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Introduction

Brachyspira encompasses several different species of spirochaetes. These are Gram negative anaerobic bacteria which are genetically different from other spirochaetes. Brachyspira have adapted to live in various intestinal niches in birds and animals.

Six Brachyspira species can be found in pigs including Brachyspira hyodysenteriae, the cause of swine dysentery, and B. pilosicoli, the cause of intestinal (PIS) or colonic (PIC) spirochaetosis. B. murdochii and B. intermedia have also been occasionally implicated in colitis in pigs.

Swine dysentery

Swine dysentery as a disease was recognised in the 1920s, but it was only in the early 1970s that its spirochaete aetiology was confirmed. Swine dysentery causes considerable financial losses due to mortality, poor growth, elevated FCRs and the cost of treatment, including preventative treatment and control measures.

The causal agent is B. hyodysenteriae. This has many genetically different strains that can be divided into serogroups and serovars and new strains can emerge on a farm. New strains usually vary in terms of antimicrobial susceptibility, virulence and/or colonisation potential.

Distribution of swine dysentery

Swine dysentery has a global distribution with a varying incidence by region and country that changes with time. It is an important endemic problem in the EU, South America and Southeast Asia. In recent years swine dysentery has declined in the USA following establishment of high health status herds away from pig areas, using larger units, multisite production and early weaning systems. In addition, the widespread use of carbadox may have helped as the incidence of swine dysentery has increased in states where the use of this product was banned.

On infected farms infection occurs by the ingestion of infected faeces and this is favoured by multiage farms and poor biosecurity. On infected farms B. hyodysenteriae has been isolated from mice, rats, dogs and wild birds, including seagulls. Open floor channels running between pens can spread this disease and faecally contaminated lagoon water can contain B. hyodysenteriae.

This disease is usually taken on to previously clean farms by healthy carrier pigs that are not quarantined or treated prophylactically. New outbreaks have also been attributed to vehicles or visitors coming on to the farm who have had previous contact with infected pigs.

Pigs can shed B. hyodysenteriae for 70 days after the cessation of clinical signs. This micro-organism is relatively resistant in moist pig faeces, being able to survive for over 100 days.