

**CONTROL WITHOUT
COMPLICATION.™**



VIRA SHIELD® 6: CONTROL WITHOUT COMPLICATION.

Vira Shield 6 keeps vaccination simple and effective.

- Contains up to 13 disease-fighting antigens in one, ready-to-use bottle (See Figure 1)
- Gives long-lasting control with its state-of-the-art adjuvant, Xtend® SP
- Use on any animal including pregnant cows and calves nursing pregnant cows
- New! Study demonstrates enhanced IBR fetal protection without the risks that may be associated with modified live IBR vaccines¹
- Available in even bigger combinations to control vibrio and *Lepto hardjo-bovis* – the lepto of most importance to U.S. cattlemen
- Research demonstrates Vira Shield can “prime” the immune system of young calves – even ones with high maternal antibodies²



Figure 1

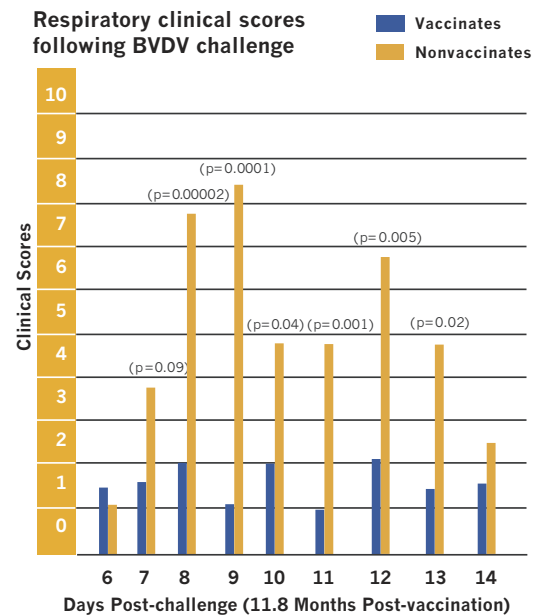
Antigen	Vira Shield 6	Vira Shield 6+L5 HB	Vira Shield 6+VL5 HB
NCP BVD Type 1	•	•	•
CP BVD Type 1	•	•	•
NCP BVD Type 2	•	•	•
IBR	•	•	•
PI ₃	•	•	•
BRSV	•	•	•
Vibrio			•
5-way lepto including <i>hardjo-bovis</i>		•	•
Available with <i>H. somni</i>	•	•	•

Gives long-lasting control with its gold-standard adjuvant, Xtend SP, that:

- Stimulates cell-mediated and humoral immune response
- Helps release antigens over time
- Helps provide more continuous stimulation of the immune system

The result is long-lasting coverage as proven by a duration of immunity study involving Vira Shield. The study was conducted by South Dakota State University’s Departments of Veterinary Science and Biology/Microbiology. Researchers there found that Type 2 BVD control remained strong for 11 months.³ See Figure 2 below.

Figure 2



Vira Shield-vaccinated cattle challenged 11 months later had significantly better clinical scores compared to nonvaccinated cattle on days 8 through 13 post-challenge.



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Available in even bigger combinations to control vibrio and *Lepto hardjo-bovis*. Both are bacterial pathogens that can significantly cut conception rates.

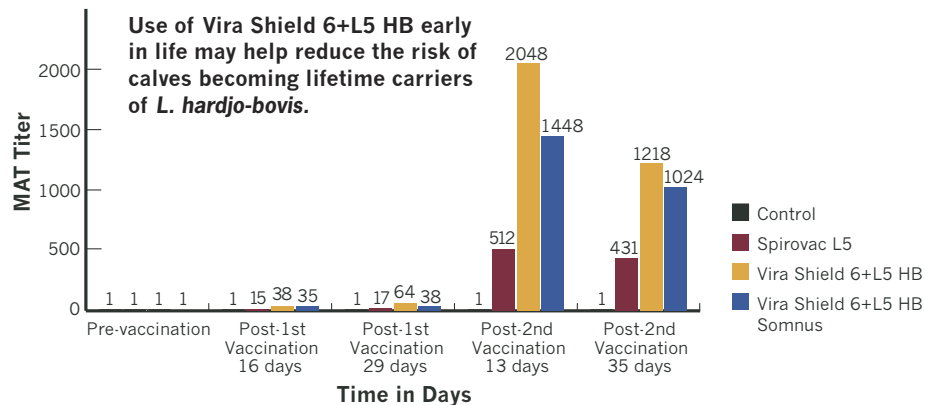
- Vira Shield 6+VL5 HB and Vira Shield 6+L5 HB are the first and only inactivated vaccine combinations containing *L. hardjo-bovis* – the most common cause of leptospirosis in the U.S. The *L. hardjo-bovis* isolate in Vira Shield:
 - Originates from a U.S. herd, which was experiencing reproductive problems
 - Is geographically distinct from Spirovac,[®] which contains an isolate from Australia

In one study, Vira Shield 6+L5 HB had four times the titer response of Spirovac L5 (See Figure 4).

