International Dairy Topics

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Bovine viral diarrhoea IV

Persistent infection

Persistent infections arising from NCP-BVD virus arise from foetal infection before the 125th day of gestation. Such calves are seronegative and persistently infected if their dam was persistently infected. An alternative scenario is that a persistently infected calf can be born to a non-persistently infected immunocompetent mother, providing the BVD viral infection creates a viraemia in the dam of sufficient magnitude to cause transplacental infection.

Persistently infected calves may be transiently seropositive if the dam was infected in pregnancy and passed antibodies to the calf via colostrum. Persistently infected dams may generate levels of colostral antibody to heterologous strains of the virus.

Calves can appear normal at birth and grow to become productive herd members. This is a worrying scenario since such calves are not easily detected and can continue to harbour and shed virus and become reservoirs of infection in the productive herd.

Apparently healthy persistently infected animals often remain in the herd producing persistently infected offspring and becoming significant sources of perpetuating infection to herd mates and foetuses. Weak calves that survive birth usually succumb to gut or respiratory infections in their first six weeks of life. Later on they are prone to various infections and/or become poor doers.

Congenital lesions

Some BVD viral infections only become apparent following the birth of calves with congenital lesions. Once again, these often differ between herds. Congenital anomalies such as cerebellar hypoplasia, cataracts, retinal and optic nerve degeneration, hydranencephaly, hypomyelinogenesis, brachygnathism and various degrees of hairlessness are encountered following BVD virus infection.

Most congenital defects are thought to be associated with in utero infections between 75 and 150 days of gestation.