INFLUENCE OF LACTIFERM WS (50) PREPARATION USED AS ADDITIVE IN NUTRITION OF WEANED PIGLETS ON THE PRINCIPAL PRODUCTION INDICES

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Abstract

This paper offers an alternative to forage usage antibiotics whose biostimulative purposes use was prohibited pursuant to the phenomenon of antibiotic resistance to the consumers. As a result in this work we aimed to determine the bio effectiveness of using Lactiferm WS (50) probiotic in nutrition of piglets weaned. The biological material used was made up of triracial crossbred resulting from the crossing of four metis F1 sows with a boar Duroc breed. The 16 piglets used in to 2 groups as biological material, were selected from four sows (metis FI), with common father (Duroc breed). They were selected 4 from each sow (2 males and 2 females) seeking to have the body weight as close. Distribution on lots was made respecting gender equality. As a result of using Lactiferm WS (50) probiotic weaned piglets it is obtained a higher daily average gain with 5.39% and a bioconversion index lower with 2.79%. At the end of the experiment, piglets that received Lactiferm WS (50) in nutrition had a higher average body weight with 1.02 kg compared to the blank group, ie an average body weight increased by 3.42%. The results obtained from the use of the probiotic at weaned piglets, in this critical growth phase, show that using this probiotic helped piglets to pass better over the weaning stress, leading to easier accommodation of piglets with the new forage.

Key words: weaned piglets, probiotic, average daily consumption, weight gain.

INTRODUCTION

Modern technologies of exploitation will always seek solutions of superior fodder taking into account all factors that influence feed consumption and the balance between nutrient rations so that to ensure better the requirements determined by the biological potential of animals.

Currently, through scientific research is trying to solve some problems to help increase farm profitability.

Profitability of swine breeding is determined primarily by feeding rational, optimization of microclimate (temperature, humidity, nuisance and speed of air currents) and nutrition with testing the possibility of using growth promoters (probiotics) to remunerate the production of meat by increasing nutrition capitalization degree, growth acceleration (and velocity

of capital), ensuring better health of staff, all these to lower at maximum the production costs.

The researches have been conducted at A.F. FOFIU, Mizieş locality in Bihor county for a period of 50 days, respectively in March-May 2011.

MATERIAL AND METHOD

The biological material used was made up of triracial crossbred resulting from the crossing of four metis F1 sows with a boar Duroc breed. The sows F1 were obtained by crossing Landrace boars with sows of Large White breed. Females resulting from this cross are mated with males of Duroc breed, resulting in triracial crossbred, used as the biological material in breeding and industrial exploitation of pork for meat, with good production qualities. The 16 piglets used in 2 groups as biological material were selected from four sows (metis F1), with common father (Duroc breed). They were selected four from each sow (2 males and 2 females) seeking to have the body weight as close. Distributing the batches was made respecting gender equality.

According to the general scheme, regarding the organization of experience, it is noted that this paper wants to study the effect of using a probiotic (Lactiferm WS 50) on the main index of production of weaned piglets (young pigs).

Table 1

General scheme used throughout the experiment

Specification	**Lot 1 (M)**	**Lot 2 (experimental)**
Basic mixed fodder (% by weight)	100%	99,97%
Lactiferm WS (50) (% of weight)	-	0,03%
Total	100%	100,00%

Fodder used was prepared on the farm being identical in both groups regarding the energy and protein content and the main amino acids, differing only pursued experimental factor (the experimental group received 0.03% Lactiferm WS (50) of the portion of forage) (Table 2) .

Table 2

Mixed fodder used in weaned piglets nutrition

Specification	**Lot**	
	L1 (M)	**L2 (0,03%)**
a) Structure (% of total)		
Maze	50	50
Barley	15	15
Wheat	15	15
Groats soy	10	10

Concentrate PVM	10	10
b) Nutritional value calculated *		
Metabolisable energy	Kcal/kg	3216
Crude protein	%	16,60
Lysine	%	0,878
Methionine	%	0,421
Calcium	%	0,787
Phosphor	%	0,617

*- Tabular values INRA – 1989

Lactiferm WS (50) probiotic taken into study is a culture of lactic acid bacteria with effect of stimulating the development of nonpathogenic digestive microflora and by changing digestive pH it inhibits the proliferation of pathogenic bacteria such as Salmonella, E. Colli, etc.. In this way probiotic favors the processes of digestion, absorption and the metabolism of nutrients leading to increased of the bio-performance at monogastric animals especially the youth.

RESULTS AND DISSCUSIONS

The working techniques used were those established recommended by the literature in the field: feeding, supervision and observation of daily behavior, weighing the decade following the evolution of body weight in parallel with feed consumption. Data on the development of weight gain were statistically processed by the method of analysis of variance and the difference significance was determined by applying Test T. Piglets from each group were housed in collective boxes being respected the conditions of this technological age.

Initially the average body weight of piglets in the two groups was almost equal but the evolution during this experimental period was favored by the presence of Lactiferm WS (50) probiotic in piglets nutrition.

