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Safe Use of Animal Medicines

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This NebGuide promotes exercising caution while working with livestock medications.

Veterinary drugs, including antibiotics, antiparasite medications and vaccines, play an important role in the control and prevention of disease in all livestock. However, there is risk when working with animals and animal medicines. The United States Department of Agriculture (USDA), Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) have strict rules regulating the prescription, distribution and use of animal medications and chemicals. Regulations on how a drug is stored, administered, and disposed of ensure product safety to the producer, animal, consumer and environment.

The medications approved for use in animals today are safer and more effective than ever before. Many products, such as arsenic and strychnine, that were used as common treatment medications decades ago are no longer available because of their danger to people. Other products, such as chloramphenicol and some organophosphates that were used more recently have been removed from the marketplace because of human safety issues. The medicines and chemicals used today are safer but only if the label instructions and manufacturer recommended safety precautions are followed.

Safe use of any product is contingent on the ability to properly restrain the animal and the training and competency of the individual administering the medication. An FDA concern is that products are labeled properly so that medicines can be used by livestock producers with reasonable safety. To receive FDA approval, veterinary drugs must be reasonably safe for the animal, the person who administers the drug, for humans who consume products from the animal, and for the environment. In addition, they must be effective for the condition being treated. FDA regulations also require that the label contains adequate directions for the safe administration of the product. FDA recognizes that for some medications the label is not sufficient to assure adequate training for the safe and appropriate use of the product. In these cases the product requires a prescription with directions for use provided by a veterinarian. A veterinarian/client/patient relationship is needed to supplement the label of prescription drugs.

Contact with Medication May Be a Risk

People with known allergies to specific antibiotics should not use those products to treat animals or work where those products are being used to treat animals. Additionally those antibiotics should be removed from the treatment protocol and the treatment area should be thoroughly cleaned to remove remaining traces of that antibiotic before the person works in the area. A person exposed to antibiotics or other medications which cause them allergies should see a physician as soon as possible.

The most common hazard from animal medications (including antibiotics) is skin irritation from the chemical or inflammation from accidental injection. Needle penetration presents a risk of a localized infection that could eventually spread to other parts of the body. When exposure occurs, immediately wash the exposed or injected area and treat with a topical antibiotic ointment. The recommended precaution when working around any drug or chemical is to wear long sleeves, rubber gloves and protective eyewear. If drugs or antibiotics are splattered into the eye, flush the eye immediately with water. See a physician if swelling or pain develops after contact with the skin or accidental injection.

Some Drugs are Toxic to Humans

Some drugs can be extremely dangerous to people inadvertently exposed to them. An example is the prescription antibiotic tilmicosin phosphate, sold under the label Micotil. Micotil is a very effective drug for respiratory infections in cattle and sheep. However, Micotil is very toxic to the cardiovascular system of humans and swine. The accidental injection of Micotil into humans has caused death and there is no antidote. The manufacturer of Micotil has made a considerable effort to inform the users of their product of the danger involved. They recommend having the animal properly restrained, handling loaded syringes with care, never carrying a loaded syringe in your pocket and keeping needles properly covered until used. Because this is a prescription medication and because the product is dangerous if mishandled, a cattle producer should use this antibiotic only after reviewing the label carefully and discussing its use with a veterinarian. If a person does receive an accidental injection,

immediately call a physician, apply ice to the injection site and go to a hospital. For further emergency information call (800) 722-0987 or (317) 276-2000.

Prostaglandins (examples: Lutalyse, Estrumate) and cortical steroids (example: dexamethasone) can potentially cause pregnant women to go into labor or abort if injected with this medication or if it is absorbed through the skin from a spill. Pregnant women should not handle a prostaglandin or dexamethasone bottle or work in an area or touch equipment where these drugs are used. If accidental exposure occurs they should wash the exposed area and contact a physician immediately. People with asthma, bronchial or other respiratory problems should handle prostaglandins with extreme caution, as they can cause bronchial spasms that may result in death.

Drugs May be Poisons

The organophosphates and the pyrethroids are the most common pesticides used on cattle for treating lice, cattle grubs and intestinal parasites. These chemicals are designed to kill pests but are also dangerous to people. However, in most cases the amount of chemical that people are exposed to is too small to cause harm. Exposure may be by skin contact or by inhaling vapors. This group of drugs interferes with the normal way that nerves and the brain function. Symptoms include dizziness, headache, tremors, convulsions and loss of consciousness. If symptoms occur, get immediate medical help. Avoid exposure by wearing protective clothing and eyewear. Whenever there is an accidental spill, change clothes and wash the skin with soap and water immediately. Launder exposed clothing separately and run extra rinse cycles through the washing machine after removing the clothing.

Dirty Needles can be a Source of Infection

The most probable danger to humans from vaccines is from accidental infection from an unclean needle. Anyone routinely giving injections should have a current tetanus immunization. Some individuals may have a (localized) reaction to the carriers within the vaccine. The exposed area should be washed immediately and observed for an inflammatory reaction. A physician should be contacted if pain or swelling develops.

Live Vaccines May Infect People

Vaccines that include live bacterial components have the potential to cause disease in humans. The most notorious example of this is brucellosis vaccine that can cause undulant fever. When exposure occurs, a physician needs to be consulted for appropriate treatment.

Proper Animal Restraint is Critical

Appropriate facilities are vital for the success of any cattle operation to provide quick, safe and easy handling of livestock and animal medicine. Many injuries are the result of inadequate design of the structures used to confine and restrain the animals, rather than by the animals themselves. Operating and maintaining facilities that are designed with worker safety in mind can greatly reduce the danger associated with working with livestock.

Key Points for the Safe Use of Animal Medicines are:

- Develop a herd health plan to minimize disease problems.
- Use only licensed products.
- Administer medicines only if you are competent to do so.
- Read the label or the Material Safety Data Sheet (MSDS) carefully.
- Note the manufacturer recommendations and warnings.
- Use the product according to the directions on the label.
- Adopt good hygiene practices when injecting animals.
- Wash your hands thoroughly after handling any medication or vaccine.
- Note the withdrawal period for the medicine and do not market the animal until after the withdrawal period.
- Provide good handling facilities so the animal can be properly restrained and livestock medicines administered safely.
- Be aware of your surroundings; look for slip, trip, and fall hazards.
- Store medicines in a secure place.
- Dispose unused medicines and used needles in a safe manner.
- Protect skin and eyes with appropriate clothing and eyewear.
- If you are using a medication that has a potential for "human toxicity," talk with your veterinarian to see if a different medication can be used or ask for advice on safely handling the medication.
- Ask your veterinarian about the technique for one-handed subcutaneous injection.
- If you do accidentally inject yourself, wash the affected area well with clean water and soap, inform your co-worker, and if it is a drug of known "human toxicity" call your local poison control center IMMEDIATELY. The phone number for the Nebraska Regional Poison Center is (800) 222-1222.

It is important that all people involved in medicating animals have the proper training and supervision to make the workplace safe for both man and beast.

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