COMPARISON OF BEEF BIOCHEMICAL COMPOSITION OF CATTLE BREEDS IN LATVIA

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INTRODUCTION

Beef production has always been part of the Latvian agricultural sector because there are much pastures and lands for production grass and feed grain.

The basis for beef production in Latvia is the universal Latvian Brown (LB) breed crossed with beef breed bulls – Hereford (HE) and Aberdeen Angus (AN).

Each breed and crosses have different production obtaining and meat quality indices.

THE AIM

To compare biochemical composition of beef obtained from crosses of cattle breeds developed in Latvia.

Investigations were carried out in Cesis region farms. Welfare requirements were ensured in these farms – free suckling cows keeping, non restricted animals feeding and watering, sufficient pastures and walk ensurance, organic origin feed providing.

METHODS

Dry matter	**drying**
Protein	**Kjeldahl**
Intramuscular fats	**Sochlet**
Fatty acids	**IDF 159:1992 (*GC*)**
Cholesterol	**Blur (*colorimetric meth.*)**
Amino acids	**HPLC (AccQ.Tag)**

The chemical analyses of 88 samples were done.

Results of bichemical analysis

Crosses	Dry matter, %	Protein,%	Fat, %	Ash,%	P, %	Cholesterol, mg%	Ratio T/O
LBxAB	21,84	19,19	1,98	1,02	0,13	74,54	3,75
LBxHE	20,55	18,60	0,98	1,00	0,12	66,67	3,17
p-value	<0.1	<0.1	<0.1	>0.1	>0.1	<0.05	>0.1

RESULTS

Composition of fatty acids of beef was not significantly different. Histidine (2.6-7.2 gkg^{-1}), asparagine (12.8-28.8 gkg^{-1}), alanine (12.9-18.6 gkg^{-1}) and tyrosine (3.6-5.8 gkg^{-1}) are most variable amino acids in samples of beef. Meat samples of crosses LBxHE has most higher histidine (0.50 gkg^{-1}) content but smaller glutamine (2.63 gkg^{-1})content, meat samples of crosses LBxAB has 0.39 gkg^{-1} and 2.93 gkg^{-1} respectively.

