Russia: A Study by the All-Russian Poultry Research and Technology Institute

The All-Russian Poultry Research and Technology Institute of the Russian Academy of Agricultural Sciences had conducted a study on the use of BioAktiv Animal Feed on broilers (reported in 2012). The study involved two groups of Cobb-breed broilers from birth to 37 days old. We fed one group only the standard feed to serve as the control group, and fed the other test group the same standard feed but added 200 g BioAktiv Animal Feed per tonne of feed. The table below shows the main results of the study.

Parameter	BioAktiv	Control
Broiler weight on day 21 (g)	721.4±11.7	695.2±12.7
Broiler weight on day 37 (g)	2,169.5±22.1	2,165.8±29.5
Arithmetic mean (g):	2,166.6	2,135.5
Male (g):	2,266.7±24.9	2,278.3±16.0
Female (g):	2,066.5±12.4	1,992.7±34.1
Survival rate (%)	100	94.3
Average daily gain (g)	58.6	57.7
Feed consumed/broiler (g)	95.14	94.40
Feed conversion ratio	1.581	1.591
Number of female broilers	17	13
Number of male broilers	18	20
CO_2 concentration (%)	0.062	0.064
H_2S concentration (mg/m^3)	0.148	0.146
NH_3 concentration (mg/m^3)	1.118	1.176

The table above shows that, at three weeks old, broilers from the test group were 3.77%[1] heavier than those in the control group, despite the test group having a smaller proportion of male broilers than the control group. It is known that male broilers grow faster than female ones. This trend continued until the end of the study. The arithmetic mean weights[2] shown above have taken into account the different in the numbers of male and female broilers. At the end of the study, the broilers fed BioAktiv were 1.5%[3] heavier than the control broilers. The feed cost (FCR) for the BioAktiv group was 0.7%[4] lower than the control group. The survival rate of the BioAktiv group was 5.7%[5] higher.

[1] (721.4 – 695.2)/695.2 ≈ 3.77%
[2] Arithmetic mean = (Male weight + Female weight)/2
[3] (2,166.6 – 2,135.5)/2,135.5 ≈ 1.5%
[4] (1.591 – 1.581)/1.591 ≈ 0.7%
[5] 100% – 94.3% = 5.7%

Group	Parameters						
	Digestibility				Utilisation		
	Protein	Fat	Fibre	Ash	Nitrogen	Calcium	Phosphorus
BioAktiv	91.48	71.16	18.14	50.37	49.79	47.61	59.83
Control	89.25	69.35	14.79	43.22	45.15	40.07	49.43

The table above shows the digestibility and utilization of various nutrients measured in the study. It indicates that the adding BioAktiv Animal Feed increased the digestibility of protein, fat, fibre and ash by 2.23, 1.81, 3.35 and 7.15% respectively, and the utilisation of nitrogen, calcium and phosphorus by 4.64, 7.54 and 10.4% respectively. The results on digestibility and utilisation above correspond to the zootechnic indices indicating that adding BioAktiv Animal Feed improved the feed efficiency.

We know that poultry productivity depends on the indoor microclimate factors such as temperature and air composition. During our research the air temperature met the standard; as for the air composition, the concentration of CO_2, H_2S and NH_3 was within the acceptable level. Adding the BioAktiv additive to the broiler feed somewhat decreased the CO_2 and NH_3 concentration by 3.2 % and 5 % respectively.

Unlike in an actual farm environment, while carrying out our experiment, we did not breach any broiler farm operating standards nor allow any water to soak the manure. In actual 3-4 week broiler farms, the farmers apply dense placing of birds. Industrial layer farms are also overcrowded with hens, of which the old ones get replaced. This condition inevitably results in more serious gaseous pollution in farm facilities. Poor ventilation and water soaked manure further aggravates the situation. In such scenario, BioAktiv will certainly work more effectively.

Conclusion: The use of the BioAktiv additive increased the digestibility and utilisation of feed nutrients, and as a consequence, it increased the broiler productivity by 1.5 % and survival rate by 5.7 %, and reduced the feed cost by 0.7%. We determined the effectiveness of the additive in an environment which met all the broiler farm operating standards. In an environment which does not meet operating standards and has poor air exchange, the effectiveness will certainly be higher. Especially so in survival rate, since the mortality of fast-growing broilers is mostly caused by myocardial rupture, pulmonary oedema, etc.

Our findings allow recommending the use of BioAktiv additive in feed.

[Original report]