

# Edmonds Veterinary Services

Patrick L. Edmonds, DVM - Eva H. Edmonds, DVM

Scott W Schmidt, DVM - Gael E. Nichols, DVM

20645 Hwy 62 – Morris, OK 74445-2313

918 733-4525 - Fax 918 733-2759



## Vaccination Programs

### Calves Nursing ~ 3 months

Vision 7	(Intervet)	Blackleg 7-way, 2cc SQ dose, killed
Inforce 3	(Pfizer)	IBR,PI3 plus BRSV -intranasal
Pyramid 5 & Presponse SQ		IBR,BVD,PI3 & Mannheimia 2cc SQ, MLV
EVS Autogenous Pinkeye vaccine – recommend if having any pinkeye infections		

### Calves – Preweaning: 1-4 wks Prior or the Day of Weaning

Vision 7  
Inforce 3  
Pyramid 5 & Presponse SQ  
EVS Autogenous Pinkeye vaccine – recommend if having any pinkeye infections

#### **Breeding Replacement Animals**

Spirovac L5 – (booster 3-8 weeks – i.e. Postweaning vaccs)

### Calves - Post weaning: 3-4 weeks

#### REPLACEMENT HEIFERS & BULLS

Brucella abortus (calthood) Replacement heifers  
Express FP 10 or Bovishield Gold FP 5 L5HB  
Replacement and breeding animals-bulls and heifers

#### OPTIONAL:

Pinkeye Vx –booster post wean	EVS Autogenous Pinkeye Vaccine
Lutalyse or Estrumate	Assure weaned heifers are not pregnant

### Yearling Bulls & Heifers

Express FP 10 or Bovishield Gold FP 5 L5HB  
Vision 7 3<sup>rd</sup> dose  
EVS Autogenous Pinkeye vaccine

### Replacement Heifers 1.5 years old (Prebreeding?) – for heifers bred to calve at 2.5 yrs

Express FP 10 or Bovishield Gold FP 5 L5HB  
Vision 7 4th dose  
EVS Autogenous Pinkeye vaccine

AND / OR

### Replacement Heifers (Prebreeding & Open) – 2 yrs old

Express FP 10 or Bovishield Gold FP 5 L5HB  
Vision 7 5th dose  
EVS Autogenous Pinkeye vaccine

# PLAN 1

## PREFERRED MANAGEMENT

### Breeding Females & Herd Sires

#### PREBREEDING PROGRAM

Breeding Soundness Examination (BSE) and Preventative care of herd sire bulls

Parasite (internal & external) evaluation and program

Cow Herd Evaluation –

Screen cow herd – CULLING CRITERIA

ID Systems

Records

**Express FP 10 – or - Bovishield Gold FP 5 L5HB**

**IF 1<sup>st</sup> DOSE –**

**COW MUST BE NON-PREGNANT**

**Consult with veterinarian**

**Anaplasmosis –** (LSU Vaccine) Management utilization

Anaplasmosis vaccine has been effective in controlling Anaplasmosis problems in herds in our locale. Ideal vaccination time would be spring of year prior to vector season. The first year utilization does require a booster vaccination in 3-8 weeks for best results. Annual vaccination is required. No side effects or problems known, seen or documented.

**EVS Autogenous Pinkeye vaccine -** History and prevention, booster recommended

Contains 5-6 isolates from both Moraxella bovis and Moraxella bovoculi.

Isolate origination solely from EVS clientele cattle – significant pathogens.

#### WEANING TIME

RECORDS – WEIGHTS & PERFORMANCE

Pregnancy examination cows

Parasite management

Cull – identify – market options

VACCINES

**Lepto 5**

**Vision 7** – give every 1-3 years to adults – per some recent data and information

**ScourBos 9** - < 4 months prior to calving,( ie. PG check) - annually

**ScourBos 4** - < 4 weeks prior to calving first season

\*\*\*\*\* OR \*\*\*\*\*

## PLAN 2 PREGNANT COWS AT RISK

### Breeding Females –

**Cows are pregnant – unable to  
vaccinate herd when cows are open**

#### Spring

**Triangle 10 -or - Virashield 6L5 (HB) – or Cattlemaster 5L5  
- PRODUCT SAFE FOR PREGNANT COWS**

Annual vaccination following

EVS Autogenous Pinkeye vaccine      History and prevention, booster recommended  
Anaplasmosis      (LSU Vaccine) Management utilization  
LongRange dewormer – recommend – discuss with veterinarian

#### Fall

##### **Lepto 5**

**Vision 7** – give every 1-3 years to adults – per some recent data and information

Scours Vaccines?

