Could your vaccine be missing something?

For more complete BVD protection that includes all three major BVD antigens

Introducing targeted BVD protection
Viralign™ 6 is the first combination modified-live vaccine to provide targeted protection against bovine viral diarrhea (BVD) virus 1b, the most predominant BVD virus subtype.

BVD – highly contagious, immune-suppressing and costly

The BVD virus causes a highly complex immune-suppressing disease often referred to as the most costly viral disease in U.S. cattle herds.¹

- It affects multiple body systems of the animal and decreases the immune system’s ability to fight infections.¹ In fact, the BVD virus is the most commonly isolated virus in bovine respiratory disease (BRD) outbreaks.²
- The primary sources of BVD are exposure to PI (persistently infected) calves, calf-to-calf transmission or via contaminated surfaces, such as feed, water tanks, equipment, etc.
- The health and performance impact BVD can have on your operation, both directly and indirectly — because of its close association to BRD — results in severe economic losses:
  - Exposing feedlot cattle to PI calves costs $67.49/hd due to decreased efficiency and fatalities³
  - In one study calves in the same pen or adjacent pen were 43% more likely to require treatment for BRD⁴
- BRD accounts for 75% of feedlot morbidity and 50% to 75% of mortality, costing the industry an estimated $800 to $900 million annually⁵,⁶,⁷,⁸
- BRD-related factors also contribute to a reduction in average daily gain of 0.3 to 0.5 lbs⁹,¹⁰

“Although the predominance of BVDV [BVD virus] 1a strains decreased in this study from 1988 to 2008, studies conducted from 1985 to 2008 indicate the incidence of BVDV, based on percentage of herds harboring animals persistently infected with BVDV, did not.”¹¹

Julia Ridpath, Ph.D.
U.S. Department of Agriculture,
Agricultural Research Service

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Calves in the same pen or adjacent pen to a PI calf are 43% more likely to require BRD treatment.
1b has emerged as the most predominant BVD viral strain infecting cattle

To effectively control BVD, it’s important to understand what the most common BVD viral strains responsible for infecting your cattle are and how the predominance of those strains has changed over time.

- According to a 20-year analysis of diagnostic samples, the predominance of subtype 1b has increased from 41% in 1988 to 61% in 2008:11
  - During this same period, 1a has decreased, yet the incidence of BVD has not been reduced:11
- 1b is the most predominant subtype among PI cattle, the primary source for spreading BVD among feedlot and stocker herds
  - A 2012/2013 surveillance study that included 515 samples found that subtype 1b was predominant at a prevalence rate of 73% followed by 2a at 16%:12
  - In a 2006 study of 21,743 feedlot calves, subtype 1b was the predominant strain, found in 78% of the samples tested:13
- Stocker cattle with respiratory disease also showed 1b was the most predominant strain, at almost 86%, followed by 1a at 14.3%:14

Viralign 6 – targeted protection means more complete protection

Until now, producers and their veterinarians have relied on cross-protection from commonly used combination vaccines that include BVD virus 1a and 2 to protect against 1b. Decades of research and industry experts have proven that:

- 1b is the predominant BVD virus subtype:11,12,13
- BVD incidence has not been reduced:11
- BRD continues to be the most challenging, economically devastating health management issue facing producers today:5,6,7,8
- Cross-protection has not been effective in providing an adequate level of protection against 1b:11,13

Viralign 6 is the first U.S. Department of Agriculture (USDA)-licensed combination modified-live vaccine to provide targeted protection against 1b, the most predominant BVD virus subtype. Viralign 6 also includes BVD antigens 1a and 2, and protects against bovine respiratory syncytial virus (BRSV), infectious bovine rhinotracheitis (IBR) and parainfluenza3 (PI3) virus.
BVD virus 1b study summary – improved protection

Study objective was to determine BVD virus subtype 1b protection in the presence of confirmed 1b-positive PI calves. Cattle were allocated to two treatment groups — in treatment group 1, calves were vaccinated with a 5-way commercial modified-live vaccine that contained 1a and 2; in the second treatment group, calves received the same vaccine plus a 1b antigen in a separate dose (Stimulator 1b).

- Calves vaccinated with the 5-way commercial vaccine plus the 1b antigen may provide better protection based on stimulating titers five times greater to BVD virus subtype 1b (Table 1)
- Calves vaccinated with the 5-way commercial vaccine plus the 1b antigen had significantly greater (P < 0.0001) average daily gain than those not receiving the 1b antigen, resulting in a 20-lb weight gain advantage during the 90-day feeding period (Table 2)

Note: Stimulator 1b contains the same BVD 1b antigen as Viralign 6.

<table>
<thead>
<tr>
<th>Table 1: Bovine Viral Diarrhea Serology (Geometric Mean Titers)*</th>
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<tbody>
<tr>
<td>5-way Commercial</td>
</tr>
<tr>
<td>Pre-vaccination</td>
</tr>
<tr>
<td>Calves, n</td>
</tr>
<tr>
<td>BVD 1a</td>
</tr>
<tr>
<td>BVD 1b</td>
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<tr>
<td>BVD 2</td>
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*ANOVA MIXED model (Treatment Group, Gender and Treatment Group X Gender)

Table 2: Average Daily Gain — All Genders*

<table>
<thead>
<tr>
<th>5-way Commercial</th>
<th>5-way Commercial + Stimulator 1b</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Calves, n</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>Day 0 to 30, lbs</td>
<td>3.25</td>
<td>3.95</td>
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<tr>
<td>Day 0 to 60, lbs</td>
<td>3.95</td>
<td>4.38</td>
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<tr>
<td>Day 0 to 90, lbs</td>
<td>3.83</td>
<td>4.06</td>
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</tbody>
</table>

*ANOVA MIXED model (Treatment Group, Gender and Treatment Group X Gender)

The label contains complete use information, including cautions and warnings. Always read, understand and follow all label and use directions.

Precautions: Do not vaccinate pregnant cows or calves nursing pregnant cows since abortions may occur. Do not vaccinate within 21 days of slaughter.

For vaccination of healthy cattle five months of age or older. Dose: 2 mL subcutaneous in the side of neck. See insert for full instructions.