Influence of bacteria on technological parameters of dairy cow milk

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Introduction

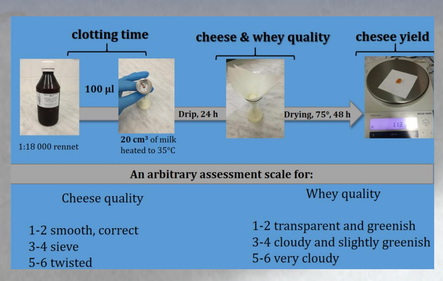
Mastitis concerns the population of dairy cattle around the world causing huge economic losses and reducing milk quality. The most common cause of the udder inflammation are pathogenic bacteria as well as the environmental and opportunistic ones

The aim

Determination of the influence of the presence of the environmental or contagious bacteria in the cow mammary gland on technological milk parameters

Methods

1. Quality of whey and cheese arbitrary assesment



2. Milk component content analysis (12 parameters) (MilkoScan FT2)

3. Somatic cell count determination (IBCm Bentley)

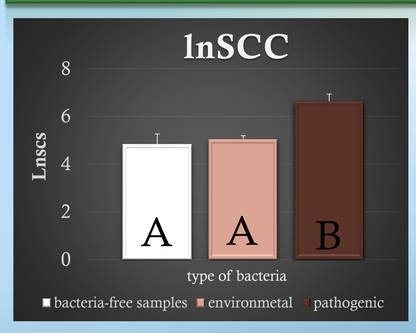
4. Microbiological analysis (Vitek 2 compact)

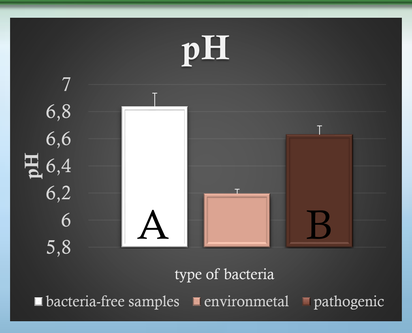
1 – bacteria-free samples (N=22)
2 – the samples with environmental and opportunistic bacteria (mainly coagulase-negative staphylococci - CNS) (N=150)
3 – the samples with major mastitic pathogens (*Staphylococcus aureus* or *Escherichia coli)* (N=39)

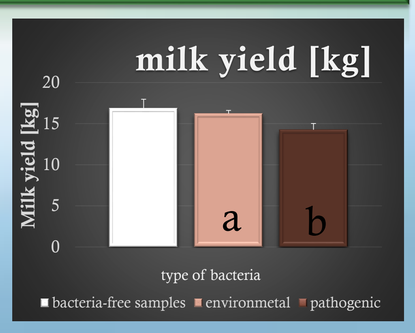
Material

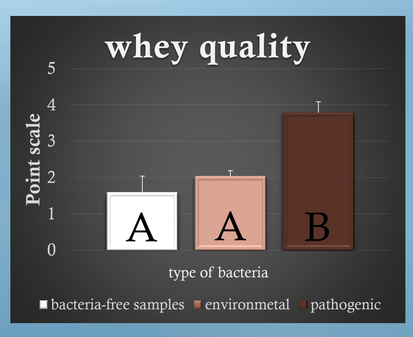
- 154 Polish HF cows of Black-and-White variety
- 211 records on daily milk yield and its components (fat, protein, casein, lactose, urea, citric acid, total solids, solids-not-fat, free fatty acids contents, density, acidity, freezing point clotting time, whey and cheese quality, and cheese yield)

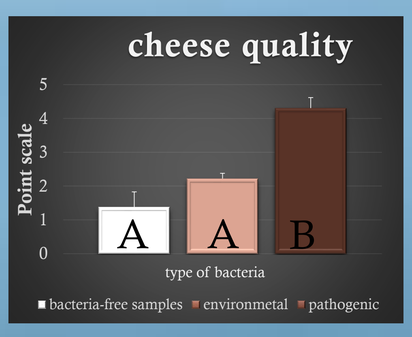
Results

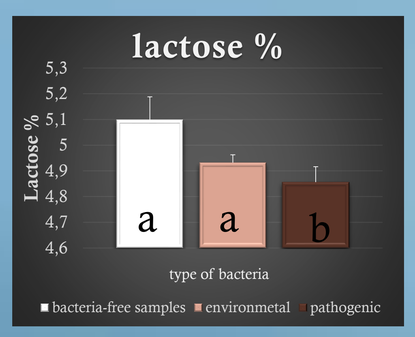




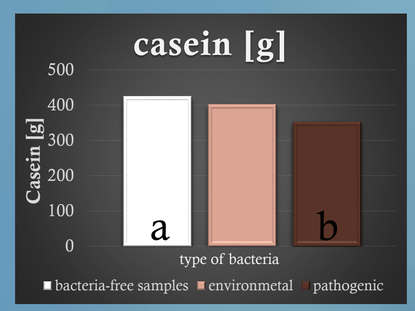








A,B – differences at ≤0,01
a,b – differences at ≤0,05



No differences in cheese yield, clotting time, pH, and most of the component contents between groups of samples were stated

Conclusions

The presence of the major mastitic bacteria negatively influences milk yield and milk technological parameters
No impact of environmental bacteria on all studied parameters was noted.
Although CNS can produce harmful and thermostable toxins, their presence may not be detected, posing a hazard to the health of consumers