**ScourBos 9** - < 4 months prior to calving,( ie. PG check) - annually

**ScourBos 4** - < 4 weeks prior to calving first season

# Vaccination Information

## Calves Nursing ~ 3 months

This is the first working of nursing calves and an excellent time to castrate, dehorn, worm etc. The first dose of blackleg needed prior to losing maternal protection at about 4-5 months of age and Vision 7 is my choice of products. Inforce 3 (intranasal vaccine) for IBR, PI3 and BRSV (Bovine Respiratory Syncytial Virus). The only BRSV vaccine on the market that one dose will create immunity, with all other BRSV vaccines requiring a second dose (booster) for creation of immunity. Highly recommend for all calves, dosing at about 3 months and again at weaning time. Excellent vaccine and easy to use with an automatic syringe. Use intranasal cannulas provided and a new one per calf.

The MLV (modified live virus) vaccines –“Pyramid 5 & Presponse SQ”, “Express” and “Bovi-Shield Gold FP 5” - can be used in nursing calves to generate excellent viral immunity. Pay attention to the label and visit your veterinarian about this product. I would definitely recommend the use of a Mannheimia (Pasteurella – Shipping Fever) vaccine for bovine respiratory disease (BRD). Two excellent vaccines are available:

Presponse SQ	Boehringer Ingelheim
One Shot	Pfizer

Pinkeye problems have become more severe and common than in the past. EVS recommends vaccination in herds with history or problems. Pinkeye vaccines should be administered prior to the fly season, late winter or early spring. EVS has gone to considerable effort and expense to isolate the pinkeye pathogens in our clientele herds and have discovered why commercial vaccines are not very effective. Pinkeye is caused by the bacteria *Moraxella* with two species *M. bovis* and *M. bovoculi*. Only *Moraxella bovis* is available in the current commercial products. We have submitted many culture isolates to Newport Laboratories for autogenous vaccine production. During the past six years, EVS Autogenous Pinkeye Vaccine has performed with excellent results in preventing pinkeye infection and incidence in eastern Oklahoma. Over 150,000 doses have been utilized safely. Highly recommend this vaccine if pinkeye has been a concern or problem. We use in all ages and stages of cattle with recommendation of vaccinating the entire herd. Initial vaccination should be followed with a booster vaccine in about 3-8 weeks and annual vaccination subsequent.

## Calves Preweaning - Weaning

The best scenario is to give the weaning vaccines about 2-4 weeks prior to weaning for many reasons:

- 1) Less stress at the time of vaccination
- 2) Better immune response to vaccines administered
- 3) Higher immunity achieved
- 4) Immunity will be at a peak at the time of highest stress
- 5) Initial immune response requires 7 – 10 days
- 6) About 25% of calves fail to develop amnestic (memory) response statistically from initial vaccinations (one major reason for re-vaccinating calves)
- 7) If wreck does occur at weaning then can be at least one to two weeks closer to being out of wreck.

Stress is the key. If the producer is able to gauge and calculate the level of stress that will occur at weaning, then this insight will greatly assist in predicting the need for pre-weaning vaccinations versus weaning day vaccinations or even more limited vaccination use. This would also apply to the utilization of boosters for viral vaccines and/or Shipping Fever (Mannheimia). I do not know of any producers who have the answers to all of these questions; just too many variables. Every calf that is weaned should receive a Vision 7, intranasal Inforce 3, Pyramid 5 & Presponse SQ or Bovishield Gold FP 5 with a Mannheimia/Pasteurella vaccine.

