

**UTILIZATION OF MILK  
PRODUCTION OF  
BRACHYCEROUS RED  
CATTLE IN CARPATHIAN  
REGION**

**Buleca Jr., J., Felenczak, A.,  
Adamczyk, K., Szarek, J.**



- past few years: changes of economic conditions & influence of improvement process = changes of production requests (morphological & physiological parameters)
- example: red cattle of brachycerous type in different European territories
- W Europe (Denmark, Germany) lowland type of red cattle: improved to breeds with traits of milk utility type (angler breed & Danish red cattle)

- red cattle in Germany represent numerous breeds scale
- presented by German mountain red cattle & other local characters from the lightest type known as red harc cattle, red hessen cattle, odenwal, westfall, Bavarian, valdec, red voigtland cattle and more robust and the most numerous vogelsberg red cattle population
- Middle & Eastern Europe: high diversity of brachycerous red cattle constituted by numerous breed groups of Carpathian red cattle
- Slovak red cattle represents disappearing population around the Dunajec River
- the most numerous nowadays: Polish red cattle breed in Ma\_opolski region around the Nowy S\_cz

# Breed characteristics



- **Polish red cattle:** lighter foothill type of cattle (podgorka), lowland type of the Polish red cattle died away
- cattle characteristics: undemandingness, adaptability to environmental conditions, resistance against diseases, good fertility of cows & longevity, combined utilization
- before the year 1939: red cattle 25% of the population, later period was characteristic by reduction of their population and today they represent only cca 1% of cattle population breed in Poland



## Aim of the work

- collection of genesis & breed creation data of autochthonous red cattle breed types in European regions (mainly in Carpathian basin)
- investigation of milk production parameters: milk production, milk fat & proteins
- technological parameters: high density, short time of coagulation & high casein content in milk from Podbieskidzie area

# Material and methods



- 2 cattle herds from southern Poland (n=84) cows in first lactation
- observed milk technological parameters: % fat content, proteins, casein, solids, clotting time (s), density ( $\text{g/cm}^3$ ), cheese yield (%)
- basic milk analysis: Milko-Scan analyzer
- Protein coagulation: Storch method
- milk production data: from the database of SYMLEK system

# Results and discussion

- parameters of milk production: increasing tendency in past few years (4,000 kg of milk yearly)
- milk characteristics: \_ fat content (4.26–4.28%), \_ proteins content (3.31–3.39%)
- other milk technological properties parameters: high density, short coagulation time and high casein content
- **Felenczak *et al.*** (2003 and 2005) confirm \_ fat content, total protein and casein content in comparison to red-spotted breed
- technological properties of red cattle are also beneficial
- milk content apparently compensate lower total milk yield
- using also for breeding with ecological production
- results of milk production parameters confirm possibility of utilization of production potential of autochthonous breeds of brachycerous red cattle in different regions of Carpathian arch as well as in other parts of Europe.

# Milk performance of Polish red cows in South Poland

Year	Average milk	Fat		Protein	
	yield (kg)	kg	%	kg	%
2001	3786	161	4,26	128	3,39
2002	3965	169	4,27	132	3,33
2003	3757	161	4,28	125	3,32
2004	3894	165	4,24	130	3,33
2005	4009	171	4,26	134	3,35
2006	4028	172	4,28	135	3,34
2007	4016	171	4,26	133	3,31

# Characteristics of Polish Red Cows milk traits

<b>Traits</b>	<b>Average</b>	<b>Standard deviation</b>
Fat (%)	4,34	0,26
Protein (%)	3,39	0,18
Casein (%)	2,64	0,14
Solids (%)	13,43	0,72
Cloting time (s)	321,9	36,81
Density (g/cm <sup>3</sup> )	1,0295	0,014
Cheese yield (%)	26,47	4,12



**Thank you for your attention**