The Influence of the Different Levels of Crude Proteins in Feed Mixture for Pigs and Poultry and Biopolym Adition to Concentrate for Farm Building Microclimate

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Abstract
Reducing level of protein at the concentrates for pigs and poultry allowed to solve duality o fair conditions at the farme buildings. By the fattening pigs increased on 0.032 kg daily gain weight and decreased on 0.45 kg feed consumption respectively. The addition of 400 g of Biopolym increased pigs daily gain and feed consumption was reduced. At the broiler chickens by the 2.92 % les of protein decreased a mortality of chickens about 1.8% in experiment group. The others results were the same as in control group of chickens. The levels of ammonia and hydrogen sulfide were lover than maximum data from Czech norms (NH_3 max. 25 ppm and H_2S max. 7-10 ppm) at experiment and control groups.

Keywords: Biopolym, farm building microclimate, pig, poultry, true protein.

1. Introduction

The fattering of pigs and poultry must be in optimum conditions of nutrition and breeding. Bad conditions of farm building environment have influence for worse feed consumption gain weight. It is higher occurence of diseases too. Gases – amonia and hydrogen sulphide from liter bed have mainly bad influence for health and production of farm animals.
These are occured respiratory diseases at pigs and breast swelling at poultry in these bad conditions. Some meat parts must be confiscated at a slaughter house. Zeman [1] and Zelenka [2] describe optimum conditions of environment in pig breeding and poultry breeding.
Jelínek, [3] described the situation at pig and poultry halls after the additions of different biological compounds with the aim reduction of ammonia and other gasses in area and slurry reservoirs.

2. Materials and methods

We tested the influence of house gases for pigs at Agriculture Business Co-operatives A and B, C farm. We control temperature and moisture in hall. We measured levels of gases twice during of fattening 10 cm above the floor. In farm D we add the 400 gram of Biopolym to the feed mixture for pigs.
We present the same experiment with broiler chickens at Faculty Agriculture Enterprise SBU AF in České Budejovice. We had four groups with 50 chickens.
Main aim of both experiments was tested lower levels of crude proteins in the feed mixtures and their influence for feed consumption and gain weight.

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3. Results and discussion

The report of Ministry of Agriculture CR – Pork Meat [4] estimated average gain weight at pigs 630 g per day in year 1995. Podebradsky [5] write about gain weight 653 g per day at choice enterprises.

Table 1: Average nutrition consumption per kg of weight gain

	AB Cooperative A	AB Cooperative B	AB Cooperative C	AB Cooperative D
ME MJ per kg gain weight	54.47	45.41	46.72	45.72
CP g per kg of gain weight	0.647	0.505	0.511	0.509
Lys. g per kg of gain weight	0.036	0.029	0.021	0.026
Thr. per kg of gain weight	0.024	0.018	0.017	0.017

ME- Metabolizable energy, CP- True proteins Feed mixtures consumption per kg of gain weight Gain weight per pig and day

They were high differences at ME consumption per kg of weight gain (at A was consumption higher about 10 MJ ME than at the others AB Cooperatives). The daily gain at control group was 0.625 gram and experimental group 0.788 gram. Feed consumption per 1 kg daily gain was 3.4, and 3.2 kg respectively. This results are the same as knowledge of [6].

Table2: Nutriments of feed mixtures for pigs of meat hybrid (program PLEMHYB)

Categories and weights	MEp MJ/kg	Lisine g	Met+Cys g	Threonin g	Ca g	P g
After wean 15 - 35 kg	12.9	11.7	6.4	7.6	7.2	3.5
Fattening 1st phase 35-65 kg	12.8	10.2	5.6	6.6	6.5	3.0
Fattening 2nd phase 65-120 kg	12.8	8.2	4.5	4.5	6.0	2.9

MEp – metabolizable energy for pig

Table 3: Odvise values of farm building environment for pigs in program PLEMHYB

Category	Min/Max.	Optimum
Temperature		
After wean	18 28	20 22
Fattening	5 25	16 22
Number of pigs in group		
Fattening	1 100	1 22
Light (1×) Fattening	30	30 lux
Farm building gases	Maximum	Unit
CO_2	3000	ppm
NH_3	25	ppm
H_2S	7 10	ppm

The gas content in all farms are lover then norms recommendation

Table 4: Nutriments of feed mixtures for broiler chickens

Nutriments	BR 1	BR 2	BR 2 Exp.
Crude proteins (%)	22.41	20.61	17.69
Fiber (%)	3.08	3.35	3.38
ME (MJ/kg)	12.5	12.5	12.5

BR 1 – feed mixture for broiler chicken since 1st day till 21st day of age
BR 2 - feed mixture for broiler chicken since 21st day till 42nd day of age
BR 2 Exp. – experiment feed mixture

Experiment feed mixture BR 2 contained about 0.07% Lysine and 0.16% Methionine more than tradition feed mixture BR2. Mortality reduced from 2.7% at control group for 0.9% at experiment group. These were not statistical significant differences among experiment groups and control group for the feed consumption and gain weight. The results corresponded with data of [7].

Reducing level of protein at the concentrates for pigs and poultry allowed to solve duality o fair conditions at the farm buildings. By the fattening pigs increased on 0.032 kg daily gain weight and decreased on 0.45 kg feed consumption respectively. At the broiler chickens by the 2.92% les sof protein decreased a mortality of chickens about 1.8% in experiment group. The others results were the same as in control group of chickens. The levels of ammonia and hydrogen sulfide were kosher than maximum data`s from czech norms (NH_3 max. 25 ppm and H_2S max. 7-10 ppm) at experiment and control groups.

4. Conclusions

The addition of Biopolym in Feed Mixture by the fattering pigs increased on 0.032 kg daily gain weight and decreased on 0.45 kg feed consumption respectively.

At the broiler chickens the addition of Biopolym decreased a mortality about 1.8% in experimental group.

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