

THE FACTS:

Porcine Respiratory Disease

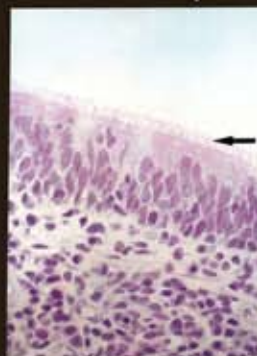
PROTECTION

MAXI/GUARD[®] NasalVac[™]



Photomicrographic Evidence

Normal Swine Nasal Turbinate Ciliated Epithelium



Cilia

Protected First By Natural
Mucociliary Clearance Mechanism

Damaged Swine Nasal Turbinate Epithelium:

Devoid of Cilia with Evidence of Superficial
Necrosis Within Mucosa Typical of Bb Infection



Predisposed to Pathogenic Agents

Denuded Turbinate Mucosal Epithelium

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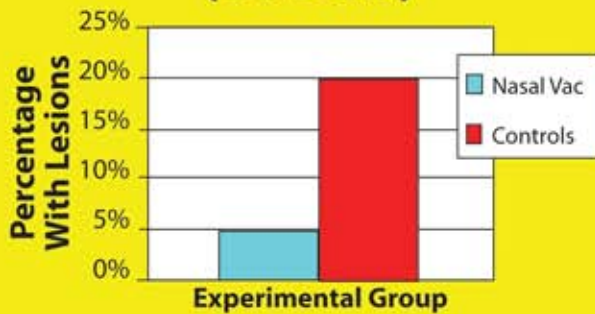


MAXI/GUARD[®]
A Veterinary Gold Standard

NasalVac™

Non-toxigenic Modified Live Avirulent Organism
(Bordetella bronchiseptica)
 Administer Day 1-3 of life
 0.5 mL each nostril
 Colonizes Ciliated Respiratory Epithelium
(Nasal & Tracheal)
 No added labor during processing
 Minimizes costly treatments for respiratory disease

Lung Lesions at Slaughter (US Data)



NasalVac™ Advantages

- Easy intranasal administration; no injection site reactions or lesions
 - Increased weaning weights
 - Reduces days to market
- Reduction in respiratory disease treatments (savings in drugs, labor and stress on animals)
 - No maternal interference
 - Reduced death loss
 - Proven safety record
 - Competitively priced

NasalVac™ Field Trials

Dr. Paul Knoernschild, DVM • Marshall, MO • 2 Herds (120 & 1,200 Head)
 Sponsored By: Addison Biological Laboratory, Inc.

Field Trial Swine Herd A

This herd had a history of clinical Atrophic Rhinitis with up to 8% of the animals showing twisted noses. In order to minimize the variables, every other litter was vaccinated with MAXI/GUARD NASAL VAC and all animals were reared side by side in the same facility. The only variable was the vaccine. **Vaccinates demonstrated no twisted noses and healthy turbinates were revealed at slaughter. Vaccinates reached market weight 10 days sooner than controls.**

| | NO. ANIMALS | DAYS TO MARKET | AVERAGE MARKET WEIGHT |
|------------|-------------|----------------|-----------------------|
| VACCINATES | 60 | 166 | 238 lbs |
| CONTROLS | 60 | 176 | 231 lbs |

Field Trial Swine Herd B

This herd demonstrated no clinical signs of Atrophic Rhinitis except for moderate turbinate atrophy on slaughter checks. In order to minimize the variables, every other litter was vaccinated with MAXI/GUARD NASAL VAC and all animals were reared side by side in the same facility. The only variable was the vaccine. **Vaccinates exhibited healthy turbinates at slaughter. Vaccinates reached market weight 10 days sooner than controls.**

| | NO. ANIMALS | DAYS TO MARKET | AVERAGE MARKET WEIGHT |
|------------|-------------|----------------|-----------------------|
| VACCINATES | 600 | 170 | 232 lbs |
| CONTROLS | 600 | 180 | 231 lbs |

Field Trial Swine Herd A and B *Observation at slaughter*

| | NO. ANIMALS | LUNG LESIONS* |
|------------|-------------|---|
| VACCINATES | 660 | 0% of the animals had over 5% of total lung tissue affected |
| CONTROLS | 660 | 20% of the animals had up to 15% of total lung tissue affected |

*Lung lesions refer to lesions arising from any cause.