CATTLE VACCINATION IN CALIFORNIA

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COMMENTS: There are many vaccines for use in cattle. The decision to use a vaccine depends on many factors, including the probability of disease in your local area, the age of your animals at risk, the financial danger to you if a disease outbreak occurs, the cost and quality of protection afforded by a specific vaccine. It is not possible to give a set of vaccination recommendations that fit all conditions. Since some vaccines can cause problems themselves, all users should be well informed before planning their immunization program. Your local veterinarian can best advise you as to the specific diseases present in your area and what vaccines are being used to good effect. Purchasing a bottle of vaccine and injecting it may not be enough....good nutrition and management procedures are necessary for cattle to obtain protection. Your Veterinarian and your Livestock Farm Advisor can help you make intelligent and economical decisions in fitting your vaccination schedule into an overall program for efficient production.

TYPES OF VACCINES: Vaccines can be divided into two types: killed or inactivated and modified live. They can also be divided into monovalent (against one disease) or polyvalent (against several diseases). They are generally applied at specific times in the animal's life to establish protection before the disease is most likely to occur. Immunity from vaccines is best a few weeks after it is applied and most vaccines need to be reapplied on a 6 month to 1 year basis.

Common times that cattle are vaccinated, depending on the disease and the vaccine: immediately after birth, at 2-3 months of age (marking time), at 7-8 months of age (weaning), at replacement heifer selection time, and once or twice a year thereafter (depending on the program). Preconditioning is a special program usually including vaccination against Shipping Fever pneumonia organisms which is done a few weeks before weaning.

PRECAUTIONS: Always read the package insert instructions that come with the vaccine before purchasing and before using. Some vaccines can cause abortions and deaths if not properly used. Some vaccines require refrigeration and/or protection from sunlight to be effective. All have an Expiration date. When you use a vaccine, keep that part of the vaccine box for your records that has the serial number.
and expiration date, note the number and kind of stock and the date it was injected. If you suspect problems were caused by the vaccine, your veterinarian can help you check it out by calling in your data to the U.S.D.A., since they keep a box of each and every serial of vaccine produced until 6 months after the expiration date. If the instructions say two doses are needed, give both doses, since the first dose won't give any protection by itself.

SELENIUM DEFICIENCY: This problem is widespread in California cattle and the lack of adequate selenium can impair the immune system's ability to respond to a vaccine. So, check with your Veterinarian or Farm Advisor for advise on how to make sure your cattle are selenium sufficient so the vaccines you buy can give the protection you need.

VIRUSES

CORONAVIRUS - A BABY CALF DIARRHEA NOT GENERALLY SEEN IN CALIFORNIA...ORAL VACCINE IN NEWBORN CALVES.

PAPILLOMA - WARTS GENERALLY SEEN IN YOUNGER ANIMALS...INJECTABLE KILLED VACCINE. AN AUTOGENOUS VACCINE MAY BE REQUIRED.

PARALINFLUENZA TYPE 3 - MAYBE INAPPARENT OR MAY CAUSE PNEUMONIA

ROTOVIRUS - NEWBORN CALF DIARRHEA...ORAL VACCINE.

VIRUS DIARRHEA - DIARRHEA, NASAL DISCHARGES, DEATHS OF CATTLE OF ALL AGES...KILLED OR LIVE VACCINE, NASAL OR INJECTED...SOME VETERINARIANS USE IT ORALLY.

INFECTION RHINOTRACHEITIS - COUGHS, NASAL DISCHARGE, PNEUMONIA.

RABIES - DISEASE OF THE BRAIN THAT CAN BE TRANSMITTED TO HUMANS BY THE SALIVA OF INFECTED CATTLE; FATAL. SOURCE IS USUALLY SKUNKS, FOXES, DOGS, OCCASIONALLY BATS. SPORADIC AND CATTLE ARE NOT USUALLY VACCINATED IN CALIFORNIA.

AEROBIC BACTERIA

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BACILLUS ANTHRACIS - ANTHRAX, CAUSES SUDDEN DEATH IN CATTLE. LIVES IN SOIL MANY YEARS. CARCASSES REMAIN INFECTED. KILLS HUMANS ALSO. SOME LOCALIZED AREAS OF CALIFORNIA ARE CONTAMINATED AND CATTLE IN THESE AREAS REQUIRE VACCINATION.

