

## Results and Conclusions

None of the 417 calves were persistently infected with BVDV, as PBL at delivery were negative by cell culture isolation for both cytopathic (CP) BVDV and other CP agents or noncytopathic (NCP) BVDV. To date, at least 10 calves were positive for CP agents in the nasal swabs collected at delivery. Approximately 30% of the calves were positive for *Mannheimia haemolytica*, *Pasteurella multocida*, and/or *Haemophilus somnus* in nasal swabs at delivery. Vaccination histories indicated a variety of viral and bacterial immunogens. For the 24 herds, 10 received killed viral vaccines; nine received modified live virus (MLV) vaccines; and five received a combination of killed and MLV vaccines (killed initially with subsequent MLV). The viral vaccines contained bovine herpesvirus-1 (BHV-1), parainfluenza-3 virus (PI-3V), bovine respiratory syncytial virus (BRSV), and bovine viral diarrhea virus (BVDV) type 1. Several herds use viral vaccines with the BVDV2. Ten herds received

*M. haemolytica* and/or *P. multocida* products, with 8 herds receiving *H. somnus* products. The array of viral antibody levels to BHV-1, PI-3V, BRSV, BVDV1, and BVDV2 varied as to vaccine, number of vaccinations, and timing of vaccination prior to delivery. In a few cases, only one dose of killed vaccine was used and, as anticipated, the neutralizing antibody levels were low or absent. Two doses of killed vaccines in some cases exceeded the antibody levels induced by one dose of MLV vaccine. Herds using the vaccines with BVDV2 immunogen plus BVDV1 had increased BVDV2 antibody levels compared to those receiving BVDV1 alone. By May/June 2001, the calves will be fed to market weight and processed with various economic data obtained including carcass information. Ultimately, each animal will have economic information which will include profit/loss for each calf. We will analyze these data and attempt to determine if various preconditioning programs affect economic return.

# Teat Endoscopy (Theloscopy) - Equipment and Procedure

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## Introduction

The objective of this presentation is to describe a practical method for teat endoscopy (theloscopy). The goal of theloscopy is to diagnose reasons of milk-flow disorders and to monitor their treatment.

## Materials and Methods

The equipment consists of a small, wireless battery-operated theloscope for air insufflation and endoscopy, and instruments for small surgery.<sup>a</sup> The patient is prepared by xylazine sedation, mechanical fixation of head, tail and hindlimbs, cleaning and disinfection of the teat, injecting an anesthetic into a teat vein, draining off milk, clamping teat basis and flushing the teat cistern with

saline. Theloscopy can be performed via the teat canal or via the lateral teat wall. A small opening in the teat wall is made for endoscopy via the lateral teat wall which is sutured after finishing endoscopy. Endoscopy via the teat canal enables the teat canal and teat cistern to be inspected. In this scenario, the view is directed upwards. By endoscopy via the lateral teat wall, the teat cistern and inner opening of the teat canal can be inspected. In this scenario, the view is directed downwards.

## Conclusions

This procedure has been developed in veterinary practice on several hundred patients. The authors find it useful for diagnosis of milk flow disorders and for monitoring treatment.

<sup>a</sup>Equipment for teat endoscopy, The Butler Company, Dublin Ohio.