Gram-negative vaccines do affect intake and performance and not more than 3 should be given at one time to healthy calves. Gram-negative containing vaccines include: blackleg, Mannheimia (Pasteurella or Shipping Fever), calfhood vaccination for brucellosis, pinkeye, E. coli scours and Hemophilus somnus. I like to give pre-weaning vaccinations to decrease the stress of gram negatives. At the time that I turn the calves out of the weaning pen/pasture and/or move to pasture (3-8 weeks post weaning), I will calfhood vaccinate replacement heifers, Spirovac L5 booster, and abort (Lutalyse / Estrumate) heifers. Vision 7 (blackleg) and/or Autogenous pinkeye booster and dewormer may be needed if not done prior to or at weaning.

Replacement heifers need some special attention at this time. I will give a heifer at least 4 doses of Vision 7 by the time she is about 2 years of age. Modified Live Viral (MLV) vaccines provide the best immunity (compared to killed or inactivated) and I want at least two doses in heifers prior to the first breeding. Utilize a dose of Pyramid 5 & Presponse SQ, Express 5 or 10; or Bovi-Shield Gold FP 5 in 3-month-old calves and at weaning. Post weaning and prior to first breeding use Express 10 or Bovishield Gold FP 5 L5HB. I highly recommend HB products in progressive, registered or affected herds – and discussed below. Any female that is vaccinated with Express or Bovi-Shield can then be safely vaccinated anytime within the following year (annually) with these same vaccines, whether pregnant or not.

**CAUTION: Do not give initial dose of Pyramid, Express or Bovi-Shield to a pregnant female, since this can result in abortion in about 10% of pregnant naïve females.**

Growthy or aged replacement heifers can be pregnant at the time of weaning. The use of prostaglandin products (Lutalyse or Estrumate) terminates pregnancies less than 3.5 – 4 months duration almost 100%. Estrumate may be a little more effective for 4 month pregnancies. I like to do this at the time that steers/bulls and heifers are separated and turned out of the weaning pens to grass pastures. This is also an excellent time to give the brucellosis vaccination for replacement heifers. This vaccination is not required, but is a mark of management, and is recommended if heifers may be sold for replacement females or marketed across state lines. Currently brucellosis vaccination has been providing value added income for replacement heifers.

Spirovac (Zoetis) is a vaccine (HB denoted) for Lepto hardjo-bovis (*Leptospira borgpetersenii serovar hardjo bovis*) infection in cattle. It does require two initial vaccinations given at 3-6 week intervals. This is a very effective reproductive vaccine and I would recommend giving the first dose at pre-weaning if possible and then the booster 3-6 weeks later post-weaning. The initial dose can also be given to young replacement animals at branding time (3 months of age). Annually a single dose is given to adults. We highly recommend that breeding replacements receive initial vaccination at weaning time and the first booster 3-6 weeks later with the next annual vaccination occurring at a year of age. Our traditional 5-way Leptospirosis vaccines (do not contain *Leptospira borgpetersenii serovar hardjo bovis*) should be administered to replacement females in like manner to HB vaccines. Annual vaccination should be given to females at about 3 months of gestation or twice yearly, which ever is most feasible. We recommend twice yearly vaccination, each spring and fall. Bovi-Shield Gold FP products can be utilized that have combinations of Lepto 5, Vibrio and HB (Spirovac-hardjo-bovis). Other HB products on the market do not appear to measure up to Spirovac and are not recommended. These products do not contain *Leptospira borgpetersenii serovar hardjo bovis*, do not have efficacy studies, comparable duration of immunity or have no data. Cheaper is definitely not always better.

Fetal Protection products are excellent and should be utilized if at all possible. This will require the initial dose to be given at a time when the female is not pregnant. After this initial dose, then a booster can be given each subsequent year annually anytime without regard to pregnancy. If this is not feasible, then a killed vaccine (two initial doses required) will have to be utilized to provide protection against viral disease affecting reproduction. We have many herds that have gradually implemented MLV Fetal Protection (Express 10 or Bovi-Shield) vaccination in the adult female herd by vaccination of cows as they became open. Please discuss FP products with your veterinarian.

