**Small Ruminant Vaccine Guidelines**

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\*\*Below are some General Guidelines for vaccination of Small ruminants. **Producers should ALWAYS discuss vaccines with your VETERINARIAN to develop the best risk based protocol for your specific herd.**

\*\* More in depth detail on specific vaccines can be found at the bottom

\*\* +/- = vaccine administration should be determined based on risk for disease

**Breeding stock**:

* Ewes/Does:
  + Pregnant dams:
    - \*\*CD&T vacc:
      * Given ~ 1 month prior to lambing/kidding
      * If previously unvaccinated give initial dose at ~8-7 weeks prior to delivery date and 2nd dose at ~4 weeks prior to due date.
    - Deworm all pregnant dams ~ 4 weeks prior to lambing/kidding with a dewormer labeled Safe for use during pregnancy
    - Note --For farms that have a history of coccidiosis in kids/lambs, it is recommended to start dams on a preventative medicated feed with Decoquinate or Monensin 30 days prior to lambing/kidding and can continuing for 30 days post lambing/kidding.
      * \*\*Follow label dosing directions closely and discuss you’re your veterinarian prior to initiating treatment
    - Recommend giving dams a calcium bolus the day prior to kidding/lambing and again ~12 hrs post kidding/lambing
  + Pre-breeding vaccines: given ~ 4 weeks prior to breeding
    - \*\*Clostridial vacc
      * CD&T vacc OR Clostridial combo vacc
        + Do not need to give both the CD&T vacc and the Clostridial combo vacc, choose one or the other based on your production system and herd risk
      * If it has been 6 months or longer since previous vaccine
    - +/- Campylobacter vacc
    - +/- Chlamydia vacc
    - +/- Caseous Lymphadenitis vacc
    - +/- Bacterial Pneumonia vacc
    - +/- Leptospirosis vacc
    - +/- Rabies vacc
* Bucks/Rams: given ~ 4 weeks prior to breeding
  + \*\*CD& T vaccine OR Clostridial combo vacc
  + +/- Bacterial Pneumonia vacc
  + +/- Caseous Lymphadenitis vacc
  + +/- Leptospirosis vacc
  + +/- Rabies vacc
* \*\*Check FAMACHA Scores and fecal egg counts for deworming ~ 4-6 weeks prior to breeding season

**Lambs & Kids**:

* Recommend giving kids/lambs a dose of Vitamin E & Selenium at birth to help prevent white muscle disease
* \*\*CD&T vaccine:
  + Lambs born to vaccinated dams:
    - Give 1st dose at ~6 weeks of age and booster 3-4 weeks later
  + Lambs born to unvaccinated dams:
    - Give 1st dose at 2-3 days of age and booster 3-4 weeks later, then booster again at ~2 months of age
* +/- Bacterial pneumonia vacc as early as 10 days of age depending on risk
* +/- Contagious Ecthyma vacc @ 1mo of age
* +/- Caseous Lymphadenitis vacc > 3 mo of age
* +/- Rabies vacc > 3 mo of age
* +/- Clostridial combo vacc @ 6 mo of age
* +/- Leptospirosis vacc @ 6mo of age
* Give first dewormer at ~4-6 months of age or based on FAMACHA and fecal egg count
* Coccidia outbreaks can begin at ~21 days of age

\*\***Pet Goats** with a small herd number housed on pasture or fed grass hay will likely only require the above protocol for the CD&T vaccine as kids plus a yearly CD&T vaccine booster thereafter in addition to deworming every 6-12 months based on FAMACHA scores and fecal egg counts.

