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Feed efficiency broilers at different levels of arginine in feeds

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Experimentally investigated nutrient digestibility and nitrogen balance in broiler chickens cross «Cobb-500" at different levels of arginine in the compound feed. Found that optimal performance nutrient feed were in broiler chickens, which used to feed the content of arginine 1.28% in the first growing period (1 - 10 days); 1.15% per second (11 - 22 days) and 1.11% in the third period (23 - 42 days). With an increase in the compound feed broiler content of arginine in the first growing period, from 1.24 to 1.30% there was a slight increase in the digestibility of crude protein and fat, respectively 0.7 - 1.7 and 0.2 - 1.1 %. Digestibility of crude fiber and FNS, during this period, did not change significantly. Elevated levels of arginine in the compound feed from 1.15 to 1.21% during the second period of cultivation and from 1.11 to 1.17% in the third, helped to reduce the digestibility of essential nutrients. In particular, the digestibility of crude protein decreased by 1,1 - 3,7% (p □ 0,05); crude fat- 1.3 - 3.3% and FNS - to 1,4 - 3,9% (p □ 0,05). In the first period of growth is nitrogen retention in the body was the highest in birds that eat feed with arginine level - 1.28%, and the second and third periods -, respectively, 1.15 and 1.11%.

Broiler chickens; feed; level of arginine; digestibility of crude protein, crude fat, crude fiber and FNS; nitrogen balance in the body

Experimentally determined digestibility of nutrients and nitrogen balance in broiler chickens cross "Cobb-500" at different levels of arginine in the fodder. Found that the best utilization of feed nutrients were observed in broiler chickens that consumed feed containing arginine 1.28% in the first period of growth (1 - 10 days); 1.15% in the second (11 - 22 days) and 1.11% in the third period (23 - 42 days).

As a result, feeding broiler chickens during the first growing animal feed containing arginine from 1.24 to 1.30% digestibility of nutrients did not change significantly.

However, digestibility of crude protein, fat and poultry FNS in the third group was slightly higher than in the other groups analogues. In particular, the digestibility of crude protein was higher than in control by 1%, crude fat and FNS - by 0.9 and 1.6%.

In the second period of growth the highest rates of nutrient digestibility of forages observed in poultry feed consumed with the lowest content of arginine - 1.15%. Thus, the digestibility of crude protein in them was higher than in the control group of poultry by 1.0%, and fat and FNS, respectively, 1.4 and 1.3%. If we compare the performance of essential nutrients digestibility in poultry second group with those of chickens third and fourth groups that consumed feed with the highest content of arginine respectively 1.19 and 1.21%, we see an even greater advantage than on control. Thus, the digestibility of crude protein was higher by 2.0%, crude fat - 1.6 - 1.7%, FNS - 2,3 - 2,9%. At the same time, chickens Broilers groups 3 and 4

birds yielded control of digestibility of crude protein 1.0%, fat - 0.2 - 0.3% and FNS - 1.0 - 1.5%.

In the third period of growing changes in digestibility were substantial. Thus, in the second group of birds digestibility of feed nutrients appeared to highest. It is ahead of bird control group on digestibility of crude protein - 2.1% (p □ 0,05), fat - and FNS1.3 - 3.3% (p □ 0,05). Compared with chickens third and fourth groups that consumed most of arginine digestibility of crude protein, fat and poultry FNS in the second group were higher respectively by 2.2 - 3.7%; 3.3 - 3.4 3.7 - 3.9%. Compared to the control group in terms digestibility of crude protein and FNS in broiler chickens third and fourth groups did not change, and the digestibility of crude fat decreased by 1.9 - 2.0%.

For data analysis digestibility of crude fiber appears that investigated factors it does not significantly affected.

The analysis of nitrogen balance in broiler chickens shows that in the first period of growth most delayed nitrogen in the body of the third group of chickens. In terms of "retained the adopted" them ahead of bird control group at 3%. In other bird groups, the figure was about the same - within 53%.

In the second period of growth observed trend of increasing nitrogen in the body laying broiler second group that consumed feed from the lowest level of arginine. By this measure, they control ahead by 4.8%. In contrast, increasing arginine levels in poultry fodder third and fourth groups led to a drop in the postponement of nitrogen in the body by 2.4%. In terms of "retained the adopted" observed the same trend - delay reduction of nitrogen in the body with increasing arginine content in the feed.

The third age period indicator postponement of nitrogen in the body of the second group of birds was also the highest - in comparison with the control group poultry by 4.9%. Preserved as a tendency to decrease nitrogen retention in the body at the same time with increasing content of arginine in the fodder.

References

1. Архипов А. В. Протеиновое и аминокислотное питание птицы / А.В.Архипов, Л.В.Топорова. – М.: Колос, 1984. – 175 с.
2. Годівля сільськогосподарських тварин / [І.І.Ібатуллін, Д.О.Мельничук, Г.О.Богданов та ін.]. – Вінниця: Нова книга, 2007. – 616 с.
3. Григорьев Н.Г. Аминокислотное питание сельскохозяйственный птицы / Н.Г.Григорьев. – М.: Колос, 1972. – 177 с.
4. К. Кале. Потребность в аминокислотах у кур мясных пород / Белковый обмен и питание (сборник материалов симпозиума Европейской ассоциации по животноводству) / перевод с английского Г.Н.Жидкоблиновой, Б.Д.Кальницкого, Д.В.Карликова, В.Б.Решетова, Н.В.Носова; под. редакцией В.Ф.Варкина, И.С.Ковальчук. – М.:Колос, 1980. – 352 с.
5. Петухова Е.А. Зоотехнический анализ кормов / [Е.А. Петухова, Р.Ф. Бесарабова, Л.Д. Халенова, О.А. Антонова]. – М.: Агропромиздат, 1989. – 239 с.

6. Подобед Л.И. Протеиновое и аминокислотное питание сельскохозяйственной птицы: структура, источники, оптимизация / Л.И.Подобед. – Днепропетровск, 2010. – 240 с.
7. Приложение: развитие и кормление бройлеров // [Електронний варіант] / Режим доступу до статті: http://cobb-vantress.com/docs/default-source/cobb-500-guides/cobb500_bpn_supp_russian.pdf
8. Рекомендації з нормування годівлі сільськогосподарської птиці за редакцією Ю.О.Рябоконя. – Бірки: Інститут птахівництва Української академії аграрних наук, 2005. – 101 с.
9. D'Mello J.P.F. Amino Acids in Animal Nutrition / D'Mello J.P.F.// CABI Publishing. – 2003. – 513 p.
10. Nutrient Requirements of Poultry / National Research Council // Washington. – 1994. – 157 p.