**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