BRUCELLA ABORTUS - INFECTIOUS ABORTION IN CATTLE AND UNDULANT FEVER IN HUMANS. LIVE STRAIN 19 VACCINE AVAILABLE ONLY THROUGH FEDERALLY APPROVED VETERINARIANS AND MUST BE GIVEN ONCE TO FEMALE CALVES LESS THAN 1 YEAR OF AGE (RECOMMENDATIONS VARY) AND CALVES MUST BE PERMANENTLY IDENTIFIED AS AN "OFFICIAL VACCINATE".

CORYNEBACTERIUM PYOGENES - SOMETIMES CAUSES PUS POCKETS UNDER THE SKIN OF NUMEROUS CATTLE IN A HERD. SOMETIMES CAUSES MASTITIS OR METRITIS. GENERAL VACCINES NOT ALWAYS HELPFUL. SOME AUTOGENOUS VACCINES HELP. THIS BACTERIA DOESN'T MAKE A GOOD VACCINE.

ESCHERICHIA COLI - USUALLY SEEN IN CALF SCOURS. SEVERAL SPECIFIC STRAINS. VACCINE AGAINST ONE STRAIN WON'T PROTECT AGAINST A DIFFERENT STRAIN. USUALLY VACCINATE DRY COW SO THAT THE FIRST MILK (COLOSTERUM) WILL PROTECT THE CALF.

HAEMOPHILUS SOMNUS - SHIPPIING FEVER PNEUMONIA AND/OR "T.E.M.E." OR BRAIN FEVER SUDDEN DEATH.

LEPTOSPIROSIS
  L. CANICOLA - USUAL SOURCE, DOGS AND SWINE.
  L. GRIPPTYPHOSA - USUAL SOURCE, WILDLIFE.
  L. HARDJO - USUAL SOURCE, CATTLE.
  L. ICTEROHAEMOMORRHAGIAE - USUAL SOURCE, RATS.
  L. POMONA - USUAL SOURCE, CATTLE, SWINE, AND SOMETIMES WILDLIFE.
THIS GROUP OF ORGANISMS CAN CAUSE NUMEROUS KINDS OF DISEASES, INCLUDING DEATH, MASTITIS, INFERTILITY, ABORTION STORMS, STILLBIRTHS, AND PNEUMONIA. CATTLE BECOME CARRIERS AND SPREAD THE ORGANISMS FOR MANY MONTHS THROUGH INFECTED URINE. CAN INFECT HUMANS.

PASTEURELLA HAEMOLYTICA - PART OF THE SHIPPIING FEVER PNEUMONIA COMPLEX. DOESN'T MAKE A GOOD VACCINE.

PASTEURELLA MULTOCIDA - PART OF THE SHIPPIING FEVER PNEUMONIA COMPLEX. DOESN'T MAKE A GOOD VACCINE.

SALMONELLA DUBLIN - DIARRHEA IN YOUNG CALVES, CAN ALSO CAUSE SUDDEN DEATH IN SOME CALVES. DOESN'T MAKE A GOOD VACCINE.

SALMONELLA TYPHIMURIUM - SIMILAR TO SAL. DUBLIN. THERE MANY STRAINS OF SALMONELLA. MANY CARRIER ANIMALS AROUND. USUALLY CAUSES DISEASE WHEN OTHER STRESSES ARE PRESENT.
DOESN'T MAKE A GOOD VACCINE.

STAPHYLOCOCCUS AUREUS - PUS FORMER. THE MOST COMMON METHOD OF TRANSMISSION IS BY WOUND CONTAMINATION WITH UNSANITARY INSTRUMENTS OR ENVIRONMENT. AUTOGENOUS VACCINE MAY HELP.

VIBRIO (CAMPYLOBACTER) FETUS - A VENEREAL DISEASE OF CATTLE SPREAD FROM INFECTED TO UNINFECTED CATTLE BY THE BREEDING ACT. BULLS MAY CARRY THE DISEASE OVER FROM SEASON TO SEASON. COWS EVENTUALLY "CLEAN UP". VACCINE NEEDS TO BE APPLIED 30 TO 45 DAYS BEFORE THE BULLS ARE TURNED IN WITH THE COWS FOR THE BEST RESULTS FROM THE VACCINE.

