Quality of milk of cows in the first lactation vs. presence of anti-\textit{Ostertagia} antibodies in their milk

K. Liedtke\textsuperscript{1}, J. Szteyn\textsuperscript{1}, I. Białobrzewski\textsuperscript{2}, A. Wiszniewska-Łaszczych\textsuperscript{1}, E. Bednarko-Młynarczyk\textsuperscript{1}

\textsuperscript{1} Department of Veterinary Protection of Public Health, Faculty of Veterinary Medicine, University of Warmia and Mazury in Olsztyn, Oczapowskiego 14, 10-719 Olsztyn, Poland
\textsuperscript{2} Department of Agricultural Processes Engineering, Faculty of Technical Sciences, University of Warmia and Mazury in Olsztyn, Heweliusza 14, 10-724 Olsztyn, Poland

Abstract

Invasions of gastrointestinal nematodes in dairy cows may affect animals productivity. The most frequently detected internal parasite of dairy cattle is \textit{Ostertagia ostertagi}. The objective of this study was to determine \textit{O. ostertagi} invasion extensiveness in selected herds of dairy cattle, with special consideration to cows being in the first lactation, and to analyze the milk yield and contents of basic constituents of milk originating from sero-positive cows. Five herds of dairy cattle (403), with different populations of cows, were selected for the study. Invasion extensiveness in particular herds was determined and ranged from 11.9\% to 27.27\%. Cows being in the first lactation, the udder milk of which was shown to contain anti-\textit{O. ostertagi} antibodies, were producing on average 470 kg of milk annually less than cows being in the same lactation period. The analysis of results did not confirm the statistical significance of this difference, likewise it did not demonstrate any statistically significant differences in contents of fat, protein and dry matter. Despite a lack of the statistical significance a producer suffers great economic losses. The conducted study proves that the occurrence of \textit{O. ostertagi} invasion in herds of dairy cattle is a global problem and that it affects cost-effectiveness of milk production.

Key words: \textit{Ostertagia ostertagi}, ELISA, dairy cattle, milk production, gastrointestinal nematodes

Introduction

Parasitic invasions have been posing and still pose a severe problem in livestock management. Amongst gastrointestinal (GI) parasites, \textit{Ostertagia ostertagi} is the most significant pathogen of dairy cattle. GI invasions are the reasons behind a reduced growth rate of heifers and may exert negative effects on milk production. The application of antiparasitic drugs in production herds multiplies losses caused by the necessity of introducing waiting periods (Coles 2002) and management of milk that cannot be used for food purposes nor for animal feeds. \textit{O. ostertagi} is a small nematode belonging to the family \textit{Trichostrongyloide}.

Correspondence to: K. Liedtke, e-mail: katarzyna.liedtke@uwm.edu.pl