

The change in the composition of fatty acids in pork as a function of conjugated linoleic acid (CLA) - enriched feed

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THE AIM OF THE STUDY

- To investigate the effect of high CLA content on fattening performance
- To investigate the effect of high CLA content on the fatty acid content of pork

INTRODUCTION

- The composition of fatty acids in food products is a significant factor in human health.
- The PUFA content is more beneficial from human nutritional point of view.
- Consumption of beef and pork rich in saturated fatty acids has been decreased
- Feeding can significantly influence the composition of fatty acids in the animal fat.

FATTY ACID PROFILE OF FEED

(Fatty acids in % of total fat)

Fatty acid		Sunflower oil	Ghee
Caprylic	8:0	-	0.05
Lauric	12:0	-	0.11
Myristic	14:0	0.10	0.37
Palmitic	16:0	13.70	14.96
Palmitoleic	16:1	0.10	0.19
Stearic	18:0	1.96	2.20
Oleic	18:1	30.30	30.70
Linoleic	18:2	52.40	49.70
Conjugated linoleic	18:2	-	9.18
Linolenic	18:3	1.54	1.53
Eicozeic	20:1	0.10	-

MATERIALS AND METHODS

- Feeding high CLA-content feed for pigs
- Diets were formulated to contain ghee in 4%
- Ghee contains high amount of CLA.
- 45 Hungarian Large White, mixed sex
- One pig per pen, feed intake was semi ad libitum, nipple-drinker
- Groups: 1. ghee-mixed feed for 76 days, 2. ghee-mixed feed for 33 days 3. sunflower-oil-mixed feed for 76 days

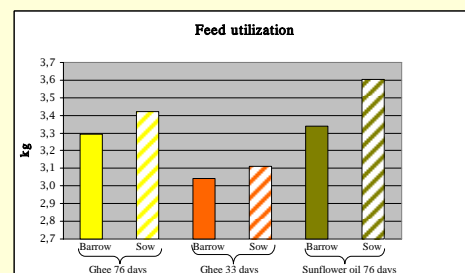
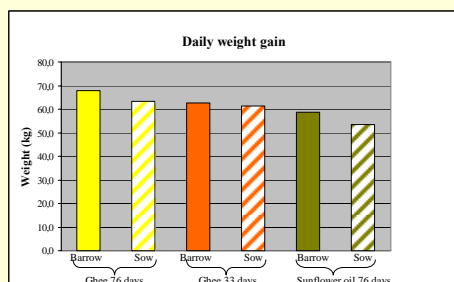
days

- Then meat samples were taken from the loin, ham, abdomen and backfat from 10 animals from each group and analysed the fatty acid content.

RESULTS

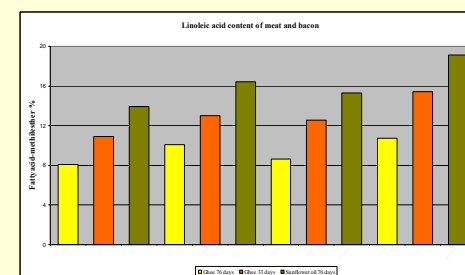
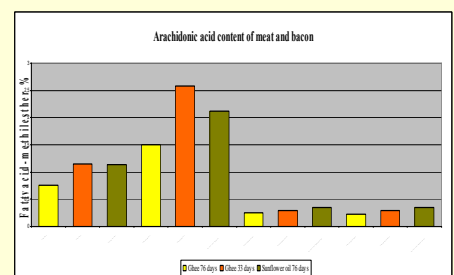
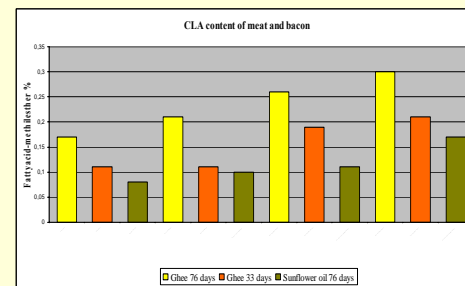
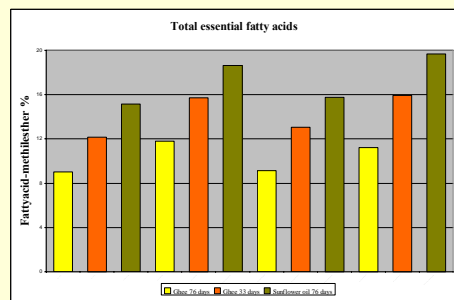
Fattening performance:

- The daily weight gain of group 1 and group 2 were significantly ($P < 0.05$) higher than group 3.
- The feed utilization of group 2 was significantly ($P < 0.05$) better compared to group 3.
- The feed intake of group 1 was significantly ($P < 0.05$) better than group 3.



Fatty acid content of pork

- The CLA content increased ($P < 0.001$) compared to group 3.
- The arachidonic acid content decreased ($P < 0.05$) compared to group 3.
- Linoleic acid quantity decreased ($P < 0.05$) compared to group 3.
- The ratio of the unsaturated fatty acids were lower compared to the control group.



CONCLUSION

The influence of the higher CLA content feeding

- increase the CLA content in the pork
- improve the daily weight gain and the feed utilization
- decrease the content of linoleic and arachidonic acids
- the ratio of the unsaturated fatty acids is lower.

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