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# Characteristics of energetic metabolism parameters in Mangalica pig breed

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# Introduction

- 1/2 of 19th century: intensive improvement → creation new breed types of animals (consumers demand)
- Mangalica breed (from Sumadinka & local Bakony & Szalontay breed in former Ugrian territory)
- period of expansion & falls → present time: renaissance of breeding in Middle-European countries including Slovak Republic again

- farms consist of small populations (level of gene reserves) in purebred form / on the base of crossbreeding (usually Duroc)
- breed is characterized by fat utility type with slow growth & development, good health status, lower level of care needed, lower production & resistance against env. conditions

# Mangalica

- in this context → biological characteristics of breed on the level of traits and physiological properties, as well as morphological and utilization attributes is of the big importamce
- study of interior is important from the aspect of production health of organisms

- effort to  production properties is moving the parameters of interior ambient outside of the optimum
- together the request of respect of biological needs of organism arise, otherwise metabolic disorders usually comes into the place

- indicators of preclinical stages of metabolic disorders: met. profiling tests (analytical determination of conc. of metabolites of diagnostic importance)
- investigation of energetic profile parameters: important examinations from health & production aspects
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- breed genotypes represent significantly different somatic-metabolic types (different state of breeding & improvement)
- identification of reference values of metabolic profile parameters → importance in differentiation of reference interval for categorization according to age, inter-breed differences & other categories

# Material and methods

- serum parameters (TL, TC, TG, HDL-C & glucose)
- 32 pigs, 2 age categories (piglets 28–30 days old (n=24) & mature sows, 14–18 months old (n=8))
- animals from farm in the middle part of Slovakia

# Results and discussion

- Obtained results of energetic profile serum components represents different values in both investigated age categories
- Significantly  differences ($p<0,01$) in glucose levels in benefit of sucklings (7,63 and 6,33 mmol/l)
- differences ($p<0,05$) in favour of sucklings category were found also in the levels of TC (1,64 & 1,42 mmol/l) & triglycerids (0,71 & 0,42 mmol/l)

- values are significantly  in comparison to TC reference scale (2,6–3,9 mmol/l) mentioned byVrzgula et al. (1990)
- TL values were numericaly close and refer to the data mentioned by other authors

# Lipid profile parameters in different age categories of Mangalica pig breed

| Parameter | Sucklings (n=20) | | Mature Sows (n=13) | | Testing differences |
|---|---|---|---|---|---|
| | x±s | v | x±s | v | |
| Total lipids (g/l) | 5,01±0,44 | 38,83 | 5,50±0,65 | 42,32 | 0,536 ns |
| Total cholesterol (mmol/l) | 1,64±0,08 | 22,89 | 1,42±0,06 | 15,73 | 0,044* |
| HDL cholesterol (mmol/l) | 0,92±0,05 | 25,04 | 1,00±0,05 | 19,02 | 0,262 ns |
| Triglycerids (mmol/l) | 0,71±0,10 | 59,91 | 0,42±0,09 | 76,58 | 0,034 * |
| Glucose (mmol/l) | 7,63±0,31 | 18,07 | 6,33±0,34 | 19,16 | 0,008 ** |

- state of energetic metabolism and significant differences in the levels of some markers indicate disunity of metabolism in both age categories of observed genotype of pigs

# Conclusion

- energetic profile parameters analyses were performed in order to consider the interior of metabolism and comparison of values of 2age categories of Mangalica
- results correspond with literature sources in values of TL and Glu, TC showed in comparison to other authors  values

- obtained results of examinations could serve for refinement of physiological values scale & characteristics of inter-breed differences in pigs


Thank you for your attention