

INTRODUCTION

This manual has been developed as a study guide for the Florida State Fair Skillathon which is part of the Champion Youth Program. The topic for this year's Skilathon is **Health care management**.

The Florida State Fair recognizes that agricultural education instructors, 4H agents, parents, and leaders provide the traditional and logical instructional link between youth, their livestock projects and current trends in the animal agriculture industry. **PLEASE NOTE:** This manual is provided as a **study guide** for the skillathon competition and should be used as an additional aid to ongoing educational programs.

Sections are labeled **Junior, Intermediate & Senior, Intermediate & Senior, or Senior** to help exhibitors and educators identify which materials are required for their age level.

** Additional information is noted in the study manual for preparing for the Champion of Champions competition.

Juniors (age 8-10 as of September 1, 2009)

Body parts
Restraint, knot tying

Intermediates (age 11-13 as of September 1, 2009)

all of the above plus...
Health supplies
Animal Identification
How to give an Injection, injection sites

Seniors (age 14 and over as of September 1, 2009)

all of the above plus...
Weight estimation & Dosages
Medication label identification
Withdrawal times & Medical Calculations

GOOD LUCK

Animal Health

Assuring animal health is a primary responsibility of livestock managers. Failure results in animal suffering, decreased productivity and potential threats to human health. Animal health is so important that the United States Department of Agriculture has a Health Inspection Service to work with the livestock industry in disease prevention. Concerns over bioterrorism and potential threats to human health have brought animal health concerns into the spotlight in recent years.

Disease may be caused by infectious agents (bacterial, viral, fungal, prion, and parasitic) which might be passed around by biting insects, wild animals, fecal contamination, sexual contact, air borne, or contaminated feed and water. Health problems may also occur from noninfectious causes (malnutrition, trauma, cancer, genetic defects, and environmental hazards like toxins, poison or extreme weather conditions). Disease prevention practices include purchasing healthy animals, isolation, quarantine, testing, and immunization (vaccination) programs. In extreme cases animals are sometimes destroyed to prevent further spread of disease. Treatment might involve the use of antibiotics, medications or antiparasitic compounds. Excellent powers of observation, an understanding of normal behavior, good sanitation practices, and diligent vaccination and deworming schedules are key components of animal health maintenance.

How do you know if an animal is healthy or not? One of the keys is to understand what is normal so that you can recognize what is abnormal. This is a skill that develops after working with and caring for livestock over time. The following are some of the characteristics that serve as the basis for assessing animal health. Deviations from normal are early indicators that something may be wrong and may allow early response.

