University of California Cooperative Extension

The Grazer's Gazette

A Newsletter about Livestock, Pastures and Rangeland **Volume 4: Number 2• July 21, 2005**
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After a wet June, summer is here and with the warm temperatures come flies. The following information is from UCCE Veterinary Specialist, Dr. John Maas' column in California Cattlemen's Magazine.

FLY CONTROL FOR BEEF CATTLE—2005

Cattle pests, such as flies, cost cattlemen by increasing treatment costs, lost production, irritation to the cattle, and because of the diseases they can transmit. California cattlemen report that face flies are the worst pest, followed by horn flies and stable flies.

Face flies, in addition to producing eye irritation due to their feeding behavior, serve as mechanical carriers of the causative agent of Pinkeye in cattle (infectious bovine keratoconjunctivitis [IBK] caused by the bacterium *Moraxella bovis*). Pinkeye consistently ranks as one of the top five most costly diseases in California beef cattle. Feeding by horn flies, stable flies, horse flies, and other bloodsucking flies mechanically transmits several disease organisms as well as causing irritation and decreased weight gains.

Both face flies and horn flies develop resistance to insecticides over time. For maximum prevention, it is advisable to switch the class of drug you use each year or two. If you used an organophosphate ear tag last year, use a pyrethroid ear tag this year. Additionally, if you plan to use a pyrethroid ear tag this year, use an organophosphate spray this year. Alternating the classes of drugs in this manner will increase the success of your preventive program. It is also recommended that application of ear tags be delayed until the fly population is relatively high so that the possibility of the flies developing resistance this year is lowered. Sprays, back rubbers, face rubbers, and dust bags can be helpful in reducing the fly populations early in the season, before ear tag application. Then, as the fly populations increase, apply the ***fresh*** ear tags to achieve maximum benefit. Always follow the manufacturer's label directions for ear tag application. If they call for two ear tags — use two ear tags! **If you need ear tags to prevent Pinkeye in the calves — use the tags in the calves.** ***In the fall always remove the ear tags***. If the ear tags are left in the cattle the flies that over winter—particularly the face flies — will develop resistance to the drug you used and it will no longer be as effective.

Face flies and horn flies lay their eggs in cow manure and the larvae can **only** develop in cow manure. Therefore, some of the compounds that are fed or given orally that kill the larvae in the manure pat can be very effective. One example of this is the insect growth regulator methoprene. This compound is an insect growth regulator (IGR), which is safe, and resistance does not develop to this product. It can be used in "feed through" products, where the drug passes through the manure unchanged and kills the fly larvae in the manure. Other insecticide products are available that can kill the fly larvae when used as a "feed through", such as Rabon. Rabon is an organophosphate and resistance can develop.

You will notice that several of the products available last year are no longer on the market in California.

Important Details To Remember For Fly Control And Pesticide Use Are:

1. Plan ahead for insecticide and ear tag purchases; fly season always comes.

2. Consult with your veterinarian regarding active ingredient(s) in these products and their record of effectiveness in your area.

3. Always follow instructions, warnings, and precautions: these products can be toxic to you, your children, pets, and others working with them around the chute. A good idea is to use disposable latex gloves when handling the ear tags.

4. Follow label withdrawal times and keep records of treatment dates, products and lot numbers.

California Registered Pesticides For Cattle: 2005

EAR TAGS

PRODUCT NAME	ACTIVE INGREDIENT	CHEMICAL CLASS	MANUFACTURER
Co-Ral Plus	Diazinon + Coumaphos	Organophosphate	Bayer
Cylence Ultra	beta-Cyfluthrin	Pyrethroid	Bayer
Diaphos R_x *	Diazinon + Chlorpyrifos	Organophosphate	Y-Tex
Double Barrel	Cyhalothrin + Pirimiphos	Organophosphate	Schering-Plough
Dominator	Pirimiphos	Organophosphate	Schering-Plough
GardStar Plus	Permethrin	Pyrethroid	Y-Tex
Max-Con	Cypermethrin + Chlorpyrifos	Pyrethroid + Organophosphate	Y-Tex
New Z Diazinon	Diazinon	Organophosphate	Farnam
New Z Permethrin	Permethrin	Pyrethroid	Farnam
OPtimizer	Diazinon	Organophosphate	Y-Tex
Python & Python Magnum	Zeta-cypermethrin	Pyrethroid	Y-Tex
Saber Extra	Cyhalothrin	Organophosphate	Schering-Plough
Warrior	Diazinon + Chlorpyrifos	Organophosphate	Y-Tex
Zeta Gard*	Zeta-cypermethrin	Pyrethroid	Y-Tex

*Available only through a licensed veterinarian.