ANAEROBIC BACTERIA

CLOSTRIDIUM - (ENTEROTOXEMIA AND SUDDEN DEATH):
- CL. CHAUVEOI - BLACKLEG.
- CL. NOVYI TYPE B - BLACK DISEASE (NECROTIC HEPATITIS).
- CL. NOVYI TYPE D - REDWATER DISEASE (HEMOGLOBINURIA).
- CL. PERFRINGENS TYPE B - PETID DIARRHEA IN CALVES, DEATH.
- CL. PERFRINGENS TYPE C - HEMORRAGIC DIARREA IN CALVES, DEATH.
- CL. PERFRINGENS TYPE D - OVEREATING DISEASE, SUDDEN DEATH.
- CL. SEPTICUM - MALIGNANT EDEMA, SUDDEN DEATH.
- CL. SORDELLI - HEMORRAGIC EDEMA OF THE NECK REGION.
- CL. TETANI - "LOCKJAW" TETANUS.

ALL OF THE CLOSTRIDIAL ORGANISMS CAN BE DEADLY. THEY ARE WIDELY FOUND IN NATURE INCLUDING IN THE NORMAL GUT OF NORMAL CATTLE. THE VACCINES USUALLY NEED TO BE REPEATED TWICE EACH YEAR FOR BEST PROTECTION. SOME COMMONLY USED VACCINES HAVE 2, 4, 7 OR 8 OF THESE ORGANISMS. AN 8-WAY VACCINE IS CONSIDERABLY MORE EXPENSIVE THAN A 2-WAY VACCINE. SUDDEN DEATH AND OR FOUL SMELLING DIARRHEAS ARE COMMON OBSERVATIONS. SPECIFIC DIAGNOSIS OF THE CAUSATIVE ORGANISM CAN BE VERY DIFFICULT AND EXPENSIVE. VACCINATION RECOMMENDATIONS ARE USUALLY MADE ON THE BASIS OF CLINICAL HISTORY AND/OR POSTMORTEM EXAMINATION.

HEMATOPARASITE

ANAPLASMA MARGINALE - INFECTIOUS ANEMIA OF CATTLE WHICH IS TRANSMITTED FROM CARRIER CATTLE AND DEER TO SUSCEPTABLE CATTLE BY TICKS AND BITING FLIES, AND BY DIRTY HYPODERMIC
NEEDLES, DIRTY DEHORNING TOOLS, KNIVES, ETC. ANIMALS UNDER ONE YEAR SELL D, BUT AS ANIMALS BECOME OLDER THEY ARE MORE SEVERELY AFFECTED BY THE ANEMIA. ANIMALS OVER FOUR YEARS, ANIMALS THAT ARE IN THE LAST THIRD OF PREGNANCY, AND ANIMALS THAT ARE IN HEAVY LACTATION ARE MOST SEVERELY AFFECTED. ANIMALS ON HIGH ENERGY DIETS ARE MORE SEVERELY AFFECTED. THE U.S.D.A. APPROVED KILLED VACCINE IS SAFE FOR ALL CLASSES OF CATTLE. IT REQUIRES TWO DOSES A FEW WEEKS APART...REPEATED EVERYOTHER YEAR. IT CAN SOMETIME CAUSE DEATH IN CALVES BORN TO VACCINATED MOTHERS DUE TO AN "RH" TYPE BLOOD REACTION OF THE CALF'S RED CELLS TO ANTIBODIES IN THE MOTHERS COLOSTERUM OR FOREMILK (NEONATAL ISOERYTHROLYSIS). THIS RISK CAN BE REDUCED BY VACCINATING OPEN COWS AT THE TIME THE BULLS ARE TURNED IN. THE C.D.F.A. EXPERIMENTALLY LICENSED MODIFIED LIVE VACCINE NEEDS TO BE USED ONLY ONCE IN THE LIFETIME OF AN ANIMAL. THE AUTHOR FEELS ITS BEST USE IN IN OPEN REPLACEMENT HEIFERS UNDER 1 TO 15 MONTHS OF AGE SINCE IT CAN CAUSE SEVERE DISTRESS AND OCCASIONAL DEATHS IN OLDER ANIMALS. PROPERLY USED IT PROVIDES GOOD LONG TERM PROTECTION.