Normal Eating Behavior

Normal Fecal Pattern and Consistency

Normal Stance, Movement, Posture and Activity Patterns

Group (Herd or Flock) Behavior

Sounds or Acoustical Communication

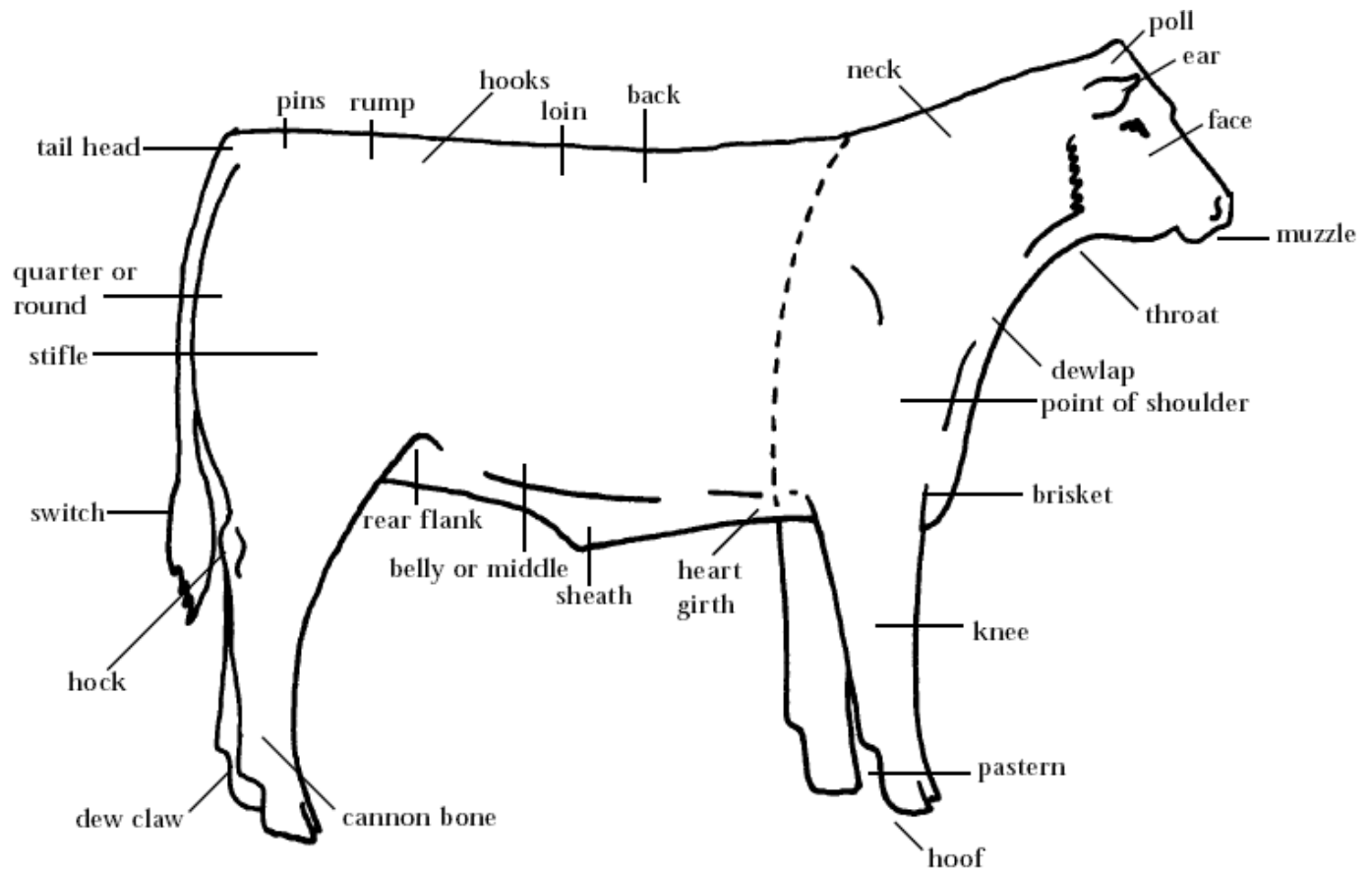
Normal Vital Signs

Assessing Vital Signs**

Body temperature, pulse rate and respiration rate are called vital signs. The body's response to an infectious agent or some other problems often results in a change from normal in one or more of the vital signs. Recognizing these changes along with other symptoms may allow early identification and treatment of a problem before it gets out of hand. Body temperature is measured with a rectal thermometer while the animal is properly restrained and averages 101.5 (100.4 – 102.8) °F. Pulse is the surging of blood through arteries and is usually defined as the heartbeats occurring in a minute (bpm). It can be felt in the artery under the tail in cattle and averages 50 (40 – 70) bpm. In some animals you cannot feel the pulse but you can feel the heart beating under the ribs, or you may use a stethoscope to listen to the heart beat. Respiration rate can be measured by simply counting the expansion and relaxation of the rib cage and abdominal wall (averages 30 breaths/minute). It is also helpful to examine the mucous membranes (inner eye lid, inside the nostrils, inner lips and gums) checking for a moist, pink appearance. You can check for dehydration by pinching the skin on the side of the neck and releasing it. If the skin goes back into place quickly (less than 3 seconds), the animal has good skin pliability and is likely not dehydrated.

Beef Cattle Body Parts

It is important for livestock producers to share a common language. Using the correct names for various body parts is one way to be certain your message is understood. Study the pictures with the names of the body parts labeled so that you can communicate with other producers using correct terms.



Restraint

In order to carry out routine animal health care practices, animals must be prevented from moving about freely. Methods of restraint could be put into five categories.

1. Psychological – knowledge and anticipation of natural behaviors to accomplish task
2. Train or desensitize – repeat exposure to stimulus, cotton in ears, blind fold
3. Confinement - chutes, alleys, stalls, or barriers
4. Tools and physical force –ropes, snares, nose tongs, canes, prods and whips
5. Chemical sedation or immobilization – potentially dangerous, should not be used without veterinary supervision.

Whichever method or methods are employed, it is important to use common sense, plan ahead, be safe and always use SELF CONTROL. Haste is the enemy. Ask the following questions: Will the selected method minimize danger to the handler? Will the method minimize danger to the animal? Will the method cause unnecessary pain or fright? Will the method allow the management technique to be completed as necessary? If any of the questions are answered negatively, other restraint methods should be used.

Ropes used in Restraint

Rope is one of the tools used most often by livestock producers. Knowledge of rope, knots, and hitches is indispensable. The most common type of rope used by livestock producers is the three strand braided rope which can come in many diameters and be made of man-made or natural fibers. Cotton ropes are soft, flexible and are least likely to cause rope burn though not as strong as other fibers and will rot and deteriorate over time. Cotton ropes are good for tying up limbs, for neck ropes and for lead ropes (if 5/8 inch or larger). Nylon is the strongest type of rope and will not rot from water or mildew but will stretch and often causes rope burn. It makes the strongest lead rope and is excellent for slinging and total restraint. Regardless of the fiber, ropes should be of fairly wide diameter, soft-surfaced and free of knots. Webbing should be free of rust and dirt and have smooth surfaces. Ropes should be kept clean, dry and untangled.

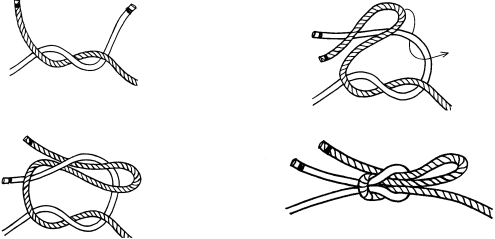
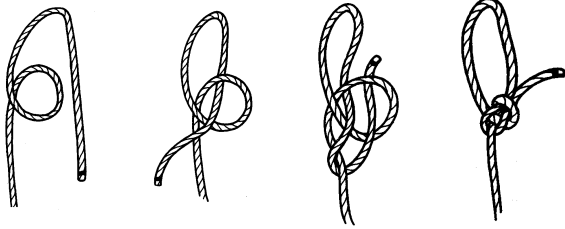
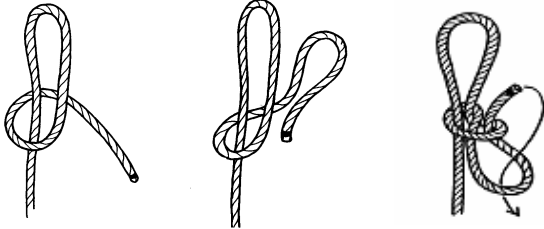

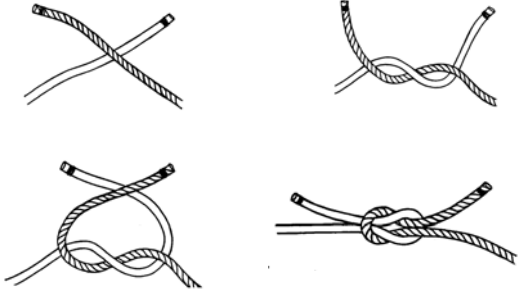
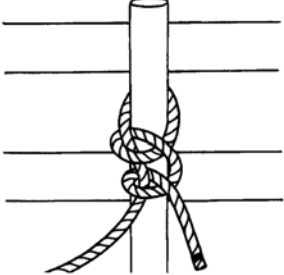
Knots for Livestock Handling

There are many circumstances in cattle handling that will require you to tie knots. Take the time to learn to tie several types of knots and hitches so that you will have the right knot for the right circumstance. Practice often so that it becomes second nature. In an emergency situation, you do not want to have to think about which knot to choose and how to tie it.

