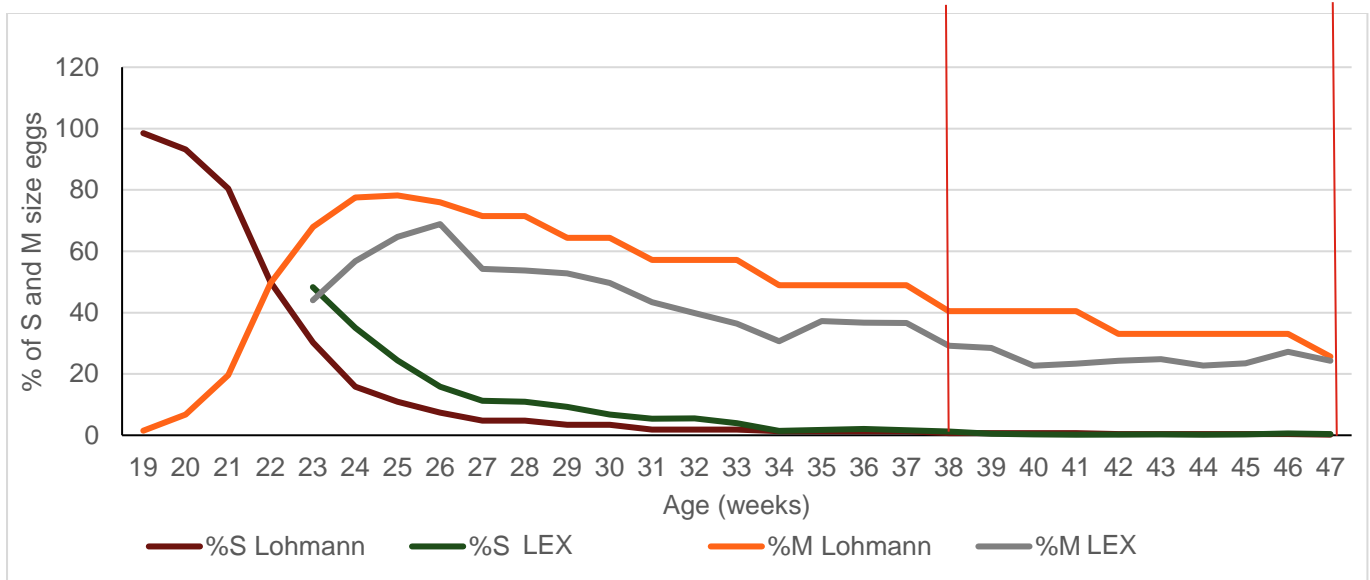


Figure 3 – L size eggs (%) of LYISOFORTE EXTEND (LEX) supplemented laying hens compared to Lohman Brown Classics standards

