



Research

Improved Mycoplasma

“Antimicrobial peptides as adjuvants for vaccines against Mycoplasma bovis”

Project No. 0007-106

Research Institution: Vaccine and Infectious Disease Organization (VIDO)

Lead Researcher: Dr. Jose Pere-Casal

Objectives: To determine if small chains of amino acids known as antimicrobial peptides can protect against *Mycoplasma bovis* by stimulating a stronger immune response in newborn calves.

Background: *Mycoplasma bovis* has become a significant bacterial pathogen in commercial feedlots over the past decade or so. Since *Mycoplasma* bacteria lack a cell wall, antibiotics (which disturb bacterial cell walls) are not very effective for treating cattle infected with these bacteria. *M. bovis* is involved in bovine respiratory disease complex (BRD), and also plays a role in chronic pneumonia and polyarthritis syndrome (CPPS) in high-risk fall-placed feedlot calves. This syndrome has emerged as a leading cause of mortality in feedlot calves in Western Canada.

Calves with CPPS may also be euthanized due to severe lameness problems. There are many different strains of *M. bovis*, and although many calves become infected, not all become sick, and not all develop CPPS.

These researchers are working to develop an *M. bovis* vaccine that will be administered to newborn calves, followed by a booster before shipping to the feedlot. Various vaccine formulations will be developed and tested for effectiveness. This project is scheduled to be completed in 2010.

Implications of the Research: Reduced losses due to *M. bovis* will reduce antibiotic use in the feedlot and improve animal welfare.