CattleMaster Gold FP 5–L5 is the benchmark of inactive/killed reproductive vaccines. Virashield (Novartis) and Triangle (BI) are killed viral vaccines being user friendly, not requiring mixing and in multidose form. Some killed vaccines can leave some injection site blemish/knots and especially if needle hygiene is improper. Inactivated and killed vaccines require two initial doses at 3-6 week intervals followed by yearly vaccinations. If not willing to give 2 does initially in a 3-12 week interval, then should not administer a single dose with expectations of achieving protective immunity from vaccination. Two doses per label can be effective, but one dose will not provide expected results. These are safe vaccines to administer to pregnant or cattle of unknown pregnancy status. Some

label claims does not provide fetal protection against BVD infection, which is a very important consideration.

Spirovac (Zoetis, HB designation on label) should be utilized in the well-managed beef cowherd. Research indicates that about 40% of leptospirosis abortions are due to *Leptospira hardjo-bovis* and this is the best vaccine that will provide protection for 12 months plus. This serovar of Lepto is not found in the traditional 5-way Lepto vaccines. As stated previously, need two initial doses at 3-6 week intervals followed by single yearly vaccination and safe to use in the pregnant female at any time. Also should be given to all herd bulls to decrease incidence of venereal transmission and carrier animals.

An anaplasmosis vaccine is available from Louisiana State University that has been a great tool to prevent disease and death. EVS has used this product starting in 2000 with good effectiveness and results. Herd sires and the older female (4+ years of age) are at the highest risk of death. Recently we have seen 2 year old fall calving heifers with clinical disease and death due to Anaplasmosis. Two doses are recommended the first year (3-8 weeks apart) followed by yearly vaccination. Cost is about \$8.00 / dose. This vaccine has not created any problems or side effects in any herds vaccinated. Excellent vaccine to use for control of Anaplasmosis in herds.

The EVS Autogenous Pinkeye Vaccine has been the most effective Pinkeye vaccine in our hands, but we must also control flies and pasture canopy of weeds and seed heads. Vaccination of herds has greatly assisted the control and severity of pinkeye in herds, but vaccine alone cannot guarantee total control. Vaccine will not allow management to be ignored, but can prevent an outbreak in your herd. It also appears that vaccination repetition (yearly or twice yearly) has greatly decreased farm pinkeye incidence. We are very excited about this vaccine and it has provided an excellent response in preventing and decreasing clinical pinkeye infections in our vaccinated herds. This is a licensed USDA vaccine and has greatly exceeded the results obtained from commercial vaccines.

Zoetis's Scour-Guard 4KC is recognized as the best scours vaccine but does require two initial doses 3-6 weeks prior to calving and annual vaccination prior to calving. Scour Bos 9 (Elanco) has been utilized and has decreased the incidence of scours and treatment for scours in our own calves. This vaccine has a label that allows vaccination at the time of pregnancy check or about 3-4 months prior to calving. To assure protection against viral scour agents, Scour Bos 4 should be administered as a booster about 4 weeks prior to calving the first year. Annual Scour Bos 9 vaccination 3-4 months prior to calving is recommended. A scour vaccine should be implemented at least for first calf heifers and also the adult herd in some situations.

Calf scours can become a management (or non-management) issue. In our locale we have dodged scours by feeding in clean areas, moving feeding areas around on the pasture and keeping calf scours diluted by watching stocking rates. Sometimes bad luck, rain and stress can drop a bombshell of scours. I am convinced that calf scours vaccination will not overcome poor management concerning pasture fecal contamination. Vaccination is not convenient for some producers.

Vibrio vaccines are available as Vibrin or in combinations with Virashield, CattleMaster, Express and Bovishield products. We are not aware of a Vibrio problem in this area for the typical producer. If herd sires are introduced into the breeding herd as young virgins, then Vibrio will probably not be as likely, unless the neighbor's bull travels to your premises? Vaccination can be effective and the best product is Vibrin, which is given immediately prior to breeding. Vibrio vaccines other than Vibrin only provide about 3 months of protective immunity, thus vaccination should be administered at the beginning of the breeding season. Well-managed herds should utilize prebreeding vaccines that contain Vibrio.