Figure 4

Serological comparison of Vira Shield 6+L5 HB and Spirovac L5

For this trial, 28 Holsteins were randomly assigned to one of four test groups. Each vaccination group had eight animals and the control group had four animals. Animals were vaccinated according to label directions. Serum samples were titered for *L. hardjo-bovis* antibodies by microscopic agglutination. Group titers are a geometric mean of individual titers per test day and group.



Vaccinate and “prime” young calves – even ones with high maternal antibody

In an Iowa State University study, the immune response of 120 young calves with residual maternal antibodies was measured after cows were vaccinated.²

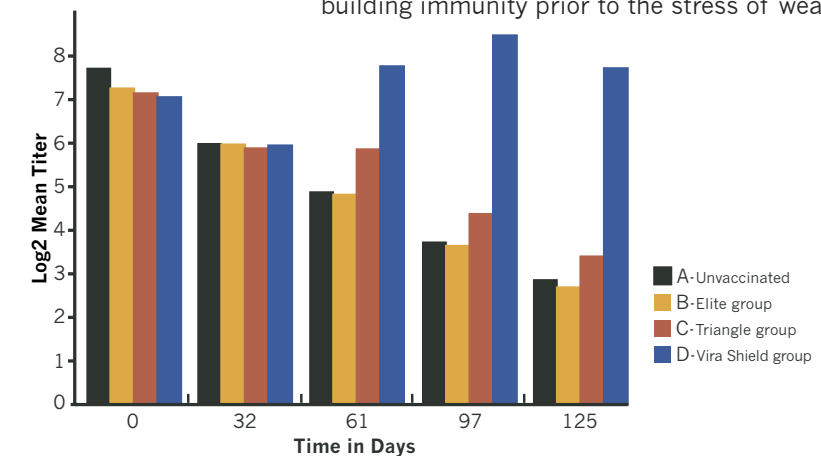
Trial protocol:

- Four groups of 30 animals each were handled as follows on day 0 and day 32. Calves were as young as 28 days at initial vaccination.
 - Group A: Control/no vaccine
 - Group B: Elite[®] 4 vaccine
 - Group C: Triangle[®] 4 vaccine
 - Group D: Vira Shield 5 vaccine
- Blood samples were collected on days 0, 32, 61, 97 and 125.
- Antibody titers were determined by standard microtiter serum neutralization tests.

Figure 5

Mean antibody titers to BVD Type 1 virus

Over time, the Vira Shield group showed superior antibody levels, particularly following the booster dose. Calves given Vira Shield were able to overcome maternal antibody and thus begin building immunity prior to the stress of weaning.



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Compare!

	Vira Shield® 6	Triangle® 4 +Type II BVD	CattleMaster® Gold FP 5
BVD isolates	3	2	2
Type 2 BVD protection	Yes	Yes	Yes
Study demonstrated duration of immunity against Type 2 BVD	Yes	No	No
Demonstrated to overcome maternal antibodies	Yes	No	No
Demonstrated to provide IBR fetal protection	Yes	No	Yes
Available with <i>Lepto hardjo-bovis</i>	Yes	No	No
Available with vibrio	Yes	No	No
Available with <i>H. somni</i>	Yes	No	No
Ready to use	Yes	Yes	No
SubQ-only administration	Yes	No	No

1. Zimmerman A, et al. Efficacy of bovine herpesvirus-1 inactivated vaccine against abortion and stillbirth in pregnant heifers. *JAVMA*. 2007;231:1386-1389.
2. Kaeberle M., et al. Antibody response of young calves to inactivated viral vaccines. 1997 Beef Research Report – Iowa State University. A.S. Leaflet R1462.
3. Chase C. Protection with an inactivated vaccine against IBR, BRSV and BVDV. Paper presented at: Annual Meeting of the American Association of Bovine Practitioners; 1995; San Antonio, Texas. Vira Shield has no approved claim for duration of immunity for Type 2 BVD.
4. Daly R. Timing of vaccination in beef cattle herd. Proceedings, Applied Reproductive Strategies in Beef Cattle. 2006. Rapid City, South Dakota.
5. Chiang B., et al. The effect of infectious bovine rhinotracheitis vaccine on reproductive efficiency in cattle vaccinated during estrus. *Theriogenology*. 1990;33:1113-1120.



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