* +/- Rabies vacc

**Feeder Stock**:

* \*\*CD&T vacc as lambs/kids
* \*\*Clostridial combo vaccine @ 6 mo of age
* +/- Bacterial Pneumonia vaccine
* +/- Caseous Lymphadenitis vaccine
* +/- Contagious Ecthyma vaccine

**Show Stock**:

* \*\*CD&T vacc as lambs/kids with yearly boosters thereafter
  + Alternate CD&T vacc and Clostridial combo vacc every 6 months
* \*\*Clostridial combo vacc @6 mo of age then yearly boosters thereafter
  + Alternate CD&T vacc and Clostridial combo vacc every 6 months
* \*\*Bacterial Pneumonia vacc @ 6mo of age
* +/- Caseous Lymphadenitis vaccine
* +/- Contagious Ecthyma vaccine
* +/- Leptospirosis vacc
* +/- Rabies vacc

\*\*About the vaccines:

* \*\*CD&T vaccine:
  + Covers Clostridium Perfringens Types C & D and Clostridium Tetani
    - Infection with Clostridium bacteria can cause a wide range of issue including: enteritis/scours, black leg dz, kidney dz, liver dz, sepsis and death.
    - Clostridial bacteria are found naturally in soil, on skin and are a part of the normal GI flora but can invade deeper tissues and cause disease through lacerations and wounds or if over growth occurs in the GI tract.
  + \*\*This is the minimum coverage all small ruminants should have every year!
  + On most hobby farms or with pet small ruminants this might be the only vaccine you need.
  + Vaccination schedule:
    - Refer above for vaccinating kids/lambs and pregnant ewes/does.
    - Previously unvaccinated adults:
      * Give 2 doses 3-4 weeks apart
    - Previously vaccinated adults:
      * Booster every 6-12 months depending on herd history and feeding program.
        + Herds with a history of frequent Clostridium infections or herds receiving a large portion of grain in their diets should be vaccinated every 6 months with either a CD&T vacc OR a Clostridial combo vacc.
        + Herds with low risk for Clostridium and fed grass hay diets only need vaccinated yearly.
  + Vaccines:
    - BarVac CD&T, Essential 3+T and Bovilis Vision CD-T with Spur
      * labeled for use in sheep and goats
* Clostridial combo vaccine:
  + Protects against more species of Clostridium than does the CD&T vaccine
    - Replaces the CD&T vaccine in high risk animals or can be alternated with a CD&T vacc every 6 months
  + Used for high risk goats/sheep being fed high concentrate feeds or in herds with a history of disease outbreaks
  + Give initial dose at 6 months of age and booster ~ 3-4 weeks later then annual booster thereafter
  + Vaccines:
    - Ultrabac 7,Ultrabac 8, Bovilis Vision 7, UltraChoice 7,Caliber 7 and Bovilis Covexin 8
      * labeled for sheep
      * off label use for goats
* Caseous Lymphadenitis (CL, Corynebacterium Pseudotuberculosis) vaccine:
  + CL is a Bacterial infection that causes abscess formation in lymph nodes, weight loss, reproductive issues and economic losses
    - Primarily spread via contact with puss from abscesses
    - Zoonotic - can be transmitted to humans
  + For use in uninfected sheep with high exposure risk to CL
  + Commercial vaccine labeled for use in sheep, can help prevent clinical signs of disease but not 100%
    - Vaccine labeled for use in sheep can cause serious side effects in goats
  + Do NOT give to lambs less than 3 months of age
  + Do NOT use in animals already infected with or showing signs of CL as the vaccine can cause worsening of the condition
  + Vaccines:
    - Corynebacterium Pseudotuberculosis bacterin toxoid vaccine by Colorado Serum Company
      * Labeled for use in Sheep
      * Not recommend for use in goats due to high vaccine reactions
      * Follow label directions
* Contagious Ecthyma (Orf/Sore mouth) vaccine:
  + Causes open sores primarily observed around mouth and nose and transmitted by direct contact with sores or scabs
    - Zoonotic
  + ONLY use on animals belonging to a persistently infected herd
  + The Vaccine can infect animals with Orf if used on herds without infection
  + Vaccinate lambs/kids around 1 mo of age or at weaning and booster 2-3 months later followed by annual re-vaccination thereafter
  + Yearly Vaccination for show goats from an infected herd should be given at least 6 weeks prior to first show