For many producers the cost of products is of primary concern and EVS will be glad to drop ship orders to your door via UPS. Clients must be established with a valid veterinary-client-patient relationship to participate. This process eliminates the overhead expenses that we encounter when products are received, invoiced and warehoused in our clinic. The typical savings is about 15%. Orders need to be over \$275 to obtain free shipping. Orders placed by early afternoon will usually be at your facility the next day.

Parasite control is important in eastern Oklahoma. Adult animals should normally be de-wormed twice yearly, typically spring and fall. Strategic worming is highly recommended. Several products are available and a class III product should be utilized (Dectomax, Longrange or Cydectin). We have seen decreased efficacy of Ivomec and do not use this product. Research literature also documents this same finding. I would remind that generic de-wormers are allowed 20% variance from the parent

compound. The majority of the active ingredient of generic Ivomec is manufactured overseas and shipped here. It appears that the isomer ratio in the foreign product is reversed from the original parent compound and this could translate into another 20% decrease in product effectiveness. The original product contained a cosmetic grade carrier and most generics lack this and thus more effectiveness is lost. A generic product could be 60% less effective. I would absolutely not recommend a generic Class III dewormer. This may not always be as good a buy as it appears, especially if the minimum dose of the parent compound was for control of the most economically important parasites. Rotation, route of administration, environment and duration all interact in product selection. You will need to look at lice control also. Injectable products are effective for sucking lice but not chewing lice. EVS tends to use injectable products on young stock (especially weaning) and pour-on for adults. Pour-on products are effective and do eliminate one more injection, which may be very important in Anaplasmosis prevention. Pour-on lice, tick and fly control products that we utilize are Cylynce and CDS Permethrin.

LongRange is a new model cattle dewormer which has provided great results in its first two market seasons. It has effectiveness up to 150 days for some parasites. EVS has been very pleased with the performance of herds using the dewormer. Parasite examinations into the late fall and early winter demonstrated long term control of intestinal parasites in grazing cattle. We have used LongRange in all classes of animals in our herds for the years 2013 - 2015 with very positive effects.

I believe that the key to utilization of LongRange is the ability to create very low parasite levels in our grazing pastures. I think that the static herd that resides in an improved pasture for the entire grazing season with moderate to high stocking rate will benefit from LongRange. Completion of this growing season will assist in our assessments.

Fly control is important and should not be ignored. I like fly tags because of the time and labor constraints that I have in my cattle operation. If time and labor are more flexible, check into sprays, mist, pour-ons, rubs, etc. I have recently seen some novel rubs, which are automated to provide continued charging of the rub. Fly control will help decrease pinkeye, IBR and other diseases transmitted or aggravated by flies. During the last 4-5 years we have been fortunate to have fly control tags that have been effective. The ones that are most effective in general are the newest marketed products, but they are not the cheapest. It has been our experiences that fly tag control is for about 3-4 months, so we need to place tags so that they will be effective during the most severe fly months (June, July, and August).

Nursing calves should be de-wormed 2-3 times by weaning/post weaning, depending upon the pasture and environment. Class III products will provide about 1 to 3 months of parasite control depending upon your management. This should influence your de-worming schedule. Strategic deworming is always smart. From weaning till 2 years of age, stock will need to be de-wormed every 3-6 months with consideration for grass type, stocking rate, grass coverage, and maturity of the animal. Fecals can be beneficial when performed on a percentage sampling. LongRange can create entire grazing season control of intestinal parasites with just a little management. This is very likely to change our concept of parasite control for the young grazing animal.

Coccidiosis is a problem in this area and I would highly recommend the use of an ionophore in commercial supplements for calves. Many feed milling companies can supplement Bovatec or Rumensin into feeds. Rumensin is more flexible to use when animals consuming the product have a wide weight range. Ionophores are toxic to horses, so do not use if horses are present or manage feed to prevent horse exposure.

Breeding Soundness Examination (BSE) of bulls prior to the breeding season is necessary insurance and management. We utilize the standards set forth by the Society for Theriogenology and provide written percentile scores, which emphasize morphology. Heat and cold stress, disease, fever, fighting, trauma, injury, infection and ageing processes can result in herd sires becoming sterile or sub fertile. Shelter from extreme heat or cold is also important. We have seen several instances where bulls had neither shade from extreme heat nor a windbreak from extreme cold that has created tremendous impact on BSE scores.

