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THE EFFECT OF THE ZEOLITES USED IN FEEDING OF GROWING FINISHING PIGS ON SOME BIOPRODUCTIV INDICATORS

EFECTUL ZEOLIȚILOR FOLOSIȚI ÎN HRANA PORCINELOR LA ÎNGRĂŞAT ASUPRA UNOR INDICI BIOPRODUCTIVI

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The experiment was carried out over a group of 30 growing finishing pigs, allotted into two equal groups. The control group (C) received a basal diet supplemented with a 1% premix - vitamins and microelements as oxides and salts mixed with maize flour-based diet; the experimental group (E) received the same diet supplemented with 1% premix made of vitamins and microelements as chelatated phosphoric glass on zeolite based diet. At the end of our research it was revealed that group (E) obtained a better growing gain (3.36%), a 2.4 % greater feed intake and a feed conversion rate reduction of 5.6 %.

Key words: growth-finishing pig, zeolites, microelements

Introduction

Zeolites are hydrous, aluminum-silicates, crystalline substances, with a tridimensional structure, having the capacity of reversible losing or retaining of water and constitutive cations, a feature that confers specific property to absorb and to have ions exchange.

These properties and the specific chemical composition draw attention over the use of zeolites in animas food.

After more then three decades of researches and experiments regarding zeolites in animal food there came two options some authors: (2, 4, 6) believe that mixing zeolites in swine food (3 to 15%) does not influence favorable growth performances; others (1, 3, 5) show that a 3 to 5% zeolite supplementation in food determines an improvement of growth speed, increases food conversion degree, prevent the appearance of some digestive problems, reduces housing concentration of noxious gases. In this paper we've studied the utilization of zeolite from Mirşid as a base support for the obtaining of a 1% premix with chelated vitamins and microelements compared with premixes based on vitamins and microelements (obtained from salts), using ground cereal as base structure forage.

Materials and Methods

In this experiment 30 weaned growing fmishing pigs at around 100 days of age, having an inițial weight of 31-33 kg, were divided into two equal groups: the control group (C) that received a 1% premix with vitamins and mineral salts on a base diet of maise ground, and the experimental group (E) received a 1% premix with chelatated vitamins and microelements on a base diet of zeolite powder.
Vitamins supplementation level was the same for both groups, and the microelements were supplemented in accordance with the needed level for the group (C).

Chelatated minerals were provided at a 10 time smaller level to group (E) versus group (C). Throughout the experiment both groups were fed *ad libitum* with a feed mixture which provides 3160 ME Kcal/kg and 14% CP.

During the experimental period both group (C) and group (E), were haoused in the same conditions. There were done montly weighing for all pigs and it had been in view food intake during the 60 days of experiment.

Results and Discussions

The results were statistically translated and procesed, shown in the Tablesl,2,3and4. Dates from the Table 1 show that group (E) had greater weight, 75.5 kg (4%) versus group (C) 72.6 kg, but differences had not become statistically provided.

Table 1

Body weight rates for growing finishing pigs from the two groups

Age (in days)	Control group (C)			Experimental group (E)			
	n	$x \pm s_x$	V.c.	n	$x \pm s_x$	V.c.	t *
100	15	31.5±0.94	11.6	15	33±1.02	12	N.S.
130	15	49.8±1.66	12.9	15	52±1.76	13.1	N.S.
160	15	72.6±2.47	13.2	15	75.5±2.59	13.3	N.S.

In Table 2 are shown daily average gains for the two groups. The analysis of daily average gain for both groups is shown in Table 2. Statistically group (E) reached higher daily average gains, of 3.36% compared with group (C).

Table 2

Daily body gain evolution

Age (in days)	Control group (C)			Experimental group (E)			
	n	$x \pm s_x$	V.c.	N	$x \pm s_x$	V.c.	t
100	15	610±19	11.8	15	633±20	12.2	N.S.
130	15	760±26	13.3	15	783±27	13.5	N.S.
160	15	685±23	12.8	15	708±24	12.9	N.S.

Analyzing data from Table 3, there is observed that food intake of group (E), throughout the entire experiment is about 1830 kg of feed mixture, with 2.4% greater versus group (C) who's food intake was only 1873 kg. Table 4 shows that the feed

conversion rate throughout the experiment regarding group (E) is 2.87kg feed/kg live weight, with 5.6% smaller than group (C) who had a 3.04 feed conversion rate.

Table 3

Food intake evolution

Groups	From 100 to 130 days	From 130 to 160 days	From 100 to 160 days	%(E) vs. (C)
Group (C) (total food intake in kg)	799	1074	1873	
Group (E) (total food intake in kg)	790	1040	1830	97.7
Group (C) (daily medium food intake in kg)	1.78	2.39	2.08	
Group (E) (daily medium food intake in kg)	1.75	2.31	2.03	97.6

Table 4

Feed conversion rate evolution

Groups	From 100 to 130 days	From 130to 160 days	From 100 to 160 days	%(E) vs. (C)
Group (C) (food kg/gain kg)	2.91	3.14	3.04	
Group (E) (food kg/gain kg))	2.77	2.95	2.87	94.4

Conclusions

Giving to growing finishing pigs a 1% premix with a composition of chelatated vitamins and minerals as phosphoric glass on a base zeolite meal versus 1% classical premix, determined an improvement of the growth dynamic of 3.36%, an increase of food intake of 2.4% and a decrease of feed conversion rate of 5.6%.

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