Knots join ropes together, attach ropes to a post or rail, or attach ropes to an animal.

Hitches are used to attach a rope to a post or rail - only thing securing the rope to post is the pressure of one rope coil wrapping upon the others.

Splices are used to permanently join ropes to one another - individual strands from each rope are interwoven with strands from the other.

	
<p>Reefer's Knot (<i>Quick-Release Square Knot</i>) A good non-slip knot for tying ends of rope together and can easily be released. An advantage is that it can be tied under tension - an important feature for a knot used to restrain livestock.</p>	<p>Bowline Knot A non-slip knot used to form a loop that will not tighten or draw down when placed around an animal's body or a post.</p>
	
<p>Quick-Release Knot The standard way to tie an animal to a post. A variation of a slipknot that can be released very quickly, even when under tension. This knot should never be tied around the neck or body of an animal.</p>	<p>Honda Knot Knot used to form small loop in the end of a rope in order to pass the rest of the rope through, forming a much larger loop, or lariat.</p>
	
<p>Square Knot Excellent for tying two nearly equal size ropes together or for tying the ends of a single rope together to form a loop. Used mainly to secure gates or cage openings. Also used to tie a cloth or gauze bandage around the limb of an injured animal.</p>	<p>Double Half Hitch A quick and easy knot which acts like a slipknot and is a convenient way to tie up the end of a rope.</p>

Methods of Animal Identification

Proper animal identification has always been essential for record keeping and for efficient execution of normal management practices. In recent times, the threat of bioterrorism and the potential for rapid spread of diseases affecting livestock and human populations has led to the development of the **National Animal Identification System (NAIS)**. The NAIS is a national program intended to identify specific animals in the United States and record their movement over their lifespan. It is being developed by the U.S. Department of Agriculture (USDA) and State agencies—in cooperation with industry—to enable 48-hour trace back of the movements of any diseased or exposed animal. This will help to ensure rapid disease containment and maximum protection of America's animals. The records maintained will include: Animal Identification Number, AIN , or Group/Lot Identification Number; GIN, Premises Identification Number, PIN of the location where the event takes place; Date of the event; Event type (movement in, movement out, sighting of an animal at a location, termination of the animal, etc.) For more details you may visit the following websites:

National Animal Identification System website: <http://animalid.aphis.usda.gov/nais/>
FDACS Division of Animal Industry: http://www.doacs.state.fl.us/ai/adc/adc_nais.shtml

Many options exist for cattle, some permanent; some temporary. Whatever method is chosen, it should be visible, easy to apply, unalterable, inexpensive and not cause harm or discomfort to the animal. Possible methods of cattle identification include: ear tattooing, ear tagging, hot branding, freeze branding, or implanted transponders (electronic).

TATTOOING

Advantages - It is permanent and does not disfigure the animal.

Disadvantages - Animal must be confined in order to read tattoo. Tattoos are hard to read on dark-skinned animals.

Equipment Necessary -

Squeeze Chute or Head Gate
Tattooing Numbers &/or Letters
Alcohol

Tattooing Instrument
Tattooing Ink or Paste
Clean Cloth

Procedures -

1. Assemble the necessary equipment. It is important that the numbers and/or letters be placed into the tattooing instrument in the proper order. As you look at them in the tattooing instrument, they should appear backward. Always check the numbers and/or letters on a piece of paper or card board before you begin to make sure they are correctly placed.
2. Restrain the animal.
3. Two ribs of the cartilage divide the ear into top, middle and bottom thirds. The tattoo should be placed in the top third of the ear just above the cartilage rib and equal distance from the base and the tip of the ear. Tattooing on the edges of the ear or in the hair portion of the ear can make reading the tattoo difficult. Do not tattoo between the two cartilage ribs; this area is reserved for some types of ear tags or for a brucellosis vaccination tattoo in the right ear of heifers.

4. Clean the inside of the ear, where the tattoo will be placed, with a cloth soaked in alcohol. Infections or warts can result if a tattoo is placed in a dirty ear.
5. Position the tattoo instrument inside the ear so that the needlepoint dies are above the ribs as described in step three. Squeeze the handles of the tattooing instrument together completely and quickly; then release them fully.
6. Rub tattoo ink or paste into all of the needle marks. Work the ink or paste well into the marks.
7. Release the animal.
8. Clean the tattooing equipment with alcohol after each day of use.

EAR TAGGING

Advantages - Economical; can be read from a distance; They are flexible.

Disadvantages - Plastics tend to become hard and brittle in cold weather; Easily lost;
Pre-numbered tags with block-type numbers are difficult to read if they get soiled.

Equipment Necessary -

Squeeze Chute or Head Gate
Marking Fluid

Ear Tag and Applicator
Cloth

Antiseptic

Procedures -

1. Select tag style.
2. Select the tag size.
3. Select contrasting ink and tag colors.
4. Select a numbering system for the ear tags.
5. The next decision will be whether to purchase pre-numbered or blank tags. Pre-numbered tags are more convenient, but not as adaptable to your "system" as the blank tags can be. Make this decision based upon the unique needs of your operation. If you choose the blank tags, number the plastic tags with marking fluid recommended by the tag manufacturer. Plastic tags should be numbered the day before they are inserted into the ear. Number the tags with large numbers along their bottoms so that they can be seen from a distance when hair grows in the ear.
6. Insert the ear tag into the appropriate applicator. Each tag manufacturer has an applicator designed specifically for its type of tag. Two-piece tags require that the male portion of the tag be slid over a pin and the female portion inserted into a clip. Be sure to follow the manufacturer's directions when inserting the tag into the applicator. When using two part tags make sure that the male portion of the tag lines up with the female portion of the tag.
7. Select the ear to be tagged.
8. Select the tagging site on the ear. The site selected will vary with the style of tag selected. Two-piece tags should be placed between the cartilage ribs, or below the ribs approximately halfway between the base and tip of the ear. Since the male part is the piercing part, it is easier to locate exactly where you want to place the tag if the male part of the tag is placed in front of the ear and the female part behind the ear.
9. Hold the ear with one hand while using the other hand to insert the ear tag. Pay particular attention to the proper ear tag site. The two-piece tag is applied with a pliers type applicator by squeezing the handles until the ear tag snaps together.

