Agrotec (2012) 4: 10-15

Characterization of *Brachyspira* species and aspects related to antimicrobial sensitivity

Amanda Gabrielle de Souza Daniel[1], Michelle de Paula Gabardo[1], Saira Mabel Nara Neves[1], Roberto Maurício Carvalho Guedes*[1]

[1]Escola de Veterinária da UFMG - Campus da Pampulha, Av. Pres. Antônio Carlos, 6.627 CEP. 31270-901 Caixa Postal 567 - Belo Horizonte - MG – Brasil,
*guedesufmg@gmail.com

Keywords: enteric diseases, pigs, antimicrobial sensitivity, *Brachyspira* species

Abstract

Enteric diseases are common challenges in growing and finishing pigs, highlighting *Brachyspira hyodysenteriae* and *Brachyspira pilosicoli* as important agents. Recently, antimicrobial resistance is quoted and may be related to the reemergence of diseases caused by bacteria of the genus *Brachyspira*. The possible factors related to resistance are the diversity among strains, natural selection of resistant mutant strains due to constant exposure to antibiotics, and acquisition of horizontal genes via bacteriophages. Strains with low antimicrobial sensitivity occurs more frequently in *B. hyodysenteriae* species, but is also observed for strains of *B. pilosicoli*. The Minimum Inhibitory Concentration (MIC) is the "gold standard" to quantify patterns of antimicrobial susceptibility. Positive results have been found to tiamulin, carbadox and valnemulin for *B. pilosicoli* and carbadox, doxycycline, valnemulin, tiamulin and tylvalosin for *B. hyodysenteriae*. Many pig productin coutries do not have any MIC values for pathogenic *Brachyspiras* and standard treatment protocols are based on international literature. This review gathers data on antimicrobial susceptibility and discusses the development of resistance in this genus.