Effect of Immunovet-HBM supplementation on layer-parents' production

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Abstract
IMMUNOVET-HBM® was fed in an experimental parent layer stock in an amount of 1g/1 kg commercial mixed layer ration from the 4th until the 52nd week of age. The mortality rate was lower by 0.94 % and by 3.66% during the first 16 weeks and in the next 36 week respectively. The body weight gain was higher by 8.4% and the feed consumption higher by 1% than that of the controls. Normal commercial layer mixed feed was fed to the control group. The egg production of the experimental group was higher by 4.25 eggs/hen housed than that of the control group. The hatchability of the experimental group was also higher by 1.2% versus the control group's. The hens of the experimental group needed less feed by 7 g to produce one egg, than that of the controls (164.5 g feed versus 171.5g). The humoral antibodies were also higher against ND, IBD, EDS, AE in the experimental group than that of the controls.

Introduction
In the industrialised poultry keeping, feedstuffs, containing antibiotics are used quite often for preventive, nutritive and occasionally for therapeutical purposes. Time for permission for using antibiotics for all these purposes expires soon. It seems to be proven that antibiotics, administered for nutritive purposes play an important role in the evolving resistance of some pathogen microorganisms. Resistant strains may cause important problems when treating human beings.

Material and Methods
Feed related experiment with layer parent stocks was conducted during the growing and laying period. The experimental group consisted 9200 female and 1200 male chickens, while the control group contained 9000 female and 1200 male chickens at the beginning. At the age of 16 weeks, the bird were transferred to the laying farm, where the trial continued with 6200 hens and 630 cocks (experimental group) and 6200 hens and 620 cocks (control group). Both groups were fed ad libitum by a ration prescribed by the Tetra-SL parentstock mangement guide (Bábona, 1997). The experimental group's ration was supplemented by IMMUNOVET-HBM®, a prebiotic, practically wheat germ extract, in an amount of 1 g/1kg ration, from 4 weeks of age, during the growing and laying period (until the end of 52nd week of age). The birds were huosed in an 1100 square meter poultry growing house, on deep litter (straw) with the population density of 9.45 bird/square meter (experimental group) and 9.27 bird/square meter (control group). In the laying house one nest was provided for 5 hens. The temperature, humidity, ventilation and lighting were kept at the levels corresponding to the birds' age as set out in the technical specifications. Starter feed was fed to the animals for the first 11 weeks, grower feed between 12-19 and prelayer in the 20-21 week. From the 22nd week until the end of the experiment the flocks were fed by layer feed. Water was provided by weighted-valve drinkers, ad libitum.

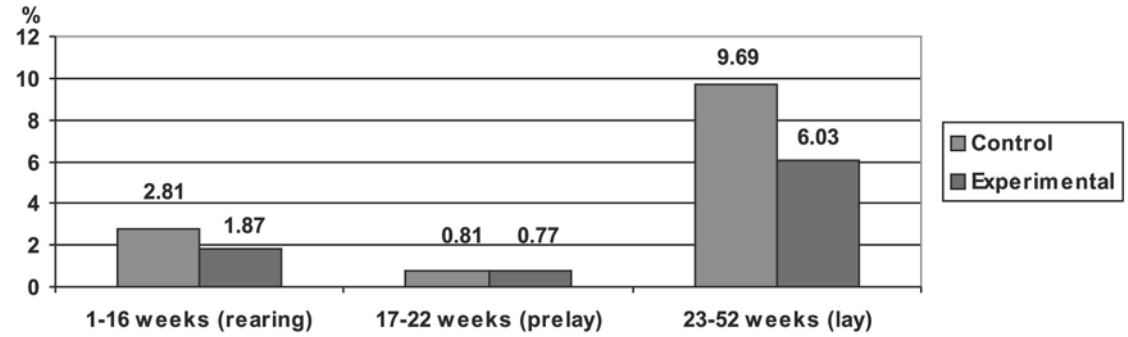
The following parameters were collected during the experiment

- mortality rate (daily),
- body weight gain (every week in the rearing period and every 2nd week in the laying period, randomly weighed 1% of birds),
- feed consumption,
- egg production,
- hatchability,
- analysis of the effects on the vacination

Results and Discussion

Mortality rate in the rearing and laying priod may be seen in Figure 1.

Figure 1. Mortality rates in the rearing- and in the laying period until the 52nd week of age



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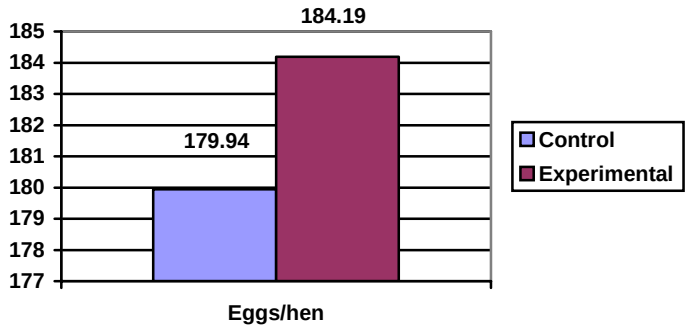
The dynamic of the body weight gain was checked by routine measuring 1% of the flocks. The average body weight at 16 weks of age was higher by 8.4% in the experimental group (1.362 g), than that of the control group (1.257 g). The calculation of the feed conversion ratio (FCR) can be seen in Table 1.

Table 1. Feed conversion ratio (FCR) on the base of the daily feed consumption in the growing period

Group	Number of day-old-chicks	Feeding days	Consumed feed (kg)	Daily feed consumption (g/day/bird)	Feed conversion ratio (FCR) (kg / kg)
Control	10 200	113	64 974	56.4	5.07
Experimental	10 400	116	68 806	57.0	4.86

The data in Table 1. show, that the daily feed consumption of experimental group was higher by 1.06% and the feed conversion ratio was lower by 4.32%, than that of the control group.
The egg production of the experimental group was 184.19/hen, while in the control group 179.94/hen. The surplus of 4.25 eggs/hen in the experimental group resulted in a 2.36% advantage.The hen-housed egg production is shown on Figure 2.

Figure 2. Egg production (hen-housed)



Better results were seen in the fertility and early embryo mortality in the experimental group, than in the control one by 1.2% and 0.1% respectively.

And last, but not least, higher serum antibody titers were found against ND, IBD, EDS, and AE as may be seen in Table 2. from the serological examinations. On the other hand, the difference was not significant between experimental and control groups in the case of APV and SHS vaccination during the experiment. The data of serology are seen in Table 2.

Table 2. The data of the serological examinations

Statistical analyses: The experimental data were evaluated by ANOVA analysis using LSD post hoc test and SPSS 7.5 Windows program package. The egg production $P<0.01$, antibody titer $P<0.5$. The mortality rate $P<0.5$.

		Age	Control	Experimental
		Weeks	Main titer	Main titer
ND	log_2	9	3,9	4,4
ND	log_2	12	3,3	4,1
ND	log_2	16	4,4	4,9
IBD	ELISA	9	5341	6856
IBD	ELISA	13	10219	10854
IBD	ELISA	16	6876	7071

		Age	Control	Experimental
		Weeks	Main titer	Main titer
ND	log_2	21	8,54	9
SHS	ELISA	21	18147	19543
SHS	ELISA	30	10437	10248
EDS	log_2	30	3,62	4,26
AE	ELISA	19-21	1277	2683

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