10. Treat the pierced ear around the tag with an antiseptic or iodine to prevent infection and fly irritation.
11. Release the animal.

HOT BRANDING

Advantages - Easy to read; Unique to producer; Can be used on any color cattle; Permanent.

Disadvantages - Lowers the market value of the hide. It can also be very difficult to read, especially on haired cattle. Stressful for cattle and people.

Equipment Necessary -

Branding Irons	Small propane tank with burner or wood fire
Squeeze Chute	30-gallon Drum

Procedure -

1. Assemble and prepare the necessary equipment. The irons used in hot branding should be iron or steel, and should be free of dirt and hair.
2. Heat the branding irons. The lowest cost method of heating branding irons is to use the hot coals of a wood fire. A second and more convenient way to heat irons is to use a small propane tank and burner. A third method is to use electric branding irons.
3. Restrain the animal in a squeeze chute. Most chutes are designed with hinged sidebars that allow access to the hip and shoulder regions of the animal. One or two of these should be lowered to allow access.
4. Put on a pair of leather gloves to prevent burning your hands when handling hot irons.
5. Take the branding iron out of the fire or drum and check the number or character to be used to be sure it is the right one.
6. Check the irons for temperature. The amount of heat required for a good brand is difficult to describe. The color of the hot iron is a good indicator of the temperature. A black iron is too cold. A red hot iron is too hot. Using this type of iron causes a large sore, which results in an indistinct or blotched brand. An iron that is the color of gray ashes is at the proper temperature to do a good job of branding.
7. Firmly press the ash gray colored branding iron against the hide and rock the handle slightly to vary the pressure and obtain uniform application of the entire character. The color of the branded hide should be light tan, or the color of a new saddle leather. If the cattle have a light hair coat and the iron temperature is correct, the time required to brand should only be 3 to 5 seconds. Cattle with heavy hair coats need to be clipped prior to branding.
8. Apply one iron at a time. If two irons are applied at once by the same person, the chances of slipping and blotching the brand is increased greatly.
9. Place the iron back in the heat source as in step 2. Make sure the iron is clean.
10. Release the animal.

FREEZE BRANDING

Advantages - Permanent; Painless; Limited Hide Damage.

Disadvantages - Takes more time to brand an animal.

Equipment Necessary -

Copper or Copper alloy branders	Liquid Nitrogen or Dry Ice + 99% Isopropyl Alcohol
Styrofoam Cooler	One Quart Squeeze Bottle
Funnel	Electric Clippers
Stiff Bristle Brush	Clock (with second hand)

Procedure -

1. Prepare the branders. They should be clean and free of debris.
2. Cool the irons in a refrigerant. One method is to place the branders in liquid nitrogen. Place 3 to 4 inches of liquid nitrogen into a Styrofoam cooler or insulated bucket before the irons are added. Second method of cooling branders involves placing them in a mixture of 99% isopropyl alcohol and dry ice. Both methods require more refrigerant to cool the branders initially than to re-chill between animals.
3. Fill the quart squeeze bottle with 99% isopropyl alcohol.
4. Restrain the animal in a squeeze chute.
5. Clip the area to be branded as closely as possible. A stiff bristle brush can be used to remove dirt and debris.
6. Liberally apply 99% isopropyl alcohol from the squeeze bottle over the branding site. Soak the area but don't waste alcohol.
7. The irons are ready for use when the refrigerant stops boiling.
8. Put on a pair of leather gloves, take the brander out of the refrigerant, and check the character to be used to be sure it is the right one.
9. Check the clock to ensure the proper brand application time.
10. Apply the brander to the clipped, alcohol soaked area, and apply pressure to the brander by leaning on it. The minimum time of application for dark cattle is 30 seconds. For white cattle you must apply brander for approximately 2 ½ minutes to kill the hair follicles.
11. Apply one brander at a time. If two irons are applied at once by the same person, the chances of slipping and ending up with a poor brand are greatly increased.
12. Place the brander back into the refrigerant and make sure that the refrigerant covers the iron. If it does not cover the irons, add more liquid.
13. Release the animal.

Beef Cattle Health Supplies

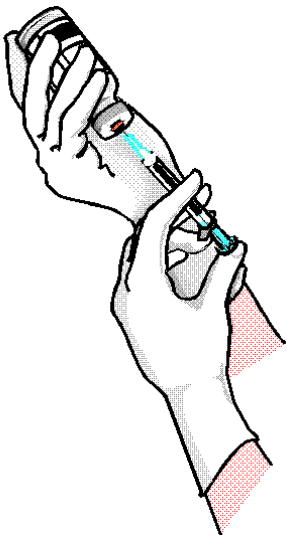
Research the following items and practices to gain knowledge of their purpose in livestock production. Be prepared to identify these items and explain their use. Livestock equipment supply catalogs are a good study resource. Some have photographs on their web sites.