I believe in establishing production parameters for the cowherd and then culling by those standards. Fertility, production, growth, structure, disposition, milk production, mothering, maintenance requirements and many other factors are selectable. I do not believe in making excuses for poor cow performance. Pregnancy checking is an out of pocket expense, but a partial budget will demonstrate that the expense is economical; unless you do not have production parameters and can tolerate cows calving at 18-24 month intervals.

Mineral supplementation and requirements for cattle in eastern Oklahoma can become a confusing issue. OSU Beef Extension indicates that we are fortunate in our area and do not have major or minor mineral deficiencies. Many stories of mineral deficiencies are anecdotal and without merit. Grazing beef cows have limiting minerals of calcium and phosphorus, which can be supplemented in ratios of 1:1 up to 2:1. Supplementation with dicalcium phosphate provides this very nicely. OSU Beef Extension has shown that utilizing salt (also a needed mineral) with dicalcium phosphate in a 50-50 mix can create appropriate intakes. Fall calving cows can be fed 1/3 salt and 2/3 dicalcium phosphate. These products can be purchased at most feed stores. A common trace mineral supplement is the "triple 12" products and cost @ \$15-22 / 50# sack. Intake values that I have seen are about ¼ lb / head / day. I think that intake is very variable and do not get too excited about hitting a target mark, probably more important to have some available for cows free choice. We use mineral supplements as a vehicle for Chlortetracycline (CTC) administration for Anaplas, foot rot and pinkeye control. Coming soon is the VFD (veterinary feed directive) government regulation which will not allow the random free choice utilization of antibiotics (CTC) to deliver to livestock in feed or water. A prescription will be required for the use of antibiotics in feed or water for prevention and treatment only. This regulation is effective January 1, 2017.

If commercial feeds are being fed to cows, they will provide minerals and vitamins. There are several trace mineral compounds available. Stillwater milling has a trace mineral – vitamin mix that can be fed or mixed. Livestock Nutrition Center has a premix, which will cover all the bases. I am not a proponent of high value mineral mixes that provide answers to fescue toxicity, anaplasmosis, foot rot, and other cow problems. I believe that too much is advertising hype, as do OSU nutritionist.

We do feed chlortetracycline (CTC) to cattle year round in our free choice loose mineral supplement to help prevent Anaplasmosis infection, along with foot rot etc. Daily intake goal is 500 mg / head / day, but it appears that even lower doses (300mg?) may provide more protection that we thought in the past. It is recommended to feed chlortetracycline during the fly season, May through frost for Anaplasmosis. This should assist in providing protection against anaplasmosis outbreaks, but cases still may occur which will require some attention. This can arise from cows, which do not eat enough chlortetracycline or have been exposed to excessive organisms. Again fly control can help some with the spread, but we do not have good means of horsefly control. Ticks are also a very important source of transmission. Monitor and treat cattle accordingly. A common finding is an outbreak of anaplasmosis after a working of the cowherd at which time intramuscular (IM) vaccines have been administered. Always use a subcutaneous (SQ) route for vaccine if labeled. IM injections can transmit Anaplas between animals.

50 gm chlortetracycline: Dose is 0.01 lb / cow / day  
50 lb sack will treat 50 cows for 100 days

4 gm chlortetracycline: Dose is 0.125 lb / cow / day  
50 lb sack will treat 50 cows for 8 days

We are not big fans of liquid feeds, since the majority have urea or other NPN (non-protein nitrogen) as part of the protein source. These type feed products typically do not complement cattle on grass. Natural protein sources are always a better-utilized product. The price of the protein is usually much more expensive in these types of applications. There are some very legitimate scenarios where bulk protein sources are advantageous from management standpoint even though the price/lb. protein is premium. Large solid protein tubs can provide necessary protein supplementation for the herd during the week when the owner may be off the ranch working.

There are many aspects of herd health management and it is impossible to cover all items in a short document. Please feel free to contact me with any questions that you may have.

Sincerely,

Patrick L. Edmonds, DVM  
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