Effect of a standardised combination of carvacrol, cinnamaldehyde and C*apsicum* oleoresin (XTRACT^{tM} 6930) in a laying hen diet on laying performance and egg quality

L. MAZURANOK, C. IONESCU

Axiss France S.A.S., 2 rue des Frères Lumière 01200 Bellegarde-sur-Valserine - France

In the general context of prohibition of antibiotic use as growth promoters, plant extracts and/or their active components can be considered as alternative solutions. The trial was made on 288 Hyline W98 laying hens of 47 weeks of age divided into 2 treatments (blank diet corresponding to negative control and blank diet + XTRACT^{TM} 6930 at 100 g/t) with 8 replicates of 18 hens per treatment over 16 weeks.

When adding the combination, the laying index was numerically improved (86.03 vs. 85.31). The feed conversion ratio (FCR) was highly significantly different between the 2 treatments (- 4.7 %) in favour of the combination. The FCR per dozen eggs is also significantly reduced with the combination use (- 2.5 %).

Table 1 Laying hen performance

Parameters	Negative control	XTRACT^{TM} 6930
Laying index per present hen (%)	85,31 (± 3,82) NS	86,03 (± 4,94) NS
Feed conversion ratio	2,13 (± 0,12) A	2,03 (± 0,12) B
Feed conversion ratio per dozen eggs	1,62 (± 0,09) a	1,58 (± 0,08) b

Means (± standard error) having a different script are significantly different at $p \leq 0.01$ for a, b and $p \leq 0.0001$ for A, B
NS : not statistically different

Egg parameters were also significantly improved with the combination. There was an increased egg mass (+ 3.6 %) and egg weight (+ 2.3 %). The inclusion of XTRACT^{TM} 6930 reduced significantly the dirty egg percentage of 47.4 %. It is interesting to notice that there was no transfer from dirty egg category to the category “broken eggs or without shell”, as the latter was also improved. So it is a net egg parameter improvement.

Table 2 Egg parameters

Parameters	Negative control	XTRACT^{TM} 6930
Egg mass (g/j)	54,20 (± 2,67) A	56,17 (± 3,68) B
Egg weight (g)	63,80 (± 1,57) A	65,27 (± 1,44) B
Percentage of dirty eggs (%)	2,32 (± 1,42) A	1,22 (± 1,04) B
Broken eggs and eggs without shell (%)	2,41 (± 1,85) NS	2,26 (± 2,07) NS

Means (± standard error) having a different script are significantly different at $p \leq 0.0001$ for A, B
NS : not statistically different

XTRACT^{TM} 6930 use at 100 g/t in a laying hen diet permits a significant improvement of performance, compared to the negative control. The inclusion of this standardised combination of carvacrol, cinnamaldehyde and *Capsicum* oleoresin at 100g/t in a laying hen diet showed highly significant results with respect to the following parameters: egg mass, feed conversion ratio, egg weight and dirty egg percentage. This proves the potential interest and efficacy of this kind of combination for laying hens.