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QUANTITY OF DEPOSITED FATTY-ACIDS IN SWINE PRODUCTS DEPENDING ON FEEDING TIME

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Introduction

The objective of our swine fattening study (HLWxHL, n=3x5x10, mixed sex, *ad libitum* feeding) was to evaluate the effect of two diets contain various amount of dietary fatty acids (induce by adding FFSB) and fed in different long time (from 40 kg LW up to slaughter at 105 kg LW, 100 days), on the fatty acid composition of swine tissues (back-fat and a part of ham, *M. semitendineus*).

Table 1.

Composition and nutrient content of diets (%)

	Control	Experimental
	diets	
Maize	10,0	10,0
Barley	66,9	56,9
E. soybean, 46%	20,0	—
Full-fat soybean (FFSB)	—	30,0
Chalk	1,0	1,0
MCP	1,0	1,0
NaCl	0,4	0,4
L-lizin-HCl	0,2	0,2
Premix	0,5	0,5
Crude protein	16,7	16,7
Ether extract	1,95	6,79
DEs, MJ/kg	13,43	14,47
Lysin	0,99	1,07
Linoleic acid (C18:2)	0,96	3,83
Linolenic acid (C18:3)	—	0,36

Table 2.

Experimental design of 100 days fattening

Treatments / Diets	1.	2.	3.
	consumption period, days		
Control	25	50	75
Experimental	75	50	25

Results

During the 100 days long fattening period the first group showed the best average daily gain (673 g/day) while the second and third groups have lower value (641–662 g/day). Feed conversation ratio was the best in the second group (2.97 kg/kg). It was 10 and 5% better as the treatment 1 and 3, respectively.

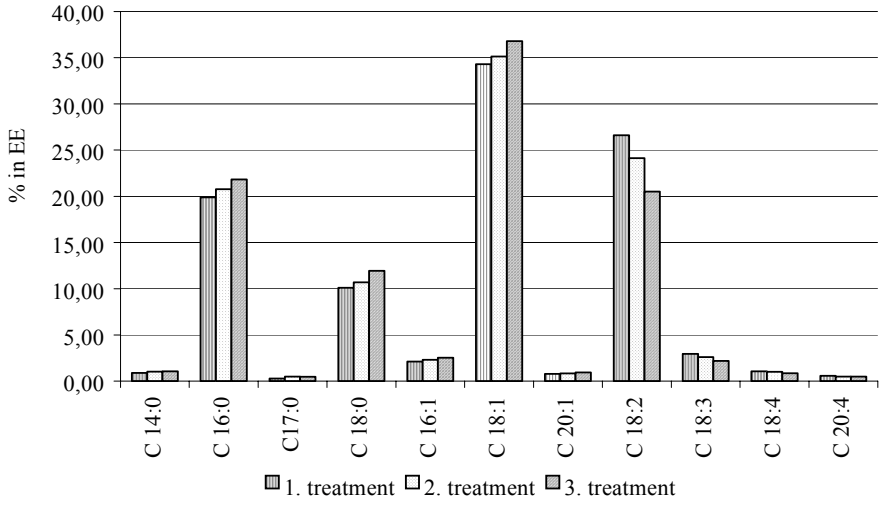

Figure 1.: Changes of the fatty-acid composition in the back-fat

Rate of linoleic acid (C18:2) decreased from 26.6% to 24.1% and 20.5% and the linolenic acid (C18:3) from 2,9% to 2.6% and 2.2% during treatments 1-3.

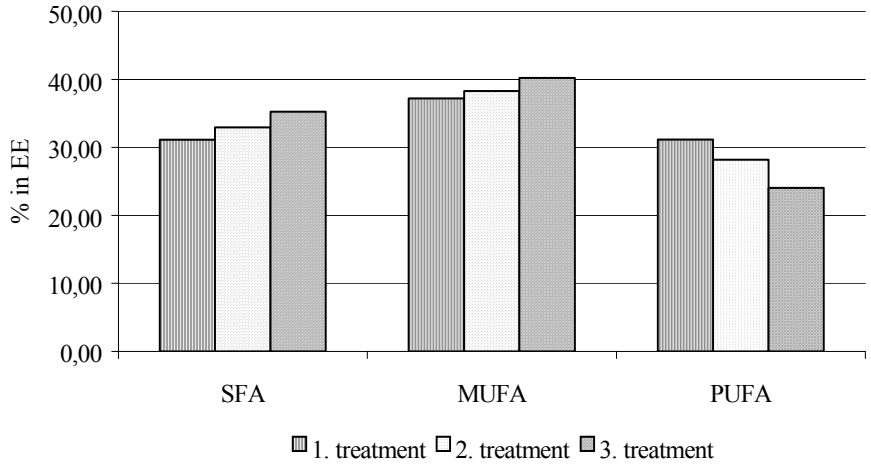

Figure 2.: Changes of the saturated(SFA) and unsaturated(MUFA, PUFA) fatty acid composition in back-fat

The quantity of SFA and MUFA in fatty acid composition of back-fat increased significantly, while the level of PUFA decreased significantly during treatments 1-3.