- Antiseptic
- Bleach
- Balling gun
- Blood stopper
- Epsom salts
- Dewormer
- Emasculator/Elastrator
- Ear tags
- Disbudding iron/dehorner
- Disinfectant
- Dose syringe
- Drench bottle
- Fly tag
- Ear tag, tattoo, electronic implanter (ID)
- Hoof trimmers
- Mineral oil
- Needles
- Paint stick
- Penicillin
- Probiotic
- Stomach tube
- Syringes
- Thermometer
- Tincture of Iodine
- Vaccine

Administering Medications and Vaccinations

As a routine part of herd health management, livestock producers must administer medicine. It may be given topically (on the skin), orally (by mouth), or by injection. Each of these techniques may bring about undesirable behavioral responses so you must properly restrain the animal and protect yourself. Topical treatments may be dangerous to humans so you should wear gloves and follow all safety precautions of the manufacturer. Medications given by mouth may be fed, loaded into a balling gun, or mixed into a drench or a dose syringe. Care should be taken that the animal does not choke and fluids are not forced into the lungs. Injections put medications directly into the animal's system. There are many routes but we will focus on subcutaneous and intramuscular. In subsequent sections of the manual, detailed descriptions are given.

How to Give an Injection



Vaccines and many medications must be given by injection. When learning to give an injection, some of you may find it easier to practice on an orange or banana because fruit cannot feel pain. The discomfort that an animal getting a shot feels is similar to the discomfort that you feel when you get shots from your doctor. When giving an injection to an orange or banana, we must remember that it is somewhat different than giving an injection to a live animal. The live animal may move around and the skin may be harder to get the needle through.

There are two main types of injections - *subcutaneous* (Sub-Q) or *intramuscular* (I.M.). The subcutaneous injection is given just under the skin and the intramuscular injection is given within the muscle tissue. On your orange, the peel is comparable to the skin on an animal, the orange sections are comparable to the muscles and the area in between these two is the comparable to the subcutaneous space.

To draw up an injection, wipe the vial top (rubber stopper) with an alcohol moistened cotton ball to disinfect it. Make certain the needle is securely attached to the syringe by inserting the plunger portion of the syringe into the open end of the syringe and twisting the needle onto the syringe tip. Remove the cap - do not touch the needle. Draw the plunger back to fill the syringe with an amount of air equal to the amount of vaccine you want to inject. Push the needle (with syringe) through the rubber stopper of vaccine and inject air - this prevents a vacuum from forming as you draw the vaccine out. Turn the vaccine vial (with needle/syringe still inserted) upside down, and draw out the desired amount of vaccine. Turn vial right-side up, remove needle/syringe, and cap needle until ready to use.

To give a subcutaneous injection:

Place the needle just under the skin by picking up a fold of skin on the neck or shoulder between your fingers and insert the needle just under the fold of skin. Push the plunger to expel the injection into the animal.

To give an intramuscular injection:

The needle must penetrate the muscle. Draw up the material as before and detach the needle from the syringe. You may wish to give the animal a few gentle slaps with your hand where you are going to give the shot to desensitize them to the stick and then quickly put the needle through the skin and into the muscle. After the needle is in the muscle, attach the

attach the syringe to the needle and push the material into the animal with the plunger. When the syringe is empty, remove the needle and syringe from the animal making sure that the needle is still attached and replace the cap to prevent injury. Intramuscular injections should be given in the neck region. Injection site blemishes may include abscesses or scar tissue. Packers and processors have problems with injection sites in the hip area because they have to trim away product from this high value area. If given the option of subcutaneous or intramuscular, always choose subcutaneous .

Always use sterile equipment as dirty equipment could cause infections at the injection site. Remember to dispose of all needles and biological wastes properly. Since animal species differ, the route of injections and the types of vaccines and medications needed are different. It is important that you consult your veterinarian before giving any shots and always **READ THE LABEL** and **FOLLOW INSTRUCTIONS**. Proper animal identification and record keeping are vital components of your livestock management program. Remember to always **WRITE IT DOWN**.

Injection Site Management

Intermediates and Seniors

Selection of appropriate injection sites is very important for the well being of the animal to avoid abscesses and nerve damage. Since most livestock eventually end up in the retail case, it is also important to choose injection sites wisely so there is no adverse effect on the products for sale.

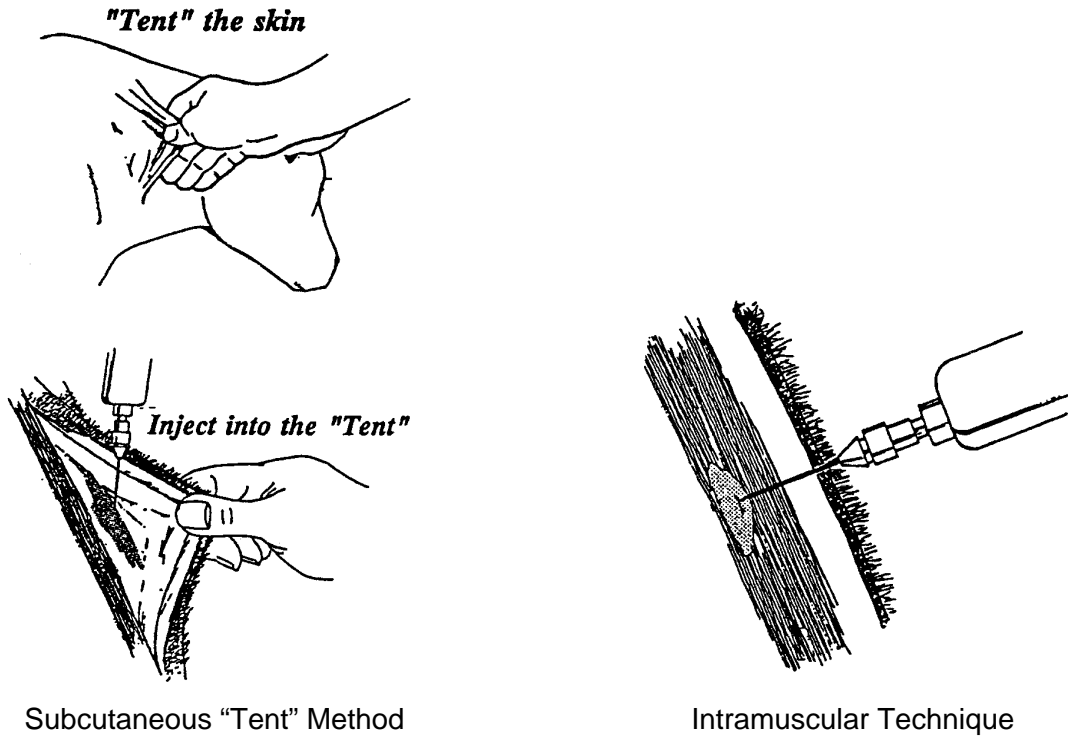
Problems and concerns for food safety fall under 3 areas: injection site management, residue avoidance (antibiotics, chemicals and feed contaminations) and foreign object avoidance (broken needles). The National Cattlemen's Beef Association has developed the **Beef Quality Assurance Standards** for beef cattle managers. For detailed information visit: <http://www.texasbeefquality.com/Files/pdf/Section%202.pdf>

