

WILL ANTHELMINTIC RESISTANCE THREATEN THE SUSTAINABILITY OF SMALL RUMINANT PRODUCTION IN THE CZECH REPUBLIC?

J. Vadlejch

Department of Zoology and Fisheries, Faculty of Agrobiology, Food and Natural Resources, Czech
University of Life Sciences Prague, Prague, Czech Republic

Gastrointestinal nematodes (GINs) are ubiquitous on pastures grazed by ruminants. Although infections caused by these parasites are mostly subclinical, they can lower the production of meat, milk and wool in livestock. In intensive farming systems, control of GINs is traditionally achieved through regular treatment with anthelmintic drugs. Many farmers have relied on chemotherapeutics as the sole control strategy for decades, but intensive use of these drugs has led to the development of anthelmintic resistance (AR). AR has already been detected in all major GIN species in farmed ruminants and this phenomenon is now widespread in many countries all over the world and poses an important factor limiting ruminant production. Because the emergence of AR is inevitable at any farm applying chemotherapeutics continuously and reversion of GINs towards anthelmintic susceptibility is unrealistic, understanding the factors promoting AR development are essential to effectively control GIN infections in the future.

In comparison to other European countries, only limited data are available concerning AR and risk factors in both Czech sheep and goat farms, and information about this topic in cattle is still lacking in the Czech Republic (CR). Based on the available data it can be concluded that AR is well established amongst sheep flocks in the CR, and the current data suggest that the problem is not less pronounced in goat herds. Resistance to the two most commonly used drug classes (benzimidazoles and macrocyclic lactones) has been detected at both Czech sheep and goat farms. Multiple AR has yet to be identified in the CR; however, dual resistance in dairy goat herds has recently been published. The questionnaire surveys on putative risk factors for AR development administered with Czech farmers revealed the specific farmers' behaviour and farm management practices as the driving factors for AR.

Anthelmintic treatment highly probably will remain the cornerstone tool for controlling GIN infections in the near future, so measures are required to preserve the efficacy of anthelmintics. AR may strongly affect the profitability of small ruminant production in the CR and globally if the current strategies of parasite control continue. Dairy goat and sheep farms will presumably be the most severely affected due to the limited number of drugs applicable in lactating animals. Results of questionnaire surveys confirm the urgent need of implementing modern integrated parasite control measures in the farm management. However, dissemination of current knowledge about AR and sustainable parasite control amongst stakeholders will be challenging.