Etiological agents of dairy cows’ mastitis in western part of Poland

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Abstract

The purpose of the study was to determine the etiological mastitis agents in cows from herds located in the western part of Poland in years 2003-2005. Bacteriological examinations of 18,713 samples taken from California Mastitis Test (CMT) positive quarters were performed according to standard methods. Some Gram-negative bacilli and Gram-positive cocci were examined with the use of API tests (Analytical Profile Index). It was found that 32.7% of samples that were CMT positive were culture negative and 9.3% of samples were contaminated. Streptococcus species (15.7%), coagulase negative staphylococci (CNS) (14.6%), Staph. aureus (8.6%), Gram-negative bacilli (4.0%) and Corynebacterium species (3.8%) were most frequently isolated. Escherichia coli (52.3%) dominated among Gram-negative bacilli followed by Klebsiella pneumoniae (41.1%), Pseudomonas aeruginosa (3.6%), Enterobacter cloacae (3.6%), Serratia marcescens (3.1%), Pasteurella multocida (3.1%), Acinetobacter Iwoii (3.1%), and 26 other bacteria species. Stahylococcus xylosus (31.5%), Staph. hyicus (12.2%), Staph. haemolyticus (12.2%), Staph. sciuri (11.6%), Staph. chromogenes (8.8%), Staph. epidermidis (8.3%) and Staph. simulans (6.1%) were the most frequent CNS. Streptococcus uberis (50%), Str. dysgalactiae (19.7%), Str. acidominimus (6.6%) and Enterococcus faecalis (5.3%) were mostly found among CAMP-negative streptococci. An increase in frequency of mastitis caused by non-agalactiae streptococci, Staph. aureus, A. pyogenes and yeast-like fungi and a decrease in that produced by Str. agalactiae in 2005 as compared to years 2003 or 2004 were observed.

Key words: cow mastitis, etiological agents.

Introduction

Mastitis continues to be the most frequent and expensive disease of dairy cows (Bradley 2002, Gröhn et al. 2004, Whitaker et al. 2004, Santos et al. 2004, Wilson et al. 2004, Hillerton and Berry 2005). It negatively affects the economic effectiveness of farms and the quality of milk. About 150 species of microorganisms were found as etiological agents (Watts 1988). More than 100 microorganisms species were isolated from milk samples in Poland (Klossowska and Malinowski 2001). However, the percentage of particular mastitis agents systemically changes. A strong decrease in frequency of mastitis caused by Streptococcus agalactiae as an effect of introduction of mastitis control programs, mostly DCT (dry cow therapy)