

# Research Summaries 2

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## Determining the Prevalence of Bovine Viral Diarrhea Virus Persistently Infected Calves Originating from a Number of Modern Western Well-vaccinated Dairy Herds

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### Introduction

All arriving heifer calves and some additional bull calves were tested for bovine viral diarrhea virus (BVDV) persistently infected (PI) status when received by the calf ranch to determine incidence of occurrence across individual dairies contributing calves to this calf ranch. After confirmation of positive status, these animals were removed to eliminate potential for infection in subsequent breeding populations. In addition, 40 random positive PI samples were submitted for typing and genetic characterization to create a dendrogram for comparison among PI calves and existing vaccination programs

### Materials and Methods

All calves received at the calf ranch from 32 contributing dairies were ear notched and submitted for pooled PCR sampling. Samples were collected starting on September 27, 2007, and collected through August 2008 for a total of 54,260 samples. Positive pools were then tested individually by both PCR and ELISA to confirm initial test results. All positive animals are retested at three weeks to confirm status. At reconfirmation all

positive calves were removed from the population and those that were determined to be acutely infected at the time of initial test were returned to the population.

### Results

A total of 54,260 calves were tested with 149 confirmed PI calves found for a 0.27% prevalence. Of the 40 PI calves that were characterized by type, five (12.5%) were Type 2A and 35 (87.5%) were Type 1B. Fifty-eight percent of the dairies had contributed at least one PI calf, and the predominant vaccine usage by type and protocol were collected from the herds for the preceding year. Calves identified as PI were traced back to the dairy of origin and the suggestion was made to test the dams and run bulk milk samples (or equivalent) to rule out the presence of persistently infected cows in the milking herd.

### Significance

This characterization provided an opportunity to further explore the prevalence and epidemiology of BVDV on large western dairies and suggested ways to further reduce its negative affect.