Disease Control AFRICA

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Letaba Veterinary Practice and Consultancy

VETERINARY & BIOLOGICAL CONSULTANTS

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Mastitis Control Program

Key features:

- Accurate identification & monitoring of mastitis pathogens within herds.
- Vaccine formulation & production processes that are readily updatable to encompass the most current occurring mastitis-causing microbes in the herd.
- Vaccines contain an immune stimulant that activates sufficient levels of immunological protection in the udder. The vaccines are also safe for use in any animal (including pregnant animals).

Company introduction:

Letaba Veterinary Practice, Disease Control Africa and La-Bio Research (LVP) operate as one unit to deliver a comprehensive specialised veterinary service. LVP specialises in the control and prevention of diseases in the agricultural sector. Its facilities are registered with all relevant authorities and are on par with international standards. LVP has veterinary associates whom are specialists in the equine, poultry, dairy, sheep, game and feedlot industries.

The services of Disease Control Africa (DCA) include accurate identification, immunological and molecular analysis from which a comprehensive control program can be formulated to provide optimum protection. The specific vaccines, which are produced upon request, are inactivated and safe for use in any animal. It contains an immune stimulant (adjuvant) that activates the immune system to react specifically and will most effectively neutralise the pathogen.

Mastitis background & introduction:

Mastitis is a complex disease that can be caused by a vast variety of microorganisms (microbes). There are other causes as well since this is by definition an inflammatory reaction. Barring external factors such as trauma (milking machine and physical) and bad management, preventative control measures and treatment regimes usually fail to provide consistent protection. This is because there are many different species of microbes, ranging from infectious pathogens to normal environmental microbes, and various different strains of microbes of the same species that can cause mastitis. These species and strains all differ in their antigenic properties and resistance to antibiotics and disinfectants. These factors combined are the reason why no single vaccine, antibiotic or disinfectant would be effective against all mastitis cases, even within a specific herd.

DCA offers a highly effective control program that can be specifically formulated and readily updated according to microbial profile changes within dairy herds. The program includes isolation and accurate identification of microbes, antibiotic and disinfectant resistance testing on the microbes and the formulation and production of herd-specific vaccines. The vaccines are safe for calves, heifers as well as for pregnant and lactating cows. The vaccine application program can be adapted for dry cow and lactating herd treatment. It can also be integrated with the DCA calf scour vaccination programs. It is essential for the DCA mastitis control program to be integrated into an efficient herd management program that includes proper sanitary measures and conditions that promote optimum animal health. This mastitis control program does not interfere with any other treatment or vaccination programs. **It is strongly recommended to involve the herd veterinarian in the application and management of the program.**

Mastitis control program description

Sampling, storage & transport:

Identify quarters bearing mastitis or high somatic cell counts. Wipe the teat with a clean cloth containing methylated spirits or alcohol and allow to dry for approximately one minute. Strip the teat and then take a sample of milk into a clean, sterile and sealable container (e.g. test tubes or sample bottles). The container should not contain any additives. Samples of 2 ml to 5 ml are sufficient. Do not fill the container more than two thirds. Seal the container and place it in the freezer (milk contains natural preservatives for microbes). Milk samples can be stored in a frozen state for up to one month. The samples can be packed on ice in a cooler box and sent with overnight delivery to DCA. All containers must be marked with the cow number, quarter it was taken from and the date the sample was taken.

DCA sample analysis & pathogens:

The milk samples are analysed for microbes that can cause mastitis. The microbes are identified and cultivated in pure cultures. The isolated microbes are tested for antibiotic resistance against several antibiotics. Their susceptibility to disinfectants can also be tested upon request of the farmer or veterinarian.

Vaccine formulation, production & quality control:

The vaccine is formulated by selecting isolates which represent the entire spectrum of microbes that were isolated from the milk samples. These isolates are propagated and then inactivated prior to vaccine production. The vaccine batch is produced according to the exact number of dosages and packaged as requested by the farmer or veterinarian. Sterility tests are performed on each batch to ensure the product is safe for use. Only after completion of the sterility tests are the vaccines released to be dispatched.

Vaccine application:

At the start of the program, a primary vaccination is administered to the lactating herd followed by a booster vaccination 2 weeks later. After the booster vaccination, only one vaccination per month is required. The monthly vaccines are updated as new microbes are isolated. For dry cow treatment, the first vaccination is applied at dry up, followed by a booster vaccination at steam-up. As the cow then enters the lactation cycle, the normal monthly vaccination routine (with the rest of the lactating herd) is applicable.

Monthly sampling, vaccine updates & schedules:

Once the DCA mastitis control program has been initiated, constant mastitis monitoring and regular sampling need to be maintained. Milk samples can be collected during the month as mastitis cases occur and is kept frozen until transported to DCA. Send samples in one batch once a month to DCA. As new microbes are isolated, they are immediately included in the next vaccine and old microbes are left out where necessary. New samples should reach DCA at least 2 weeks prior to the next scheduled vaccination.

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Mastitis Control Program Diagram