Figure 1. Composition of amino acids

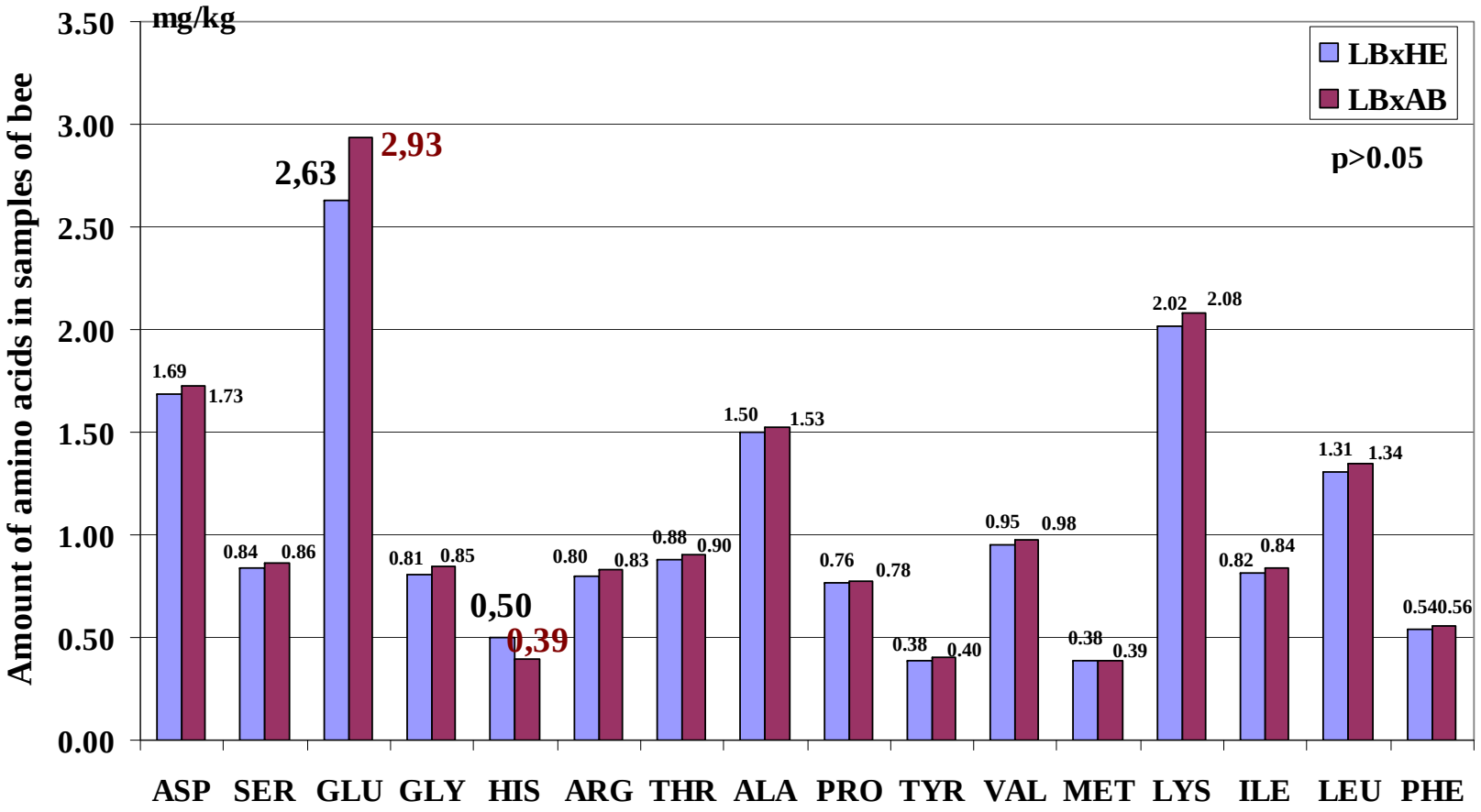
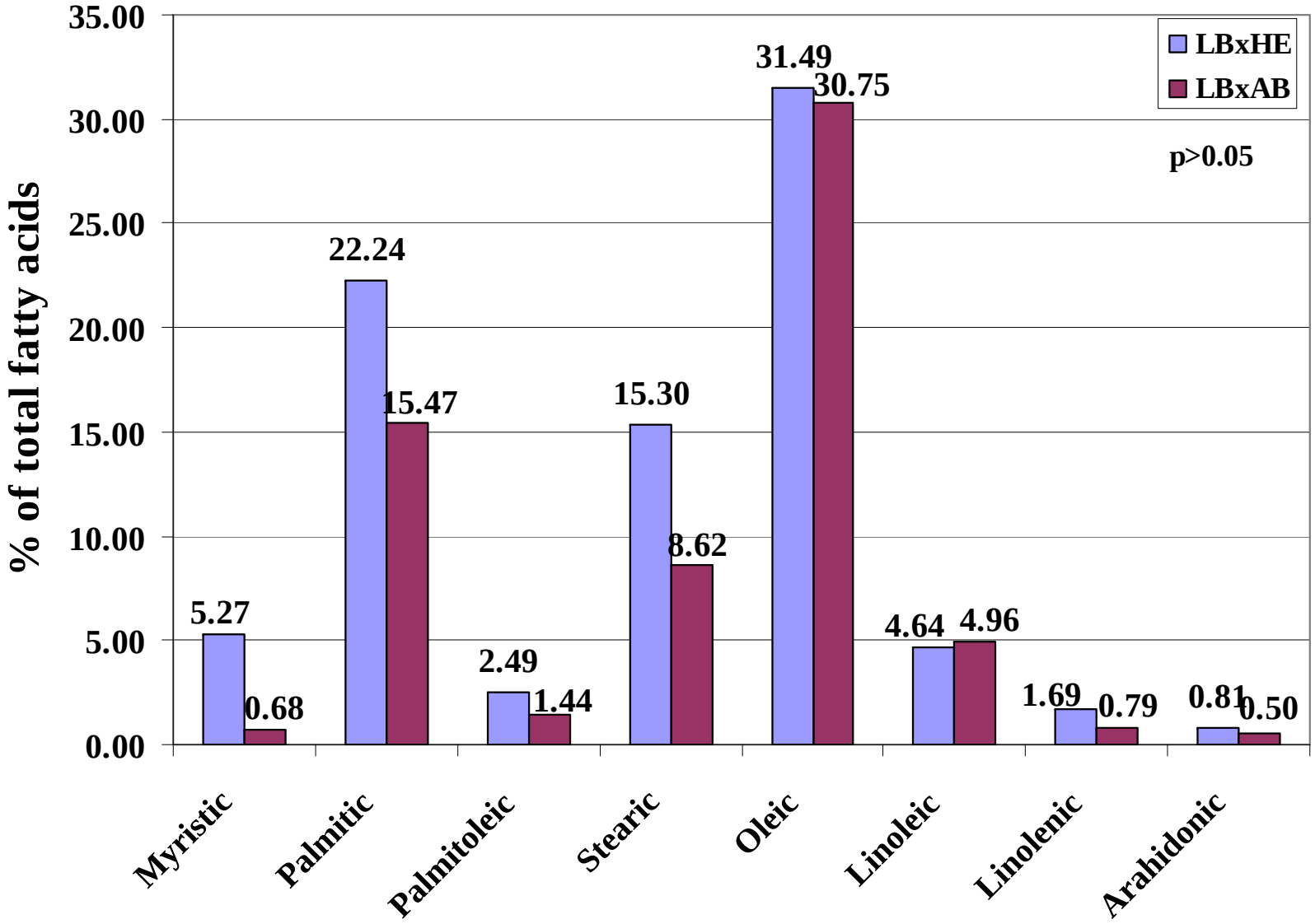


Figure 2. Composition of fatty acids



CONCLUSIONS

- **Highest dry matter, muscle protein and fat content was determinate in samples of cross LBxAB ($p<0.1$).**

- **For beef cattle breeds breeding and high quality beef obtaining the following crosses are recommended LBxAB and LBxHE.**