Boehringer Ingelheim

PULMO-GUARD™ MpB Bacterin

Technical Bulletin

Boehringer Ingelheim Vetmedica, Inc.

Key Points

Host Animal Challenge Studies

- Vaccinated calves showed significant difference in reduction of lung lesions ($P \leq 0.05$).
- Vaccinates showed significant difference in increased IgG_1 and IgG_2 serum antibody ($P \leq 0.05$).
- Vaccinates showed significant difference in increased IgA antibody from lung wash ($P \leq 0.05$).

Study Design
Trial 1 and Trial 2

Study animals	4 to 6 week old Holstein calves Each calf negative for *Mycoplasma bovis* antibody
Study design for both trials	10 calves vaccinated twice, 3 weeks apart 5 calves non-vaccinated controls 14 days post-vaccination calves given a direct challenge with virulent *Mycoplasma bovis* All calves necropsied day 14 post-challenge

Data Collection

Trial 1	Trial 2
Seroconversion to IgG_2	Seroconversion to IgG_2
Percent lung lesions scored	Percent lung lesions scored Seroconversion to IgG_1 IgA titers in lung washes Total lung *Mycoplasma bovis* colony count

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Study Results*
Lung Lesion Scores

	Vaccinates	Controls
Trial 1	16.6% (average of 10)	23.5% (average of 5)
Trial 2	9.0% (average of 10)	17.1 (average of 5)

***Mycoplasma bovis* Antibody Titers**

		Vaccinates	Controls
Trial 1 & 2	IgG_2	2086	55
Trial 2	IgG_1 serum	3920	136
Trial 2	IgA lung wash	1470	180

* Differences significant at $P \leq 0.05$
No significant difference noted in the total lung *Mycoplasma bovis* colony count

The Bottom Line

- Calves vaccinated with **PULMO-GUARD MpB** Bacterin showed significant protection of lungs from challenge of virulent *Mycoplasma bovis* as indicated through reduced lung lesion scores.

- Vaccinated calves also demonstrated a significant increase in IgG_1 and IgG_2 serum *Mycoplasma bovis* antibody and IgA *Mycoplasma bovis* antibody from the lungs.