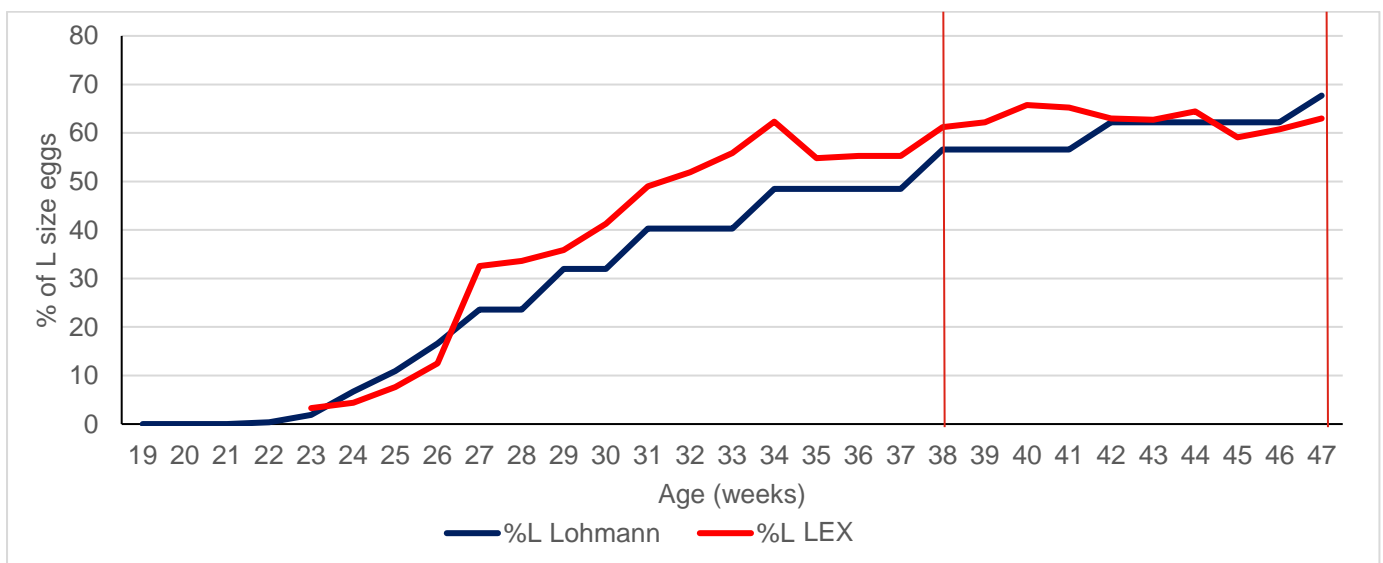
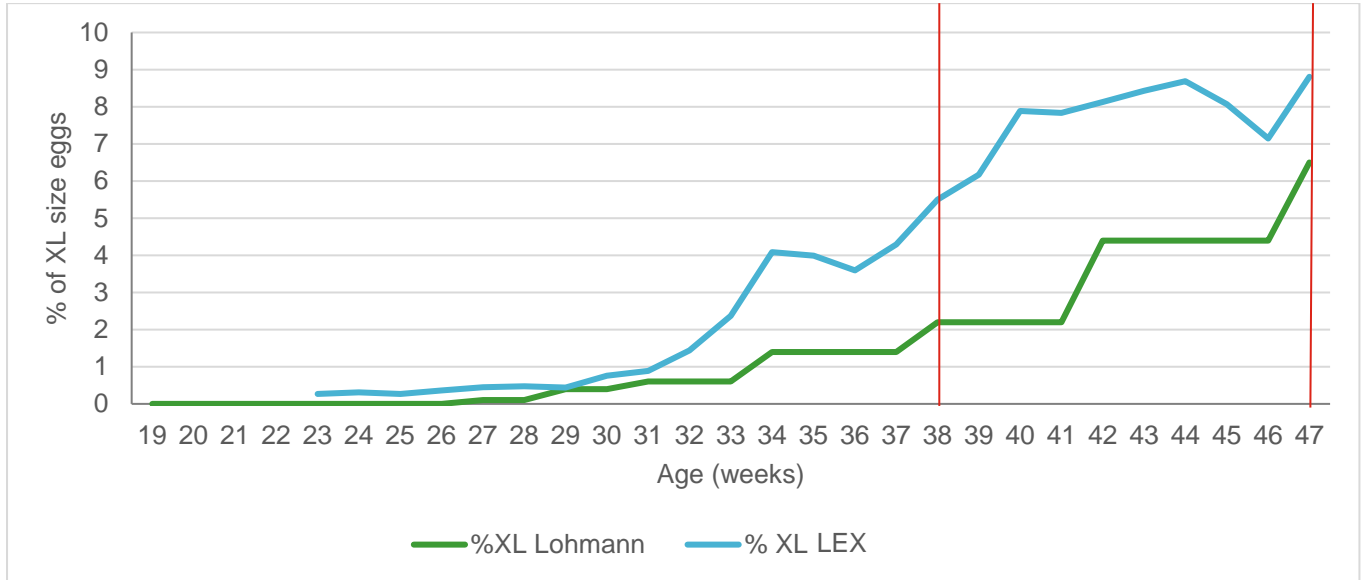


Figure 4 – XL size eggs (%) of LYISOFORTE EXTEND (LEX) supplemented laying hens compared to Lohman Brown Classics standards



Average classification and economic impact, considering a total production of 1,6 million eggs from 38 to 47 weeks of age and the following average price of eggs in 2017:

- XL (+73 g) = 1,13 €/dozen
- L (63 to 73 g) = 0,96 €/dozen
- M (53 to 63 g) = 0,85 €/dozen
- S (<53 g) = 0,63 €/dozen

	S Lohmann	S LEX	M Lohmann	M LEX	L Lohmann	L LEX	XL Lohmann	XL LEX
%	0,5	0,4	34,4	29,3	61,2	62,6	4	7,7
Eggs	7564	6542	550836	468800	978618	1001364	63709	123862
Dozens	630	545	45903	39067	81552	83447	5309	10322
€	397	343	39018	33207	78289	80109	5999	11664

