

OCCURRENCE OF SELECTED CALF DIARRHEA AGENTS IN AUSTRIA

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Calf diarrhea is one of the most important diseases affecting calves worldwide. The high morbidity and mortality of the disease leads to tremendous production losses. Aim of this study was to determine the occurrence of selected viral, bacterial and parasitic causes of calf diarrhea on Austrian farms and to validate commercially available rapid tests for the detection of calf diarrhea agents.

Farm animal veterinarians and farmers from all over Austria were contacted directly (e-mail, telephone, congresses) and asked to participate. Calves less than six months of age with diarrhea were included in the survey which was carried out from November 2017 to June 2018. At the farm a personal interview was conducted, fecal samples were collected *per rectum* and clinical examination was performed on all included calves. Four different immunochromatographic rapid tests (A-D) for the detection of *Giardia intestinalis*, *Cryptosporidium parvum*, *Clostridium perfringens*, *E. coli* (F5), Rotavirus and Coronavirus were performed on-site on individual samples. At the university parasitological examination for *Giardia* spp. (immunofluorescence microscopy), *Cryptosporidium* spp. (phase-contrast microscopy) and *Eimeria* spp. (light microscopy, Mc-Master technique) was performed by one of the authors (KL). For virological and bacteriological examination samples were sent to the appropriate laboratories at the university where the fecal samples were screened for bovine Coronavirus, bovine Rotavirus A, *E. Coli* (F5, F41), *Salmonella* spp., *Campylobacter jejuni* and *C. perfringens* (a, Pi, p₂).

In total 177 samples from calves with diarrhea originating from 70 farms were collected and completely analyzed. Bacteriological examination of the 177 (100 %) samples yielded positive results for *C. jejuni* (8.5 %), *E. coli* (98.3 %), *C. perfringens* (29.9 %) and *Salmonella* spp. (1.1 %). *Eimeria* spp., *Giardia* spp. and *Cryptosporidium* spp. were found in 15.3 %, 27.1 % and 55.4 %, respectively. Virological examination showed 33.9 % and 23.7 % of the analyzed samples positive for bovine Coronavirus and bovine Rotavirus A, respectively. Rapid test A was positive for Rotavirus (25.4 %), Coronavirus (3.4 %), *E. coli* (1.7 %) and *C. parvum* (36.7 %). Rapid test B, C and D were positive for *Giardia intestinalis* (9.0 %), *C. parvum* (46.9 %) and *C. perfringens* (31.1 %).

Results confirm the widespread occurrence of the selected calf diarrhea agents on Austrian farms and that there are great differences in sensitivity and specificity of rapid tests for the detection of calf diarrhea agents.

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