

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.