3.1 Situation

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BVD has a world-wide distribution and is characterized by high prevalence and relatively low morbidity. In addition to cows, other artiodactyla (sheep, goats, wild ruminants, pigs) can be infected. Although those other animals do not get Mucosal Disease they may, among others, suffer from reduced fertility. All age groups are susceptible. Prevalence

Numerous investigations show differing seroprevalences and incidence of PI animals. However, in areas where BVD is endemic they mainly range between 60 and 80% (seroprevalence), or 0.5 – 2% (PI animals). In Switzerland, around 60% of heifers are antibody-positive, i.e. they were in contact with the virus. For cows, the seroprevalence is up to 80% and positive animals exist on practically all farms (overview antibody and antigen prevalence in Switzerland, 1995). These animals are immune against infection with BVD/MD virus. Persistently infected (PI) animals are of central epidemiological significance as by continuously shedding the virus they represent a permanent source of infection for other animals and can also die of Mucosal Disease themselves. On average, there are one or several of these immunotolerant PI animals (1 % prevalence) on every eighth dairy farm in Switzerland. A PI animal is likely to be born on every farm every ten years. Antibody-prevalenceRegion TotalAB-PrevalenceAG-Prevalence
Jura 36974.5% 0.27%
Midland
59065.4%1.19% Adjacent breeding area
63056.3% 1.11% Prealps 94153.9% 0.32% Alps 91050.9% 0.44% Total 344057.7% 0.64% C.I. (0.95) +/- 4.5%+/- 0.34%

Our European neighbours are similarly affected by BVD: In Bavaria, antibodies were found in 75 - 80% of all tested dairy cow herds [51], with an estimated 1-2% of PI animals [52], in parts if Italy (Lombardia and Emilia Romagna) the seroprevalence is estimated to be around 62% [53]. Differences in prevalence can frequently be explained by factors such as population density, different stabling systems or management practices. For example, the prevalence in Southern Scandinavia is higher than that in Northern Scandinavia where the herds are smaller and herd density is lower [54]. In Spain, too, such a correlation between population density and seroprevalence was noted [55]. Great Britain has antibody positive animals on an estimated 95% of farms [56].

Genotypes

BVDV-1 is widely distributed world-wide while BVDV-2 is mainly found in North America, although it has also been detected in various European countries. An investigation in Bavaria in 1999 showed that BVDV-1 was involved in 93.5% of seropositive cases and BVDV-2 in 6.5% [57]. Type 2 virus was imported into Northern Italy and the Netherlands via a contaminated BHV-1 live vaccine in 1999 [58]. Another investigation in Belgium in 1999 showed BVDV-2 to exist in 13 out of 107 isolates analysed [59]. To date, no BVDV-2 has been detected in Switzerland.