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PARASITOLOGICAL CHALLENGES FOR THE VETERINARY CATTLE PRACTITIONER

Starting from birth onwards infections with parasites can threaten ruminant health and can cause (severe) losses for farmers. Since most veterinary practitioners encounter many of these parasites on a daily basis, for example by treating calves with *Cryptosporidium* or monitoring herd health through bulk-milk ELISA's, we consider it useful to discuss a broad spectrum of parasites that are endemic in the Netherlands and their currently available diagnostics[1].

In order of first appearance throughout cattle life we will, although shortly, mention pathogenicity and lifecycles of *Cryptosporidium parvum*, *Giardia* spp, *Eimeria* spp. All these are protozoan causes of gastro-intestinal disease in early life of calves. Thereafter we will discuss pathogenic nematodes such as the gastro-intestinal trichostrongylids and cattle lungworm. Also the trematode *Fasciola hepatica* and the protozo *Neospora caninum* will be covered. Finally we will deal with potential hazards of a relatively new parasite called *Toxocara vitulorum* and the possible "emergence" of the rumen fluke.

Fortunately all kinds of diagnostic tests (for example fecal based, serum or bulk-milk ELISAs) are available at different commercial diagnostic laboratories or even in your own veterinary practices[2]. These diagnostic tests are able to identify infections with the above mentioned parasites. For many pathogens there are several diagnostic test options, so which test in which setting should you choose? These decisions of course depend on the age of the cows, the season, epidemiology of the parasite and implemented management strategies and are therefore farm specific. Sometimes a quantitative result is much preferred and for other decisions it is enough to know that the parasite is there (antigen) or perhaps was there (antibodies), just in a strictly qualitative manner. Performing very regular parasitological diagnostics in order to decide how to approach a certain disease, or for monitoring purposes in general are good management decisions[3]. However, not every diagnostic test that is commercially available is desirable for every farm and sometimes diagnostic testing, for example during a particular season, is not useful at all. In this presentation, for the purpose of the discussion, practical examples will be given to illustrate the use of certain diagnostic tools and the subsequent decisions for parasite farm management. Diagnostic tests either as a tool to decide whether to use anthelmintics (monitoring) or performing anthelmintic efficacy testing can be called sustainable veterinary medicine since anthelmintic resistance development is a factor that should be taken into account[4]. Although sometimes blind anthelmintic treatments are still indicated, after performing diagnostics no herd treatment or only treatment of specific age groups is apparently necessary.

References

1 Sekiya, M, Zintl A, Doherty, ML. Bulk milk ELISA and the diagnosis of parasite infections in dairy herds: a review. Ir Vet J.2013; 66: 14.
2 Ballweber LR. Diagnostic Methods for Parasitic Infections in Livestock. Veterinary Clinics of North America: Food Animal Practice. 2006; Vol. 22, 3, 695–705.
3 Rose H, Rinaldi L, Bosco A, Mavrot F, de Waal T, Skuce P, Charlier J, Torgerson PR, Hertzberg H, Hendrickx G, Vercruysse J, Morgan ER. Widespread anthelmintic resistance in European farmed ruminants: a systematic review. Vet. Record 2015; 176, 546.
4 Holzhauer M, van Doorn DC, Bartels CJ, Borgsteede FH, Mars MH, Ten Wolthuis-Bronsvoort A, Moll L, Lam TJ. Worm management and development of resistance on Dutch cow farms. Tijdschrift voor Diergeneesk. 2014; 139, 27-31.