  + The vaccine is administered by rubbing the vaccine over a scratch on the inner thigh, foreleg, inner ear or underside of tail
    - If the vaccine was successful irritation (raised and inflamed tissue) will be observed at the scratch site ~7-10 days later
    - 12-14 days later the scab will fall off, the scratch site will heal and immunity will have occurred
    - Vaccinated animals should be separated from unprotected animals until the scabs fall off
  + Vaccines:
    - Ovine Ecthyma vaccine by Colorado Serum Company
      * Labeled for use in Sheep and Goats
      * Follow label directions closely
* Campylobacter vaccine:
  + Campylobacter is a bacterial infection that causes GI disease, infertility and abortions late in pregnancy in ewes
    - Transmitted by oral contact with infected tissues or feces
    - Zoonotic
  + Used in high risk sheep herds
    - Risk factors include: high density herds, new sheep coming into herd, poor husbandry
  + Rarely observed in goats
  + Follow label directions for dosing, Annual booster recommended ~ 4 weeks prior to breeding
  + Do NOT use the vaccine labeled for cattle in sheep
  + Vaccines:
    - Campylobacter fetus-jejuni bacterin by Colorado Serum company
      * labeled for use in sheep
* Chlamydia vaccine:
  + Chlamydia is a bacteria that causes abortions in the last 2 months of pregnancy, conjunctivitis/eye infections, arthritis and pneumonia
    - Transmitted by direct contact with infected animals
    - Zoonotic
  + Used in high risk herds
    - Risk factors include: high density breeding operations, new animals being introduced to the herd, Bucks/rams being used to service multiple herds
  + Follow label directions for dosing, annual booster recommended ~ 4 weeks prior to breeding
  + Vaccines:
    - Chlamydia psittaci bacterin by Colorado Serum Company
      * Labeled for use in sheep
      * Off label for goats
* Bacterial Pneumonia vaccines for Mannheimia haemolytica and Pasteurella multocida
  + Use for show stock or animals going to feed lots or with high density herds housed in tight quarters
  + Can vaccinate lambs/kids as early as 10 days of age with a booster given 3-4 weeks later and a third dose given at 6 mo of age
  + Boosters for high risk animals should be given every 6-12 months.
  + Breeding stock should receive their yearly boosters prior to breeding season
  + Vaccines:
    - Mannheimia haemolytica - Pasteurella multocida Bacterin vaccine by Colorado Serum Company
      * Labeled for use in sheep and goats
* Rabies vaccine
  + No vaccine labeled for use in goats
  + Do NOT give to lambs/kids < 3 months of age
  + Zoonotic
  + Vaccines:
    - IMRAB Rabies vacc labeled for use in Sheep
* Leptospirosis
  + Leptospirosis is a bacterial infection that can cause abortions at any time during pregnancy, weak offspring, liver and kidney disease
    - Transmitted by drinking contaminated water
  + Sheep are relatively resistant
  + Risk factors: water source shared by wildlife, poor hygiene and poor management
  + Give first dose at ~6mo of age, booster 4 weeks later then booster every 6-12 months thereafter
  + Leptoshield by Zoetis
    - Labeled for use in Sheep and Goats in Australia
    - No labeled vaccine for sheep and goats in the US currently
* Parainfluenza 3 (PI3) vaccine:
  + Given to help prevent pneumonia in high risk show animals
  + No vaccine labeled for small ruminants
  + The only vaccine for Parainfluenza 3 is a cattle vaccine that comes as combo vaccine with Bovine Rhinotracheitis + Bovine Respiratory Syncytial virus (both of the latter have been shown to cause adverse reactions in sheep)
    - Intranasal Cattle vaccines – Inforce 3 or Nasalgen 3

Notes on Deworming:

* In our area most herds only need to be dewormed once per year
* I recommend checking **FAMACHA scores** **plus fecal egg counts** every 3-6 months to determine if certain herds or individuals within the herd need dewormed more than once per year.
* Make sure you are using the proper dose of dewormer based on weight and when in doubt it is better to give a slightly higher dose than it is to under dose on dewormers