

## **SMALL RUMINANT VACCINE PROGRAMS**

*KEVIN D PELZER DVM MPVM, DIPLOMATE OF ACVPM*

*VIRGINIA/MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE*

### **Small Ruminant Vaccine Programs**

#### ***Prepartum vaccines***

1) Does and ewes should be vaccinated 3 to 4 weeks prior to the time of parturition in order to provide colostral immunity to the neonates.

a) *Clostridium perfringens* type C and D

- Vaccine will cross protect against *Cl. perfringens* type B
- Vaccine prevents hemorrhagic enteritis and overeating disease

b) *Clostridium tetani*

- protects neonates from tetanus
- Especially important if horses have been/are on the premise
- Neonates at risk because of tail docking, castration, and dehorning

Note: the *Cl. perfringens* C and D and tetanus come in a combination vaccine

c) Parainfluenza 3

- protects against parainfluenza 3, a viral disease that predisposes neonate to pneumonia
- The product contains both PI3 and Infectious Bovine Rhinotracheitis Virus
- The product is given intranasally, 1/2 of the cattle dose – 1 ml in one nostril
- reduces the shedding of PI3 by dams and provides good colostral immunity to neonates

#### **Optional vaccine**

1. Clostridial 8 way vaccine

- I don't recommend because of the reaction that this vaccine causes, eg. abscesses, fever, malaise. This may cause the dam to go off feed and develop pregnancy toxemia.
- Vaccine contains *Cl. chauvei*, *septicum*, *novyi*, *hemolyticum*, *perfringens* C and D, and tetani

- except for perfringens C and D, and tetanus the other agents rarely cause problems in sheep and goats. One may encounter Cl. novyi, Black's Disease or Necrotic Hepatitis, if animals are infected with flukes.
- Vaccine should be given in the axillary space because of tissue reaction.

### **Preweaning vaccines**

1. Lambs and kids need protection against Cl. perfringens C and D because of feed changes and introduction to concentrates
2. Lambs and kids need a series of 2 injections given approximately 2 to 4 weeks apart.
3. Lambs and kids receive the first vaccine 2 weeks prior to weaning and the second vaccine, booster, at the time of weaning or shortly afterwards.
4. The combination Cl. perfringens C and D and tetani vaccine is used.

### **Prebreeding vaccines**

1. Vaccine is used to protect dams from aborting so need to administer 30 days prior to introduction of the males.
  - a) Campylobacter fetus subsp. intestinalis and jejuni vaccine (Vibrio vaccine)
    - Ewe lambs and doelings need a booster 3 weeks after the first injection and then again 60 –90 days later for a total of 3 vaccinations.
    - Timing of vaccine varies with vaccine manufacturer.
  - b) Chlamydomphilia abortus vaccine
    - Ewe lambs and doelings vaccinate 60 days and 30 days prior to introduction of males.
    - Vaccine has variable results and periodically goes off the market.
  - c) Clostridium 8 way for the ewe lambs and doelings 60 and 30 days prior to breeding **if** this vaccine is used.
    - Booster ewes and does 30 days prior to breeding

### **Rams and Bucks**

- CD and T yearly booster

– Foot Rot vaccine at the time administered to adult females

### **Other vaccines used in small ruminants**

#### 1. Foot Rot vaccine

- a) Can be used as a preventive as well as part of the treatment protocol.
- b) Should be given prior to the time of year in which foot rot prevalence is the highest. This is usually during wet times of the year – Eg. late winter/spring.
- c) Use the foot rot vaccine for sheep (FootVax)– contains strains against *Dichellobacter nodosus* (*Bacteroides nodosus*)
- d) Vaccine administration
  - Initially vaccinate and then repeat in 6 to 8 weeks
  - Does cause a high rate of abscessation
- e) Currently off the market

#### 2. Contagious ecthyma or Orf vaccine

- a) Do not use unless orf is on the property
  - is highly recommended for show animals as they often acquire the infection at shows
- b) Vaccinate replacement animals around 8 months of age, immunity lasts approximately 3 years so may need to revaccinate older animals
- c) Is a live vaccine that is infectious to humans, wear gloves
- d) Vaccine administration
  - must disrupt the skin surface
  - scarify the skin in the axillary space
  - paint vaccine on with a cotton swab
- e) Some recommend vaccinating neonates at 2 –3 days of age in the axillary space if a real problem in neonates

#### 3. K 99 E. coli vaccine

- a) Vaccinate with the same schedule as CD and T prelambling
- b) Use if problem with E. coli scours

#### 4. Rabies

- a) Expensive but may be indicated in areas endemic for rabies or in high value animals
- b) There is a 3 year vaccine