Relative to injections, keep in mind the following:

- Products labeled for subcutaneous (SQ) administration should be administered SQ in the neck region (ahead of the shoulders). *As a last resort*, in the elbow pocket is an acceptable SQ site.
- All products labeled for intra-muscular (IM) use shall be given in the neck region only (no exceptions, regardless of age).
- All products cause tissue damage when injected IM. Therefore all IM use should be avoided if possible.
- Products cleared for SQ, intravenous (IV), oral or topical administration are recommended.
- Products with low dosage rates are recommended and proper spacing should be followed.
- No more than 10 cc of product is administered per IM injection site.

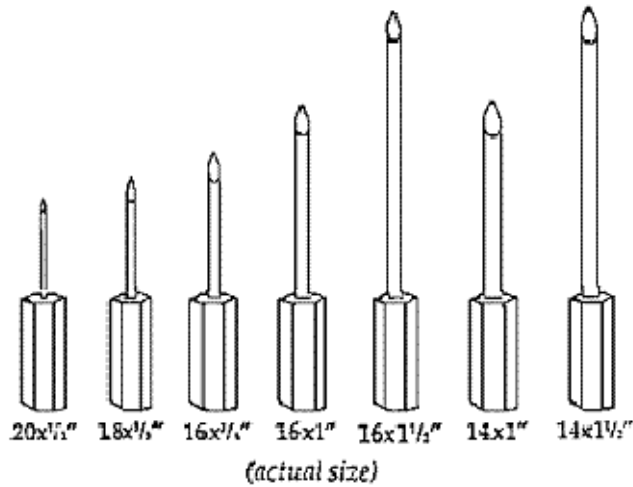


Giving Injections



Subcutaneous "Tent" Method

Intramuscular Technique



Investigate needle gauges to find the correct size for your project animal. (Gauge number increases as needle diameter decreases.)

Estimating Body Weight

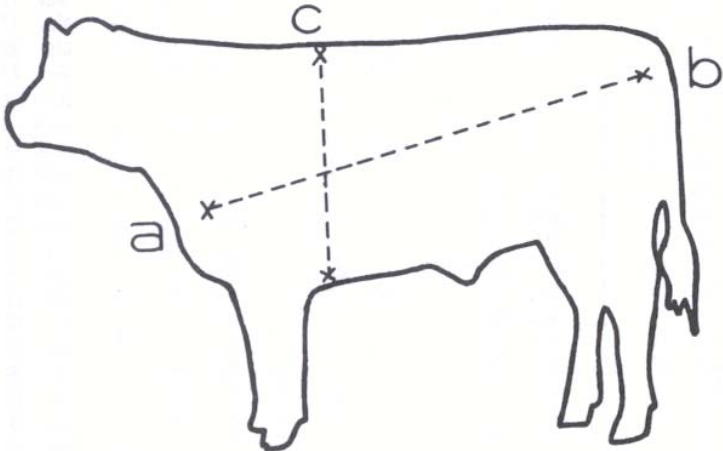
One challenge in administering medications is determining the proper dose. Many medications base the dose on body weight. If you do not have a scale available, you should have a method of estimating weight that is fairly accurate so you do not overdose or underdose your animal. Always follow label directions. Too much of a good thing is often very bad but underdosing of products like dewormers can speed up resistance by the parasites.

Step 1: Measure the circumference (heart girth) from a point slightly behind the shoulder blade, hence down over the foreribs and under the body, behind the elbow (distance C of figure below).

Step 2: Measure the length of body, from the point of the shoulder to the point of the rump (pinbone), in inches (distance A-B of figure below).

Step 3: Take the values obtained in steps 1 and 2 and apply the following formula to calculate body weight:

$$\text{Heart girth}^2 \times \text{body length} \div 300 = \text{weight in pounds}$$



Calculating Dosages

Read medication labels carefully when calculating doses.

