

PULMO-GUARD™ MpB Bacterin

Safety Studies

Key Points

Studies Showed No Significant Systemic Adverse Reactions

- Studies in three states involved over 600 dairy and beef calves.
- No significant systemic adverse reactions were noted.
- Injection site swellings did occur in ~46% of the calves.

Study Design

Location	Texas, Oklahoma, Nebraska
Study animals	205 dairy and beef calves 30-75 days of age divided into six groups (Part 1) 416 beef calves 4-6 months of age in ten groups (Part 2)
Procedure	Each calf vaccinated twice 14-19 days apart Each calf received 2 mL Sub-Q on side of neck Injection sites were measured for 4-6 days post-vaccination First injection site palpated after revaccination Systemic adverse reactions evaluated

Study Results First Vaccination

	Average % with Swelling Range	Average Size of Swelling Range
Part 1 n=205	46% 31-68%	52 cm ³ 4-150 cm ³
Part 2 n=416	45% 7-76%	52 cm ³ 5-159 cm ³

Second Vaccination

	Average % with Swelling Range	Average Size of Swelling Range
Part 1 n=205	38% 20-80%	68 cm ³ 11-176 cm ³
Part 2 n=416	45% 14-92%	52 cm ³ 8-105 cm ³

The Bottom Line

- In all groups, at second vaccination, swellings from first vaccination were regressing.
- In Part 1 some 30-day-old Holstein calves were lethargic for 18 to 24 hours following the first vaccination; these calves were not lethargic after the second vaccination.
- Except for possible swellings at the injection site, PULMO-GUARD™ MpB Bacterin is safe for use in cattle over 45 days of age.