



## Veterinary Therapeutics Article Summary

### Key Points

*Rapid Onset of Protection against Infectious Bovine Rhinotracheitis with a Modified-Live Virus Multivalent Vaccine*  
Fairbanks, KF, et al., *Veterinary Therapeutics\**

- Calves vaccinated 72 or 96 hours before challenge had reduced clinical signs, lower body temperatures, shed less virus following challenge, and 39% to 76% greater weight gains compared with unvaccinated controls.
- Vaccination programs that include IBR are routine in US feedlots, stocker operations, and stocker/backgrounder programs; these programs are designed to protect cattle against IBR and reduce Bovine Respiratory Disease (BRD).
- Calves not vaccinated prior to weaning or commingling risk IBR and secondary bacterial pneumonia.
- **EXPRESS® 5**, a modified live virus vaccine with IBR, Type 1 & Type 2 BVD, PI<sub>3</sub> and BRSV, provided rapid protection against IBR in calves not previously vaccinated.

### Study Design

Study animals	43 calves with serum neutralization (SN) titers less than 1:2 to IBR.
Procedure	Vaccinated and unvaccinated calves intranasally challenged with virulent IBR virus.
	Calves were monitored daily for clinical signs and rectal temperatures.
	Blood was collected for SN titers. Nasal secretions were collected and tested for levels of virus shedding.
	Calves weighed individually prior to challenge, 14 days after challenge, and 29 days after challenge.

### Treatment Groups

Group 1	11 calves vaccinated 48 hours prior to challenge
Group 2	11 calves vaccinated 72 hours prior to challenge
Group 3	11 calves vaccinated 96 hours prior to challenge
Control	10 calves unvaccinated

\*Vol. 5, No. 1, Spring 2004

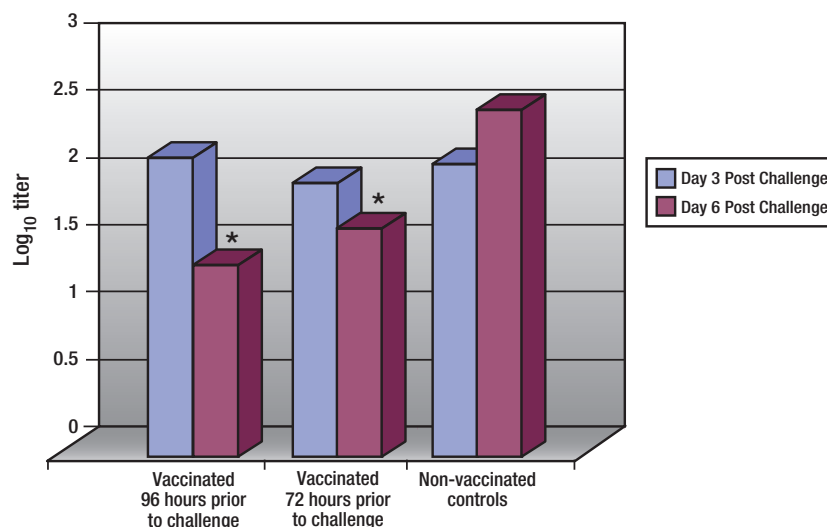
**Body Weight Data and Average Daily Gain (ADG)  
for Groups of Calves Vaccinated 48 Hours,  
72 Hours, or 96 Hours with EXPRESS® 5 Prior to Challenge**

Treatment Group	Day 1	Day 14			Day 29			Gain Advantage %
	Mean Body Weight lbs	Mean Body Weight lbs	Total Gain lbs	ADG lbs/day	Mean Body Weight lbs	Total Gain lbs	ADG lbs/day	
Group 3	528.4	563.4	35.0	2.33*	601.0	72.6	2.42**	75.5
Group 2	535.5	561	25.5	1.67*	594.7	59.2	1.98	43.1
Group 1	517.6	537.2	19.6	1.30	575.3	57.6	1.94	39.4
Control	532.8	541.6	8.8	.57	574.2	41.4	1.39	

\* Significantly greater than ADG for unvaccinated group ( $p \leq 0.04$ )

\*\* Significantly greater than ADG for unvaccinated group ( $p \leq 0.004$ )

**Reduced Post Challenge IBR Virus Shedding  
in Vaccinated Calves Compared to Unvaccinated Calves**



\* indicates significant ( $p \leq 0.01$ ) differences between the vaccinated group and the unvaccinated group that day

**The Bottom Line**

- Average daily gain of calves vaccinated 72 or 96 hours prior to challenge was significantly greater than unvaccinated calves.
- Over the 29 day study, calves vaccinated 96 hours prior to challenge had a 76% greater weight gain than unvaccinated calves.
- Although not significantly different, calves vaccinated 48 hours prior to challenge had reduced clinical signs and greater weight gains versus control calves.
- Calves vaccinated 72 or 96 hours prior to challenge had significantly reduced clinical signs compared to unvaccinated calves.
- Virus shedding was significantly reduced in calves vaccinated 72 or 96 hours compared to unvaccinated calves.