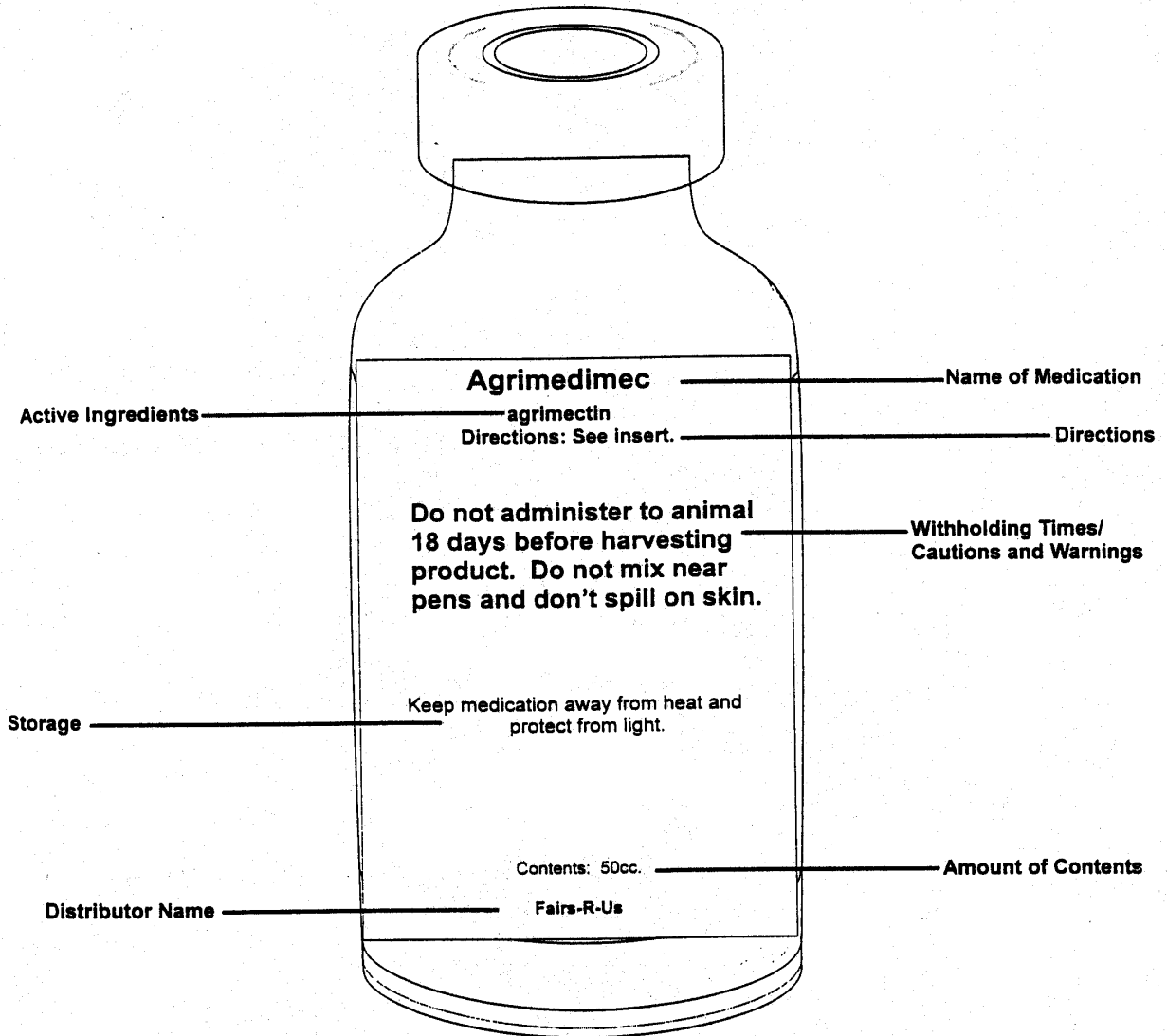
Example: A 300 pound sick animal requires an injection of antibiotic at a dosage rate of 2,500 units/pound. The antibiotic to be used contains 150,000 units/ml. How much antibiotic should the producer give to the animal?

Step 1: Calculate how many units a 300 pound animal needs.
 $2,500 \text{ units/lb} \times 300 \text{ lbs} = 750,000 \text{ units}$

Step 2: Calculate how many mls. of the antibiotic would deliver the needed units.
 $750,000 \text{ units} / 150,000 \text{ units/ml} = 5 \text{ mls.}$

Medication Labels

Manufacturers of pharmaceutical products follow strict guidelines in labeling their products. Understanding what is on the label and how to use the information is a critical skill for livestock health care management. Using the picture shown here, study the labels on the products you routinely use on your project animals.



The use of tradenames in this publication is solely for the purpose of providing specific information. It is not a guarantee, warranty, or endorsement of the products named and does not signify that they are approved to the exclusion of others.

Medication Calculations

Seniors

Be prepared to read a medication label and calculate when to administer booster shots, withdrawal times, etc.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 Gave Animal Antibiotic Shot	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18 Harvested Animal	19	20	21
22	23	24	25	26	27	28
29	30					

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

QUESTIONS:

Looking at the first calendar, if a medication that had a 32 day withdrawal time was administered on the 3rd, is it proper protocol for the animal to be harvested on the 18th? Why?

Using the calendar above, when could your animal be safely harvested if administered the antibiotic on the 3rd?

Cattle Diseases**

Name: Brucella Abortus Disease
Common Name: Brucellosis
Cause: Bacteria, *Brucella abortus*
Major Symptoms: Abortion of first calf in last third of pregnancy and retained afterbirth. Some infected cows show no signs but calves may be born weak.
Prevention: Testing for the disease at stages in the cattle's life, such as on the farm, at the stock market, and at the slaughter facilities. Once infected animal should be culled. If more than one is infected, the whole herd should be quarantined. Good herd management, and regular vaccination can help with prevention of outbreaks.

Name: Bovine Respiratory Syncytial Virus
Common Name: BRSV
Cause: Virus
Major Symptoms: Temperatures of 103-105 degrees F, coughing, and some nasal discharge. In adult cattle that are susceptible, clinical signs are fewer and usually are not noticed until the cattle begin collapsing and die within a few hours.
Prevention: Vaccination when an outbreak has occurred will only aid in slowing down the spreading of the virus. If the herd is known to not be infected, then vaccination will help in preventing an outbreak.

Name: Infectious Bovine Rhinotracheitis
Common Name: IBR, or Red Nose
Cause: Virus
Major Symptoms: Watery to yellow colored discharge from the nose and eyes along with coughing, increased respiration rate and fever. This infection usually follows or is included with other infections such as BVD and or BRSV. So, many of the vaccines come with a strand of the IBR virus to aid in prevention.
Prevention: Vaccination

Name: Bovine Viral Diarrhea
Common Name: BVD or BVDV
Cause: Virus
Major Symptoms: Cattle infected with this disease do not usually show any symptoms, but the immune system is weakened and other diseases are more likely.
Prevention: Good herd management and good sanitation are the best ways to combat this disease. Vaccination will help prevent outbreaks, but will not stop the infection.