The differences of average weight of piglets body of the two groups were insignificant at the beginning of the experiment but after the second decade of probiotic administration these have become significant for the experimental group because in the first weeks lactic bacteria have colonized the digestive tract after which they have secured a favorable microbial balance nutrient digestion and absorption. Further probiotic had no significant effects on weight gain, which allows us to conclude that the maximum efficiency it is the first time after weaning when switching from breast milk diet based on mother's milk to combined fodder produces imbalances on digestive level.

Remarkable is that the total increase in weight realized throughout the experimental period was higher by 1.02 kg piglets in the experimental group compared with the control group (Table 3).

Table 3.

The evolution of average daily growth at weaned piglets (g)
(from the age of 50 to 100 days)

Specification		Lot		Significance
		Lot 1 (M)	Lot 2 (0,03%)	
Average daily gain between:				
51 – 60 days	g	340	381	***
	%	100,00	112,05	
61 – 70 days	g	360	375	*
	%	100,00	104,16	
71 – 80 days	g	380	396	*
	%	100,00	104,21	
81 – 90 days	g	400	423	*
	%	100,00	105,75	
91 – 100 days	g	410	417	NS
	%	100,00	101,70	
Average experimental cycle (51 – 100 days)				
	g	378	398,4	*
	%	100,00	105,39	

Lactifarm WS (50) probiotic was effective also on weight growth so that at all check weighing the calculated average daily gain was higher in piglets from the experimental group with 1.7 to 12.05% compared to the control group.

Reported to the entire experimental period the average daily gain at piglets from experimental group was 5.39% higher than the control group, which is in accordance with the data cited in the literature.

The presence of probiotic in piglets nutrition stimulated feed consumption so reported to the entire period, piglets from the experimental group registered a higher average daily consumption by 2.4% compared to the control group (Table 4).

Table 4.

The evolution of fodder consumption

Specification		Lot	
		L 1 (M)	L 2 (0,03%)
Fodder consumption during the period (in kg)			
51 – 60 days	Total consumption	106	113
	Individual average consumption	13,25	14,125
61 – 70 zile	Total consumption	116	114
	Individual average	14,5	14,25

	consumption		
71 – 80 zile	Total consumption	131	137
	Individual average consumption	16,38	17,125
81 – 90 zile	Total consumption	147	1850
	Individual average consumption	18,38	18,75
91 – 100 zile	Total consumption	151	153
	Individual average consumption	18,86	19,13
Consumption on the entire period (50 – 100 zile)			
	Total consumption	651	667
	Individual average consumption	81,375	83,375
Average daily consumption			
	Total consumption	13,02	13,34
	Individual average consumption	1,63	1,67

As might be expected the increase of digestion and absorption of nutrients accompanied by an increase in weight resulted in improving the degree of nutrition capitalization, so relation to the entire experimental period the piglets in group two had a specific lower consumption by 2.79 % compared to the control group (Table 5).

Table 5

Evolution of the bioconversion index at weaned piglets

Specification		**Lot**	
		L 1 (M)	**L 2 (0,03%)**
Bioconversion index between:			
51 – 60 days	g	3,9	3,7
	%	100,00	94,87
61 – 70 days	g	4,0	3,8
	%	100,00	95,00
71 – 80 days	g	4,3	3,9
	%	100,00	90,70
81 – 90 days	g	4,3	4,3
	%	100,00	100,00
91 – 100 days	g	4,6	4,4
	%	100,00	95,65
Average on experimental cycle (51 – 100 zile)			
51 – 100 days	g	4,31	4,19
	%	100,00	97,21

The average results of production and consumption obtained justify the and reinforce the need for Lactiferm WS (50) probiotic use in feeding piglets at least the first two weeks after weaning when they can ensure optimal microbial balance to the digestion and nutrition capitalization.

Absolute values on average daily growth and bioconversion index fall within the normal, in terms of increasing and feed utilization (Table 6).

Table 6

The average results obtained throughout the experimental cycle

Specification	Lot	
	Lot 1 (M)	**Lot 2 (0,03%)**
Average body weight		
Initial	10,05	10,02
Final	28,95	29,94
Average daily gain		
g	378	398,4
%	100,00	105,39
Average daily fodder consumption		
kg	13,02	398,4
%	100,00	105,39
Bioconversion index (consumption/kg gain)		
kg	4,31	4,91
%	100,00	97,21

CONCLUSIONS

- As a result of using Lactiferm WS (50) probiotic weaned piglets obtain a higher average daily gain 5.39% and lower bioconversion index of 2.79%.
- It is also observed an acceleration of growth rate at the end of the experiment, piglets that received Lactiferm WS (50) in the food weighing an average body weight with 1.02 kg higher than those in the control group, ie an average body weight higher by 3.42%.
- The results obtained from the use Lactiferm WS (50) probiotic at weaned piglets, reveals that using this probiotic, helps piglets pass better over stress of weaning, leading to more easy accommodation of piglets with the new feed.

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