SPRAYS

ACTIVE INGREDIENT	EXAMPLE BRAND NAMES
Dichlorvos	Vapona
Permethrin	Ectiban, Permectrin, Atroban, Permethrin, Insectrin
Tetrachlorvinphos	Rabon
Tetrachlorvinphos-Dichlorvos	Ravap

POUR-ON APPLICATIONS

ACTIVE INGREDIENT	EXAMPLE BRAND NAMES
Cyfluthrin	Cylence
Fenthion	Lysoff
Permethrin	DeLice, Expar, Hard Hitter, Ectiban, Atroban, Ultraboss
Cyhalothrin	Saber

BACK RUBBERS AND FACE RUBBERS

ACTIVE INGREDIENT	EXAMPLE BRAND NAMES
Permethrin	Ectiban, Insectrin
Tetrachlorvinphos-Dichlorvos	Ravap

DUST BAGS

ACTIVE INGREDIENT	EXAMPLE BRAND NAMES
Permethrin	Permectrin, Ectiban
Tetrachlorvinphos	Rabon dust
Zeta-cypermethrin	Python

FEED-THROUGH INSECTICIDES

ACTIVE INGREDIENT	EXAMPLE BRAND NAMES
Tetrachlorvinphos	Rabon oral larvicide
Methoprene	IGR Mineral, Starbar

Please Note, the active ingredients are available under a number of brand names and those listed are examples only and not specific endorsements or recommendations.
ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS CAREFULLY.

One of the most important health concerns involved with fly control is the incidence of Pinkeye in cattle. Dr. Maas teamed up with Dr. John A. Angelos to prepare the following article which appeared in the June issue of California Cattlemen's Magazine.

Pinkeye Prevention & Treatment

An important aspect of fly control is decreasing face fly infestations as a method of helping to prevent pinkeye in cattle. Face flies are very efficient at transmitting the pinkeye agent from one animal to the next. Also, calves are much more susceptible to infection with the pinkeye agent; and therefore, it is most important to put the fly tags in the calves' ears versus the cows.

Another aid in the prevention of pinkeye is to clip the pastures if grass is too long and headed out. This will decrease much of the irritation to the cattle's eyes that can initiate the beginnings of a pinkeye outbreak. The irritation of dust, plant pollen, or weed seeds will promote the heavy shedding of the pinkeye bacteria (*Moraxella bovis*) by a few "carrier cows" in the herd. These carriers spread the organism by contact and via face flies to the rest of the herd, and the susceptible animals will become infected and have clinical pinkeye.

Some vaccines are available for the prevention of pinkeye. One of the problems with current vaccines is that they do not provide protection in all herds and operations. If the strain of the pinkeye agent that is causing you problems is similar to the strains used in the vaccine, then they will probably be helpful—if not they won't be of much benefit. Again, since pinkeye causes more problems in calves it is essential you vaccinate the calves—vaccinating the cows won't do the calves any good. Another problem with vaccination is that you should start the vaccine protocol 6-8 weeks before the pinkeye cases are "scheduled" to start. If you start vaccinating when pinkeye cases are already occurring, it will be 6-8 weeks before the protective effects of the vaccine become apparent.

If pinkeye cases do occur, what are the treatment options? Two professors at UC Davis' School of Veterinary Medicine, Dr. John Angelos and Dr. Lisle George, have researched this topic for many years and this short article contains many of the practical items they have discovered.

First, if you are going to examine the eye for a foxtail or other weed—use disposable latex exam gloves. You can obtain these from your veterinarian or other animal health product source. After you have touched the eye (extracted the foxtail or treated the eye) or nose area, throw the gloves away. They are badly contaminated with the pinkeye bacteria. If you used a halter or nose tongs to restrain the animal, disinfect this equipment. Nolvasan® disinfectant is a good choice for this procedure. For treatment, use disposable needles and syringes.

