

Bovi-Shield GOLD® FP® 5 VL5* Induces Fetal Protection against a Bovine Viral Diarrhea Virus Type 2 Persistently Infected-Seeder Calf Challenge

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Introduction

Efficacy of Bovi-Shield GOLD® FP® 5 VL5 in heifers at five to seven months of gestation was evaluated following exposure to seeder calves persistently infected (PI) with bovine viral diarrhea virus (BVDV) type 2.

Materials and Methods

Thirty beef heifers were vaccinated on Day -490 with Bovi-Shield GOLD® FP® VL5 with or without the BVDV fraction (T02, n=20 and T01, n=10, respectively). Breeding started 279 days later. On day 0, heifers (five to seven months pregnant) were commingled for 45 days with four BVDV type 2 PI seeder calves. Blood was collected from the heifers on days 0, 30 and 59 for serum neutralizing (SN) antibodies to BVDV types 1 and 2, and on days 0, 7, 9 and 12 for BVD virus isolation (VI). Pre-colostral blood samples for SN and ear-notch immunocytochemistry samples were collected from all calves at birth.

Results

All T01 heifers were seronegative for both BVDV types on day 0. Eight of 10 T01 heifers were viremic at least one day and all seroconverted to both BVDV types

following challenge. None of the T02 heifers became viremic. Nine of 10 T01 calves and one of 20 T02 calves seroconverted to BVDV type 2 prior to birth. The seronegative calf in T01 had a positive ear-notch test, VI-positive spleen and lymph node samples and was considered PI. The T02 calf that seroconverted was born weak with a low birth weight, but all other calves were judged to be normal at birth.

Significance

Bovi-Shield GOLD® FP® 5 VL5 provided significant ($P < 0.05$) protection to fetuses of dams that were exposed to BVDV type 2 PI seeder calves at five to seven months gestation.

The USDA True Name of Bovi-Shield GOLD® FP® 5 VL5 is bovine rhinotracheitis-virus diarrhea-parainfluenza3-respiratory syncytial virus vaccine modified-live virus *Campylobacter Fetus-Leptospira Canicola-Grippytyphosa-Hardjo-Icterohaemorrhagiae-Pomona bacterin*.