

## Field Evaluation of Footwart Vaccine

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Footwarts also known as hairy foot warts or more scientifically, Papillomatous Digital Dermatitis, are a contagious, painful condition of the feet of cattle. The lesions are often seen at the back of the foot near the space between the claws; however, it can be located in the front of the foot or near the dewclaws. Early on the lesions are perhaps dime size with clearly marked borders. These lesions are moist, with hair sticking up and may have a strawberry-like surface. Later on the lesions become larger and raised with long hairs and tissue projecting from the surface giving it the “wart-like” appearance. The cause of footwarts is believed to be *Treponema* spp. Environmental conditions including poorly drained pens or alleys, the presence of manure and abrasive conditions seem to be risk factors that increase the likelihood of footwarts.

Treatment of footwarts may be with antibiotics or chemicals. These may be applied to the lesions with or without removal of the affected tissues. In some cases the lesions are wrapped after treatment. On some dairies, topical treatment is applied to the lesions using sprayers. There are concerns about the various treatments with regard to food safety and the environment. For these reasons, an effective preventive vaccine would be very desirable.

A recently reported study<sup>1</sup> conducted by the California Animal Health and Food Safety Laboratory examined the effectiveness of a commercially available footwart vaccine. The controlled trials were conducted on five commercial, Central Valley California dairies. Three of the dairies were dry lot dairies and two were freestall dairies. The prevalence of footwarts ranged from 8 to 29% on these dairies. In three dairies with 190 (#1), 205 (#2) and 28 (#3) cows, the vaccine was given to dry cows and springing heifers with no apparent lesions in the winter months to prepare these animals for the high risk months of spring and early summer. In three dairies with 423 (#3), 740 (#4) and 420 (#5) cows, all cows in the milking herd without regard for the presence of lesions were vaccinated at one time.

Cows in the trial were randomly assigned to the vaccinated or placebo groups. After vaccination, the cows were examined during milking for grossly visual lesions for 5 to 8 months. Lame cows were further examined individually on a foot trim table. Overall there were no statistically differences in footwart lesions between the vaccinated and the placebo groups. However, on one dairy, there were fewer lesions in the first lactation cows at 2 and 3 months after vaccination. Interestingly, between 21 to 65% of the cows had been previously exposed to footwarts as indicated by the presence serum antibodies

at the beginning of the study. The vaccine did stimulate an increase in serum antibodies in cows that were not previously exposed to footwarts.

The investigators concluded that the vaccine had no consistent preventive effect when used either during the close-up dry period or as a single herd vaccination. However they did suggest that the vaccine be tested with other strategic administration schedules to determine a more effective means of using the vaccine to prevent new footwart infections.

<sup>1</sup>Field evaluation of a vaccine against Papillomatous Digital Dermatitis (PPD; Footwarts) in dairy cattle. 2003 Annual Report, California Animal Health & Food Safety Laboratory System. School of Veterinary Medicine, University of California Davis. September 2004, pp. 23-24.