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Vaccines and Their Use

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Today's livestock owners may understandably be confused about vaccines — which to use, when to use them, how to handle them, how to administer them. Not many years ago, only a few vaccines were available and most were of a similar type. Today, many different types and combinations are available to combat a growing list of diseases.

The purpose of any vaccine is to make an animal resistant to a specific disease. Mistakes in their use can and have cost producers thousands of dollars from undesirable effects or poor protection from disease. This publication discusses the different types of vaccines available and offers some general recommendations to help guide you in choosing and using them.

Serums or Antitoxins

Serums or antitoxins are made from blood serum from immune animals and are injected into susceptible animals for temporary protection. Protection provided by serums or antitoxins lasts only about 10 days, which may be long enough to stem an outbreak of disease or allow an animal to build its own immunity through vaccination or exposure to the disease. An example of this may be the commonly used enterotoxemia serum or antitoxin in young calves.

Vaccines

All vaccines cause the animal to build antibodies and other protection against a specific disease just as if the animal had contracted the actual disease. With few exceptions protection against the disease is not provided until about 2 weeks following vaccination. Some vaccines, such as enterotoxemia vaccine, require two injections.

There are two broad classifications of vaccines: killed and live. This becomes important in the way they are handled in storage and used in the field.

Killed vaccines generally cause a shorter duration of immunity than live products. Killed vaccine immunity usually lasts only a few months to a year depending upon the disease. Clostridial vaccines such as those used against blackleg are exceptions and yield long-lived immunity. Live vaccines most often confer an immunity for years. Killed vaccines are generally used against bacterial diseases while live vaccines are used against viral diseases.

Killed vaccines are divided into two general groups: bacterins and toxoids. Bacterins contain parts of or whole bacteria which are killed; toxoids contain the altered toxins produced by a bacteria. Both have the ability to produce immunity.

Live vaccines are made from viruses or bacteria which are enough different from the natural organism that they will cause an immunity but not the clinical disease when given to the animal. For modified live vaccines, such as BVD or IBR vaccines, the virus has been grown on cell culture and under conditions different from natural disease conditions. This changes the virus so it will not cause disease but will still produce immunity. Brucellosis Strain 19 vaccine contains a live natural variant of the bacteria which will produce immunity but not cause disease.

Generally, live vaccines should be handled more carefully than killed vaccines. Exposure to heat, ultraviolet light (sunlight) or chemical disinfectants may kill the microorganisms and thus make the vaccine ineffective. Be particularly careful to read and follow directions for using live vaccine. All vaccines, whether killed or live, should be refrigerated and administered with well-cleaned sterile needles and syringes.

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Vaccine Administration

Mixtures of vaccine are available which can be administered in one injection. Don't mix different vaccines yourself. The commercially mixed vaccines are known to be compatible for type of vaccine, carrier for the vaccine and route of injection.

Be certain that your needles are sharp, that your syringes don't leak and that both are clean and sterile. Be sure there is no air in the syringe when you load it. Air in the syringe when it is loaded will cause much of the vaccine to be wasted into the air or on the skin and hair. Only a partial dose will be administered and poor immunity will result. Air in the syringe is a mistake commonly made when groups of animals are injected.

Vaccines are designed to be used on healthy ani-

mals. Don't expect good immunity in sick or highly stressed animals.

Always read and follow the directions on the label. Administer only the recommended dosage by the routes prescribed for proper vaccine protection.

Don't save unused parts of bottles of vaccines for future use. They can become contaminated with undesirable organisms or become ineffective.

Always keep records on the vaccine used. Record the kind of vaccine, the manufacturer, place of purchase, serial number, date administered and the class of cattle to which it was administered. If trouble develops, you have a record.

If you are in doubt about vaccines, see your veterinarian for proper interpretation of vaccine care and administration.

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