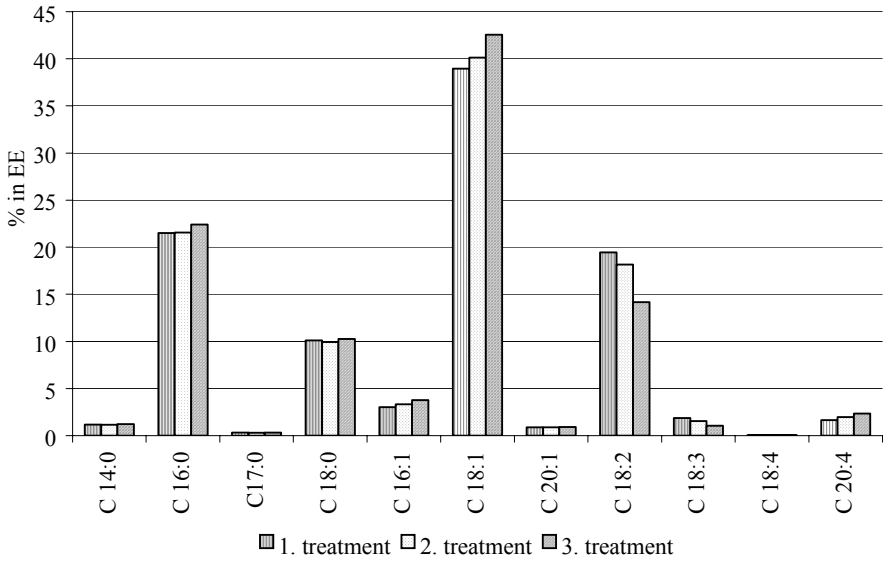

Figure 3.: Changes in fatty-acid composition of limb-tissue

Rate of C18:2 decreased from 19.5% to 18.2% and 14.2%, and the C18:3 from 1.9% to 1.6% and 1.04%.

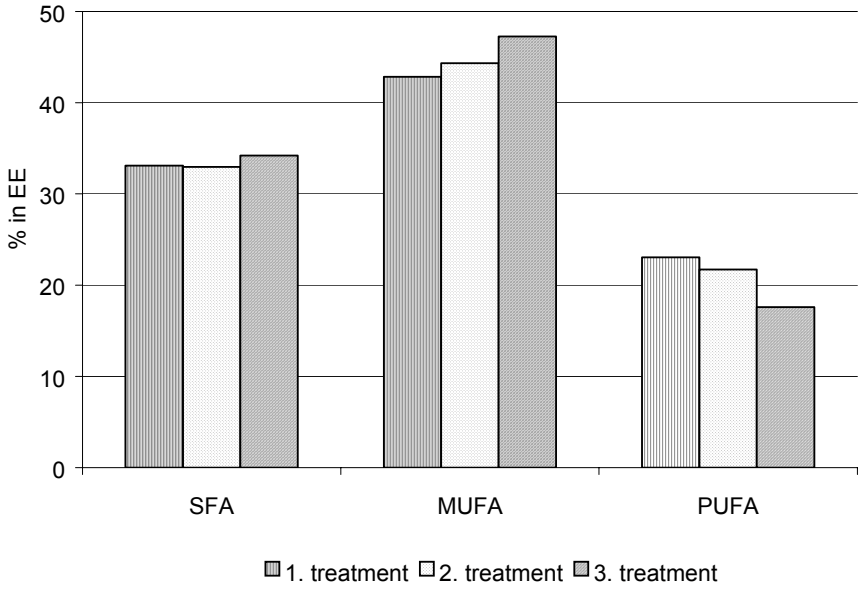

Figure 4.: Changes of the saturated(SFA) and unsaturated(MUFA, PUFA) fatty acid composition in limb-tissue

There was no change in the composition of SFA level in the limb. The level of MUFA increased significantly, while the level of PUFA decreased significantly during treatments 1-3.

Conclusion

On the basis of our experimental results it can be proved that the length of phase of fatty acid intake could influence linearly the composition of tested tissues.

We can conclude also that the 75 day long intake of FFSB, resulted the best daily gain, increased significantly the C18:2 and C18:3 contents of the intra-muscular fat and back-fat.