

# 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....  
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*

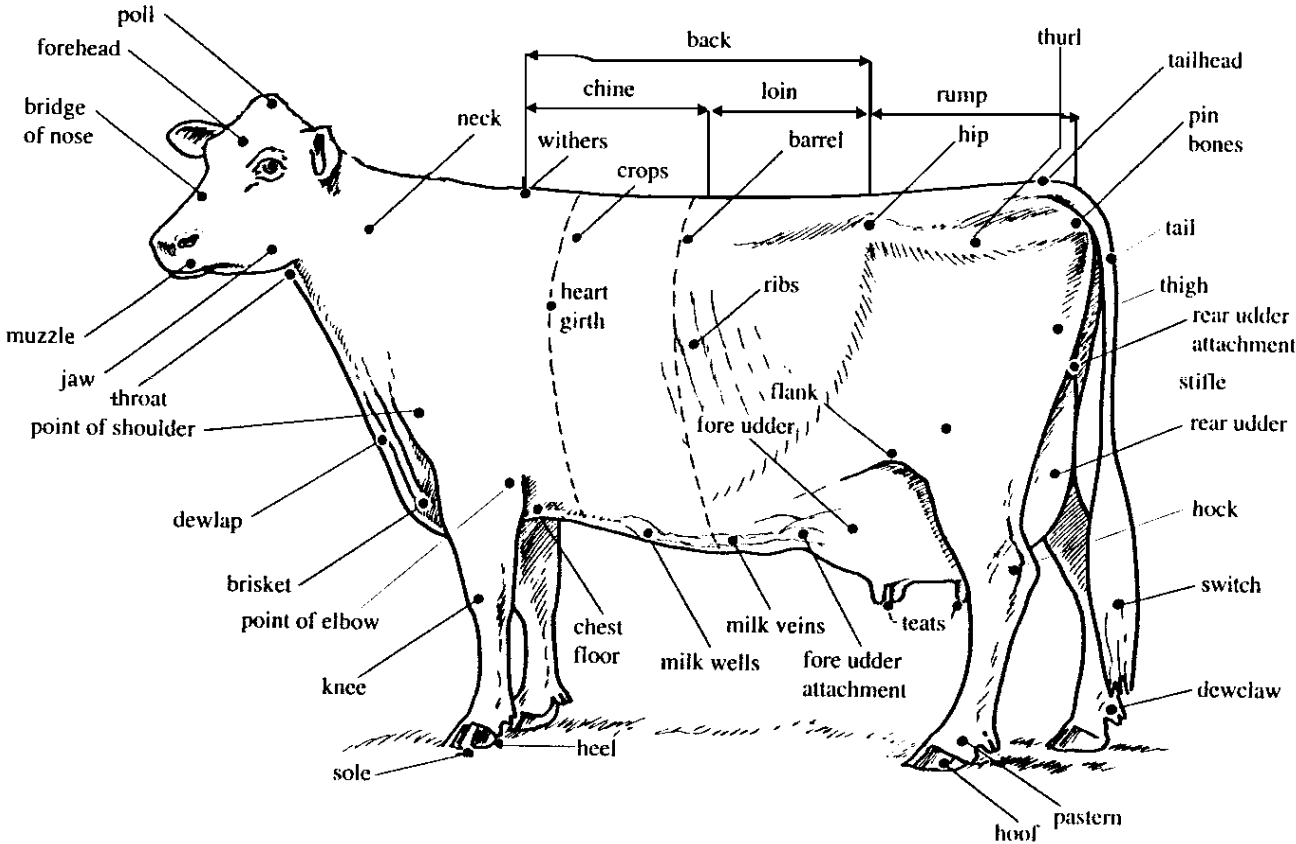
*Normal Vital Signs*

## 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.

# Dairy 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 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 method minimize the 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><b>Reefer's Knot</b> (<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><b>Bowline Knot</b>  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><b>Quick-Release Knot</b>  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><b>Honda Knot</b>  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><b>Square Knot</b>  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><b>Double Half Hitch</b>  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/index.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 dairy cattle identification include: ear tattooing, ear tagging, hot branding, freeze branding, neck chains, ankle bands, or implanted transponders.

