The Effect of Some Forage Additives Used in Feeding of Growing Finishing Pigs

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Abstract
The experiment was carried out over a group of 50 growing finishing pigs, allotted into two equal groups. The control group (C) received a basal diet supplemented with a 2% premix – vitamins and microelements as oxides and salts mixed with maize flour-based diet; the experimental group (E) received the same diet supplemented with 2% premix made of vitamins and microelements as chelated phosphoric glass on zeolite based diet. At the end of our research it was revealed that group (E) obtained a better growing gain (12.1%), a 5.4% greater feed intake and a feed conversion rate reduction of 6.5% versus group (C).

Keywords: growth-finishing pig, zeolites, microelements .

1. 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 animals feed.
After more then three decades of researches experiments regarding zeolites in animal feed there came two options some authors: [1,2] believe that mixing zeolites in swine feed (3 to 15 %) does not influence favorable growth performances; others [3, 4, 5, 6] show that a 3 to 5% zeolite supplementation in feed determines an improvement of growth speed, increases feed 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 2 % premix with chelated vitamins and microelements compared with premixes based on vitamins and microelements (obtained from salts), using ground cereal as base structure forage.

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2. Materials and methods

In this experiments 50 weaned growing finishing at around 95 days of age, having an initial weight of 33 kg, were divided into two equal groups: the control (C) that received a 2 % premix with vitamins and mineral salts on a base diet of maize ground, and the experimental group (E) received a 2 % premix with chelated 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).
Chelated 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 % C.P.

During the experimental period both group (C) and group (E), were housed in the same conditions.
There were done monthly weighing for all pigs and it had been in view feed intake during the experiment.

3. Results and discussion

The results statically translated and procesed, shown in the Tables 1, 2, 3 and 4.
Dates from the Table 1 show that group (E) had greater weight, 84.6 kg (+7.09%) versus group (C) 79 kg, but differences had 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±S.x.	V.c.	n	X±S.x.	V.c.	t
95	25	33±0.89	13.5	25	33±0.87	13.2	N.S.
125	25	55.1±1.95	17.7	25	57±2.09	18.3	N.S.
155	25	79±2.91	18.4	25	84.6±3.21	19	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 12.1% compared with group (C).

Table 2. Daily body gain evolution

Age (in days)	Control group (C)			Experimental group (E)			
	n	X±S.x.	V.c.	n	X±S.x.	V.c.	t
95-125	25	737±25.93	17.6	25	800±25.92	16.2	N.S.
125-155	25	797±31.71	19.9	25	920±35.88	19.5	N.S.
95-155	25	767±29.59	19.3	25	860±32.34	18.8	N.S.

Analyzing data from Table 3, there is observed that feed intake of group (E), throughout the entire experiment is about 4533 kg feed mixture, with +5.4% greater versus group (C) who`s feed intake was only 4301 kg.

Table 4 shows that the feed conversion rate throughout the experiment regarding group (E) is 3.60 kg feed/live weight, with -6.5% smaller than group (C) who had a 3.86 feed conversion rate.

Table 3. Feed intake evolution in the two groups

Groups	From 95 to 125 days	From 125 to 155 days	From 95 to 155 days
Group (C) (total feed intake in kg)	1995	2306	4301
Group (E) (total feed intake in kg)	2040	2493	4533
% (E)vs. (C)	102.3	108.1	105.4
Group (C) (daily medium feed intake in kg)	2.66	3.08	2.87
Group (C) (daily medium feed intake in kg)	2.72	3.32	3.02
% (E)vs. (C)	102.3	108.1	105.4

Table 4. Feed conversion rate evolution in the two groups

Groups	From 95 to 125 days	From 125 to 155 days	From 95 to 155 days
Group (C) (feed kg/gain kg)	3.61	3.86	3.74
Group (E) (feed kg/gain kg)	3.39	3.60	3.50
% (E)vs. (C)	93.9	93.3	93.5

4. Conclusions

Giving to growing finishing pigs a 2% premix with a composition of chelated vitamins and minerals as phosphoric on base zeolite meal versus 2% classical premix, determined an improvement of the growth dynamic of 12.1%, an increase of feed intake of 5.4% and a decrease of feed conversion rate of 6.5%.

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