Name: Parainfluenza 3
Common Name: PI3
Cause: Virus
Major Symptoms: Watery to yellow-colored discharge from nose and eyes, coughing, fever, and an increase in respiration rate.
Prevention: PI3 usually infects cattle that are already infected with other diseases such as IBR, BVD, or BRSV so a strand of PI3 is usually pre-mixed with another vaccine. Along with vaccination, good herd management is needed along

with good sanitary practices to prevent an outbreak.

Name: Leptospirosis
Common Name:
Cause: Bacteria, *Leptospira interrogans*, subclassification, “serovars” hardjo
Major Symptoms: Infected cattle with a chronic or long lasting infection will usually abort the fetus, have a stillborn, or give birth to a weak calf. In rare acute infections, often in calves, the signs are high fever, jaundice (yellowing of the skin), and death.
Prevention: Regular herd vaccinations twice a year will help along with the vaccination of any new replacement heifers or bulls. In chronic cases, once abortion has occurred it is too late to vaccinate.

Name: Clostridial Disease
Common Name: Blackleg
Cause: Bacteria, *Clostridium chauvoei*
Major Symptoms: Depression, swelling of muscles or groups of muscles, skin may become discolored and crackle when touched. Adult cattle may show signs of lameness before any other signs appear. Many calves are found dead before any signs appear.
Prevention: Vaccination of the whole herd is important, not just for *Clostridium chauvoei*, but for all *Clostridium* bacteria. This is accomplished through vaccinating with 7 or 8 way *Clostridium*.

Name: Bovine Spongiform Encephalopathy
Common Name: BSE, “Mad Cow Disease”
Cause: Prion, an abnormal form of a normal protein
Symptoms: Cattle tend to show signs of progressive degeneration of the nervous system and changes in temperament. Abnormal posture, incoordination and difficulty rising are also observed due to the degeneration of the nervous system. There is a decrease in milk production and a loss in body weight, but there is no loss of appetite.
Prevention: There is no cure for BSE, but there are some guidelines to help prevent an outbreak. Do not feed meat bone meal, or other feed stuff that contains parts from ruminants. Ensure good slaughter and processing procedures so as not to contaminate edible products. Though BSE is not contagious, monitoring the off spring of an infected cow is recommended, even though the transmission of the prion from cow to calf is low. Finally the humane destruction of infected cattle to prevent any possible spreading due to contamination is required.

BEEF/STEER SHOWMANSHIP

Training Your Animal for Showmanship:

Begin training your beef animal as soon as possible. It takes hours upon hours to effectively halter break your animal, and teach it to respond to commands on the halter and show stick. Practicing often over short periods has been proven a more effective training technique than a few, long sessions. There are many methods of teaching an animal to give in to halter pressure. Choose the method that is the safest and least stressful for the animal considering your own abilities, help available, facilities and equipment. Train the heifer or steer to tie, walk, stop and set up easily and quickly when asked.

In the Show Ring:

Proper Dress:

1. All exhibitors will be required to be clean and neat and dressed in white, green, dark blue or dark black jeans or slacks with a solid white shirt with a white collar.
2. No caps or hats.
3. Closed-toe shoes or boots are required.

Use of Show stick and Comb:

There are three main purposes of the show stick in beef/steer showmanship.

Placing the Feet: To move hind feet backward, push back on the halter and apply pressure with the show stick on the soft part of the animal's hoof, between the toes. However, remember not to jab too hard, for this is a tender area. To move a hind foot forward, pull forward on the halter and apply pressure with the show stick under the animal's dewclaw. If you find that the animal's hind legs are too close together, you can apply pressure with the show stick on the inside of the animal's leg, just above the hoof.

Keeping the Topline Straight: This is important for the overall appearance of your animal in the judge's eye. To straighten a topline, apply pressure to the underline or place the hook of the stick inside the rear flank and apply slight pressure.

Calming and Controlling: Occasionally stroking the animal's underline as you place its feet or as it is standing still will help calm and relax the animal, especially if this technique is used during practice sessions. The show stick can also be used to keep your animal moving at a comfortable pace that is not too fast. Hold the stick in your left hand when leading and use the butt end of the show stick to tap the animal's nose when needed.

Comb: All exhibitors should carry a curry comb in their back pocket during the showmanship competition, unless the animals are slick sheared. If animals are close clipped, there is no need for a comb. The comb is used to fix the animals coat after the judge feels for body condition on an animal. However, do not correct the hair obviously in front of the judge; wait until he/she has moved on to the next animal. For safety reasons, try to turn the teeth of the comb toward your body when carrying it in your pocket. This keeps other exhibitors from being harmed by your brush if they bump into you.

Proper Showmanship Procedure:

1. Enter the show ring, circling in a clockwise direction, with a smile on your face.
2. Keep an eye on the judge and respond quickly to any instructions.
3. When pulling into a line or stopping, leave three or four feet on both sides of your animal and at least five feet between your animal's head and the edge of the ring. This space allows for more freedom of movement both for you and the judge.
4. Always keep your animals legs set up correctly and the animal posed in a position that accentuates the animals best features.
 - set the hind legs squarely underneath the animal's body.
 - keep the animal's back level and its head up.
 - if the animal is high in the loin, apply pressure to the loin with a fingernail.
5. When leading, hold the halter strap in your right hand, 6 to 12 inches from the animal's head and your show stick in the left with hook down. Upon pulling into a line, switch the lead into the left hand and the show stick into the right. Always use caution when maneuvering the show stick.
6. If your animal acts up and you have to pull out of line, always turn the animal away from you.
7. For close inspection, move a half step to allow the view he/she seeks. Never step in front of your animal.
8. Be courteous to other exhibitors. Do not bump, crowd or strike another exhibitor's animal. However, if an animal in front of you is reluctant to move, you may assist by gently tapping it on the rump or twisting its tail.
9. Do not overwork your animal and always remain calm.
10. Show good sportsmanship by congratulating the winner.

Adapted from: Wrangler Jeans Beef Showmanship for Youth for America In Association with the National 4-H Council, 1987.