

# The Disease Mannheimia haemolytica

Being one of the factors that affect the animal rearing, health of the animal determines the quality and quantity of the products obtained from the animals.

Bovine Respiratory disease is the leading cause of the death of calves older than three weeks and it is the most costly disease producers fight on their farm or feeding operations and this make animal production challenging.

## Disease management

As mannheimia haemolytica pathogens go through calf's nostrils moments after they are borne and colonise nasal passages, stress and viral infections damage the lining of upper respiratory tract and the damage allow mannheimia haemolytica to invade lungs and multiply rapidly. This triggers macrophages and neutrophils to travel to lungs to ingest bacteria.

Similarly, rapid growing mannheimia haemolytica produce leukotoxins which impairs and kills macrophages and neutrophils. Destroyed macrophages and neutrophils release enzymes used to kill bacteria and released enzymes cause damage to lungs tissue resulting to pneumonia.

Bacterins are killed as they contain bacterial surface antigen which stimulate body to produce antibodies and when the infection occurs, antibodies recognise antigens on bacteria surface. Antibodies bind on antigens along macrophages and neutrophils to ingest the bacteria.

Furthermore bacteria do not contain substance that induce production of leukotoxins neutralising antibody and as a result bacterin may not protect animal from damage caused by

leukotoxins. Presponse SQ contains both bacteria of leukotoxin- neutralising antibodies which block destructive action of leukotoxins allowing in touch macrophages to ingest and destroy mannheimia haemolytica organisms reducing lung damage.

Finally Presponse SQ contains no whole cells or cellular debris which minimises vaccine reactions. Choose trusted vaccines that help protect cows and enhance their new responses to the unique adjuvant system.