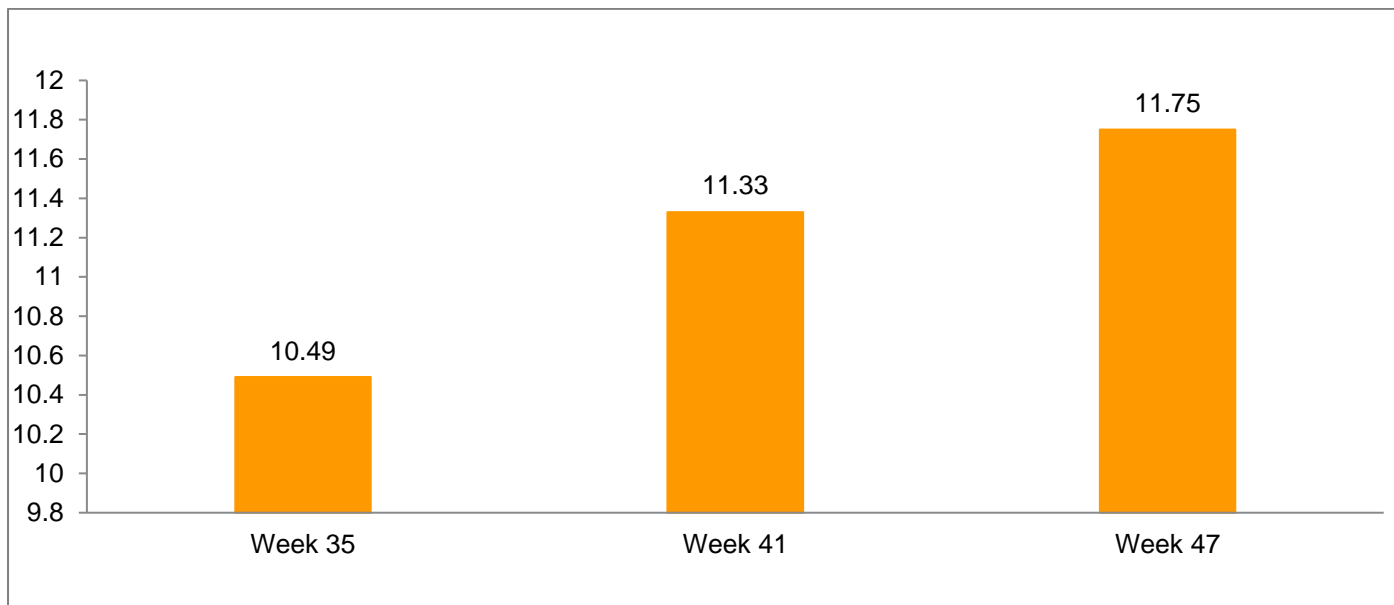
Total income Lohmann = 123.703 €

Total income EXTEND = 125.323 €

Extra income EXTEND = 1.620 €

The egg yolk color was evaluated at week 35 (before LYISOFORTE EXTEND application), at week 41 (weeks of LYISOFORTE application) and at week 47 (last week of the trial) in M size eggs with the DSM yolk color fan. The size of the sample per evaluation was a tray of 30 eggs. Results are summarized in figure 5.

Figure 5 – Egg yolk color evolution throughout the trial



The feed contained 10 ppm of yellow carotenoids and 2,8 ppm of red carotenoids (canthaxanthin). Egg yolk color was increased by 1,26 points in the DSM YCF scale (from 10,49 to 11,75). One point in the scale means approximately 1 g/ton of feed of pure canthaxanthin, so 100 g/ton of canthaxanthin premix 1%, so 1,26 points would mean 126 g/ton of canthaxanthin premix 1%. Considering a price of canthaxanthin premix 1% of 4,75 €/kg, 126 g would cost 0,6 €/ton of feed.

Implications

Savings from feed = 570 €

Extra income from eggs = 1620 €

Potential extra savings from egg yolk pigmentation = 114 €

Money invested in LYISOFORTE EXTEND = 480 €

ROI = (1620+570)/480 = 4,6

LYISOFORTE EXTEND when supplemented to laying hens at 500 g/ton feed following reformulation reduced feed cost, increased the number of XL size eggs compared to genetic standard and increased egg yolk pigmentation. The feed cost savings and extra income from eggs resulted in a ROI of 4,6. The customer has implemented the product in the whole laying hen farm and cycle.

References

LYISOFORTE EXTEND Dry and laying hen performance. A successful field trial (Spain). Kemin Internal Reference TD-17-01674