

TOP REASONS TO CHOOSE PYRAMID[®] + PRESPONSE[®] SQ VACCINES FOR CALVES

If you're looking to raise robust calves, look to the Boehringer Ingelheim premier vaccine families of PYRAMID and PRESPONSE. Backed by research, their proven performance defends your herd against the primary viruses and bacteria that lead to bovine respiratory disease. By prioritizing early calf health, you set calves up for a healthier, more productive future.

1 THE FIRST CALF VACCINE LABELED TO PROTECT AGAINST BVDV TYPE 1B

- Provides a duration of immunity of at least 217 days against respiratory disease due to bovine viral diarrhea virus (BVDV) Type 1b
- Contains the Singer strain — found to induce higher levels of BVDV Types 1a and 1b antibodies¹

2 PROVEN TO STIMULATE IMMUNITY IN THE FACE OF MATERNAL ANTIBODIES

- Contains the unique MetaStim[®] adjuvant that enhances the immune response
- 30 day old calves vaccinated with PYRAMID were protected from respiratory disease due to BRSV²
- PYRAMID 5 vaccination in one month old calves protected against clinical disease when challenged with BVDV Type 2, seven months following vaccination³

3 CONVENIENT SINGLE-DOSE, MODIFIED-LIVE VIRUS VACCINE

- Protects against BVDV Types 1a, 1b and 2, infectious bovine rhinotracheitis (IBR), parainfluenza 3 (PI₃), bovine respiratory syncytial virus (BRSV) and *Mannheimia haemolytica*
- BQA compliant – Low dose (2 mL), administered subcutaneous

4 TO HELP PREVENT BACTERIAL PNEUMONIA, PRESPONSE[®] SQ PROVIDES DUAL ACTION

- Stimulates the immune system to fight *Mannheimia haemolytica*
- Prevents leukotoxins from damaging the lungs



PROTECTS AGAINST BVDV TYPE 1B, THE BIGGEST THREAT TO CALVES TODAY^{4,5}

41%

1988⁴

54%

1998⁴

61%

2008⁴

71%

2020⁵

Percentage of BVDV isolates attributed
to **TYPE 1B** has increased.

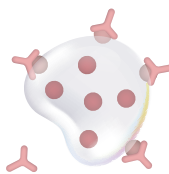
UNIQUE ADJUVANT HELPS AVOID MATERNAL ANTIBODY INTERFERENCE



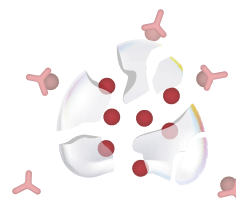
Vaccine antigens on
adjuvant lipid droplets
stimulate the immune system.



Maternal antibodies can
neutralize exposed antigens.



Some antigens are “hidden”
inside lipid droplets to
escape maternal antibodies.



Immune cells metabolize
lipid droplets, releasing
“hidden” antigens to stimulate
an immune response.

The MetaStim[®] adjuvant also boosts immune response by extending the time the immune system is exposed to the vaccine antigens.

PROVEN TO STIMULATE IMMUNITY IN THE FACE OF MATERNAL ANTIBODIES



A recent challenge study evaluated the efficacy of Pyramid[®] 5 vaccine to protect 30-day-old calves with maternal antibodies from bovine respiratory syncytial virus (BRSV)²



PYRAMID 5 vaccinated calves had fewer clinical signs and lung lesions, as well as less nasal shedding attributed to BRSV, than unvaccinated calves



In addition, PYRAMID 5 stimulated a BRSV mucosal immune response and memory response — an advantage previously only attributed to intranasal respiratory vaccines



In another study, 4 1/2 week old calves vaccinated with PYRAMID 5 in the face of maternal antibody were protected from severe clinical disease when challenged 7 months later with BVDV Type 2.³

**For more details on BVDV Type 1b, visit [BVDVTracker.com](https://www.bvdvtracker.com).
Additional information about PYRAMID vaccines is available at [PYRAMIDVaccines.com](https://www.pyramidvaccines.com).**

¹Fulton RW, Cook BJ, Payton ME, et al. Immune response to bovine viral diarrhoea virus (BVDV) vaccines detecting antibodies to BVDV subtypes 1a, 1b, 2a, and 2c. *Vaccine* 2020;38(24):4032–4037. ²Kolb EA, Buterbaugh RE, Rinehart CL, et al. Protection against bovine respiratory syncytial virus in calves vaccinated with adjuvanted modified-live virus vaccine administered in the face of maternal antibody. *Vaccine* 2020;38(2):298–308. ³Zimmerman AD, Buterbaugh RE, Schnackel JA, et al. Efficacy of a modified-live virus vaccine administered to calves with maternal antibodies and challenged seven months later with a virulent bovine viral diarrhoea Type 2 virus. *Bov Pract* 2009;43(1):35–43. ⁴Ridpath JF, Lovell G, Neill JD, et al. Change in predominance of bovine viral diarrhoea virus subgenotypes among samples submitted to a diagnostic laboratory over a 20-year time span. *J Vet Diagn Invest* 2011;23(2):185–193. ⁵Data on file, Boehringer Ingelheim and BVDVTracker.com. Data collected November 1, 2018, through November 1, 2020.