The pinkeye agent is a bacterium; and therefore, antibiotics are indicated for treatment. The question has been, ***"Which antibiotic, what dose, what route?"*** The best treatments proven by research in beef cattle are listed below:

1. Long-acting tetracycline (Biomycin® or LA-200®)

Dose: 20 mg/kg body weight (9 mg/lb.)
Route: intramuscularly or subcutaneous (these products are irritating to tissues and should be given sub-Q whenever possible) both are labeled for sub-Q use.
Frequency: Two injections 48 to 72 hours apart.
Label: Both products are labeled for pinkeye, and you will not need your veterinarian's prescription if you follow the label instructions.

2. NuFlor® (florfenicol)

Dose: 20 mg/kg body weight (9 mg/lb.)
Route: Intramuscularly
Frequency: two injections 24 hours apart

Alternatively, NuFlor® can be used as single injection for longer action.

Dose: 40 mg/kg body weight (18 mg/lb.)
Route: Subcutaneous
Frequency: one treatment
Label: NuFlor® is not currently labeled for pinkeye, and you must have your

veterinarian's prescription to use this drug for pinkeye in cattle.

3. **Excede® (ceftiofur)**
   Dose: 6.6 mg/kg body weight (3 mg/lb.)
   Route: Subcutaneous--on the back of the ear. You will need to get your veterinarian to train you in the proper administration of this drug. It is relatively easy; however, if given incorrectly the drug will kill the animal very rapidly.
   Frequency: one injection provides therapy for 7-8 days.
   Label: Excede® is not currently labeled for pinkeye, and you must have your veterinarian's prescription to use this drug for pinkeye in cattle.

The above treatments are very effective and should be considered the best methods currently available for the treatment of pinkeye in cattle. None of the above methods require any injections into the eye of the cattle. Continued use of tetracyclines in areas with high numbers of anaplasmosis cases can make the cattle susceptible to sickness due to anaplasmosis. Consult with your veterinarian regarding this potential problem. **NOTE:** ***if any antibiotic product is not labeled for pinkeye, you must obtain a prescription from your veterinarian, as this constitutes an extra label use of this product.***

Another treatment option is to give penicillin as an injection under the white part of the eyeball (the sclera). If you are not expert in this method, have your veterinarian train you on the proper way to administer this treatment. ***Do not attempt this method without training.*** To achieve good results, give 1 ml (1 cc) under the sclera of both eyes for at least 3 days. This method achieves good results; but is less effective than the use of oxytetracyclines, NuFlor®, or Excede®. Again, you will need your veterinarian's prescription for the use of penicillin if it is not labeled for use in pinkeye.

For many years Furox sprays or powders (Nitrofurazone, Furox®, Topazone®, NFZ Puffer, P.E. 7, etc.) placed into the eye were used for the treatment of pinkeye. This method was not as effective as the above methods. However, beginning in 2002 this treatment became illegal for cattle. This is irrespective of whether you have a prescription or not. ***Do not use the furacin-type drugs in cattle any more.***

There are some liquids and spray-type products still available for pinkeye treatment. These products only stay in the eye for about 7 minutes before the tears wash it out and, therefore, are much less effective than any of the methods described above. As with all treatments that are placed directly into the eye, proper restraint is necessary, and the use of disposable latex gloves is recommended.

For many years, treatment with dexamethasone (Azium®) has been popular. Research indicates that when this is given under the sclera, there is no difference in the rate of healing. Therefore, use of this product is not usually recommended.

Keep written records of treatments and results. Discuss these with your veterinarian as you reevaluate pinkeye prevention and treatment plans for the future. Also, if your cattle are copper deficient or selenium deficient, the number of pinkeye cases will be greater and the severity will be worse. Be sure your mineral program is working, as this is important in the animal's immune response to this bacterial pathogen.

Penny Royal Control

One question I get at least once a year is how to control Penny Royal. First off, the scientific name for Penny Royal is *Mentha pulegium*. It belongs to the mint family and is found in moist areas. Extension Weed Specialist, Joe DiTomaso suggests: *"Roundup has been shown to work well on mints, and in an aquatic or wetland environment you could use Rodeo or Aquamaster. Even a rope wick application could be used if other sensitive species were present. I have not tried or heard of triclopyr working but I bet it would and since Garlon 3A now has an aquatic registration, it is also a possibility."*

As always if you have questions about articles in this newsletter give me a call or drop me an email.

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