

6. Wohler WH, Baugh CL. Shipping fever pasteurellosis and salmonella prophylaxis. *Modern Veterinary Practice*. 1980;51:921-923.  
7. McKercher PD: Oil adjuvants; Their use in veterinary biologics. In *Advances in Carriers and Adjuvants for Veterinary Biologics*. ed. Nervig RM, Gough PM, Kaberle ML, Whetstone CA. Iowa State University Press 1986:115-119. 8. Seppic: Division Cosmetique

Pharmacie 75, quai d'Orsay 75321. Paris cedex 07, Montanide bibliography 1993 and technical bulletins. 9. Panciera RJ, Corstvet RE: Bovine pneumonic pasteurellosis: model for *Pasteurella haemolytica* and *Pasteurella multocida*- induced pneumonia in cattle. *AJVR* 1984;45:2532-2537.

# What's Going on in Bovine Viral Vaccines: Do Both Killed and Modified Live Vaccines Induce Cell Mediated Immunity?

**Christopher C. L. Chase**<sup>1,3</sup>

**David J. Hurley**<sup>1,2,3</sup>

*Departments of Veterinary Science<sup>1</sup> and Biology / Microbiology<sup>2</sup>*

*South Dakota State University, Brookings, SD 57007*

*Rural Technologies, Inc.<sup>3</sup> Brookings, SD 57006*

The spectrum of immunity from inactivated bovine viral vaccines has often been discounted because of the lack of a cell mediated response. With the advent of newer adjuvants, the effect of an inactivated BRSV, BVDV PI3, IBR vaccine (Vira Shield™ 5: Grand Laboratories, Freeman, SD) on cell mediated and cytotoxic T cell response against IBR and BRSV was measured. Our results indicated that cattle vaccinated with an inactivated vaccine mounted and maintained a cellular

proliferative response against both viruses at all time points measured up to 9 months post vaccination and a cytotoxic T cell response for 3 months against BRSV and for 4 months against IBR post vaccination. Studies are ongoing on the long term effect of this immune response on a sequential challenge with IBR, BRSV and BVDV. The efficacy of this immune response on protection against disease and virus shedding will be discussed.

---

**MILK / REFRESHMENT BREAKS**

**throughout the entire meeting**

Provided by

**Monsanto Agricultural Group, Animal Sciences Division**

---