

EFFECT OF DIETARY SELENIUM ON MUSCLE FATTY ACID COMPOSITION IN PORK

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AIM OF THE STUDY

The aim of this study was to determine the influence of dietary selenium on the fatty acid composition of pig muscle.



Fig.: Fatty acid analyser (DANI) - carousel (photo M. Okrouhlá)

METHODS AND MATERIAL

A total of 40 pigs (HxPN) x (CLWxCL) were divided into four groups according to selenium diets. The first group was fed with organic selenium during of all test, second group was fed with organic selenium until 60 kg live weight, third group was fed with organic selenium when pigs got 60 kg live weight until the end of the test and last group had no organic selenium in diet. Amount of organic selenium was always 5 mg/kg diet. Representative muscle samples were taken from *musculus longissimus lumborum et thoracis*. They were then homogenized and submitted to FAME analysis.

RESULTS

Table: Fatty acid composition in loin (mg/100 g muscle)

Fatty acid	1	2	3	4	Signif.
C4:0	0.4	0.7	0.5	0.6	NS
C8:0	0.2	0.1	0.1	0.1	0.020
C10:0	1.4	0.8	0.7	0.7	0.047
C12:0	0.9	0.5	0.4	0.5	NS
C14:0	18.5	10.6	8.8	10.1	NS
C14:1(cis-9)	0.3	0.2	0.1	0.2	NS
C15:0	0.5	0.3	0.3	0.3	NS
C16:0	296.6	176.5	159.5	167.7	NS
C16:1 (cis-9)	54.5	30.6	26.8	33.3	NS
C17:0	2.6	1.7	1.6	1.5	0.044
C17:1(cis-10)	4.1	2.6	2.7	2.4	NS
C18:0	149.3	89.1	82.7	77.7	NS
C18:1(cis-9)	356.5	221.3	196.6	209.2	NS
C18:2(trans-9,12)	89.9	54.5	59.1	55.8	NS
C18:3(cis-6,9,12)	1.6	0.8	0.9	1.0	NS
C18:3(cis-9,12,15)	4.4	2.6	2.6	2.6	0.049
C20:0	3.1	1.6	1.9	1.4	NS
C20:1(cis-11)	12.3	6.6	7.8	6.1	NS
C20:2(cis-11,14)	3.1	1.8	2.2	1.9	NS
C20:3(cis-8,11,14)	4.0	2.4	2.8	2.6	NS
C20:4(cis-5,8,11,14)	28.7	16.8	19.2	18.1	NS
C20:5(cis-5,8,11,14,17)	0.6	0.4	0.4	0.3	NS
C21:0	1.3	0.6	0.8	0.8	NS
C22:0	0.3	0.1	0.2	0.1	NS
C22:1(cis-13)	0.1	0.1	0.1	0.0	NS
C22:2(cis-13,16)	0.5	0.3	0.3	0.3	NS
C22:6(cis-4,7,10,13,16,19)	5.3	3.1	3.6	3.4	NS
C24:0	0.8	0.3	0.7	0.4	NS
C24:1(cis-15)	1.2	0.7	1.5	0.8	0.001
SFA	476.3	283.5	258.6	262.4	NS
MUFA	429.1	262.2	235.6	252.0	NS
PUFA	138.5	82.9	91.5	86.3	NS
PUFA n-6	120.2	72.2	79.4	74.9	NS
PUFA n-3	10.4	6.1	6.7	6.4	NS
PUFA n-6/n-3	11.3	11.9	11.8	11.7	NS

CONCLUSION

The highest values of SFA, MUFA and PUFA and the lowest value of n-6/n-3 ratio were found in group supplemented with organic selenium during test. Statistically significant differences have been found in caprylic, capric, margaric, α -linolenic ($P < 0.05$) and nervonic ($P < 0.01$) acid.

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