### 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; They 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.

## **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.

### **NECK CHAIN OR ROPE AND NUMBER**

Advantages - Easy to read.

Disadvantages - Easily lost; Rare instances an animal will hang itself by the chain

#### Equipment Necessary -

Neck chain or Rope	Number	Halter	Squeeze Chute or Head Gate
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#### Procedure -

1. Assemble the necessary equipment.
2. Restrain the animal.
3. Position chain around the neck, making sure the tag has first been slipped on the chain.
4. The chain or rope should be tight enough that it will not slip over the head, but loose enough to interfere with breathing. Neck chains or ropes put on young animals must be checked periodically because as the animals grow, the chains will become tight.
5. Release the animal.

## **ANKLE BANDS**

Advantages - Loose fitting enough for good blood circulation. Also, tight enough not to be caught on a foreign a object.

Disadvantages - The cow may kick while you are trying to apply the ankle band.

Equipment Necessary -	Marking Paint or Fluid Squeeze Chute or Head Gate	Kow-Kant-Kick Ankle Band
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### Procedure –

1. Assemble the necessary equipment.
2. Restrain the animal.
3. Apply the ankle band around the rear leg. Follow the recommendations of the manufacturer.
4. Release the animal.

## **Dairy 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.

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|---|--|
| <ul style="list-style-type: none"> <li>• Antiseptic</li> <li>• A.I.</li> <li>• Bleach</li> <li>• Balling gun</li> <li>• Blood stopper</li> <li>• California Mastitis Test</li> <li>• Epsom salts</li> <li>• Dewormer</li> <li>• Emasculator/Elastrator</li> <li>• Ear tags</li> <li>• Disbudding iron/dehorner</li> <li>• Disinfectant</li> <li>• Dose syringe</li> <li>• Drench bottle</li> <li>• Fly tag</li> </ul> | <ul style="list-style-type: none"> <li>• Ear tag, tattoo, (ID)</li> <li>• Hoof trimmers</li> <li>• Mineral oil</li> <li>• Needles</li> <li>• Paint stick</li> <li>• Penicillin</li> <li>• Probiotic</li> <li>• Stomach tube</li> <li>• Syringes</li> <li>• Teat cannula</li> <li>• Teat dip</li> <li>• Thermometer</li> <li>• Tincture of Iodine</li> <li>• Vaccine</li> </ul> |
|---|--|

## Administering Medications and Vaccinations

As a routine part of herd health management, livestock producers must administer medicine. This is considered a critical control point in the production chain. The best way to avoid problems associated with this critical control point is simply to follow the drug's label and package insert and to identify each animal that receives the drug at the time you administer it. This way you won't forget to identify the animal and risk putting adulterated or contaminated milk in the tank or sending an animal to slaughter with tissue residues.

It is important to **administer** drugs properly. There are two key elements: (1) route of **administration** (the way you get it into the animal), and (2) dosage (the amount you give to the animal and the interval at which you give it). There are seven ways drugs can be **administered**:

- Oral
- Intramuscular
- Intramammary
- Topical
- Subcutaneous
- Intravenous
- Intrauterine

When treating animals with any of the above methods of **administration**, take the following precautions:

- Clean the injection site and use a sterile needle for all injections.
- Milk treated cows last.
- Use the labeled method of **administration** least likely to create a drug residue, such as, intravenous or subcutaneous.
- Discard milk from all four quarters even when treating only one quarter with an intramammary infusion.
- Keep medicated feeds separated from nonmedicated feeds.
- Thoroughly wash all equipment (inflations, hoses, weigh jars, etc.) that has come in contact with milk from treated cows before milking additional cows into the tank. This is particularly critical if treated cows are not milked last.
- Make sure that buckets used to receive milk from treated cows don't overflow and send contaminated milk into the pipeline.
- Ensure that calves fed antibiotic waste milk are not sent to slaughter until withdrawal times are met.

## 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:

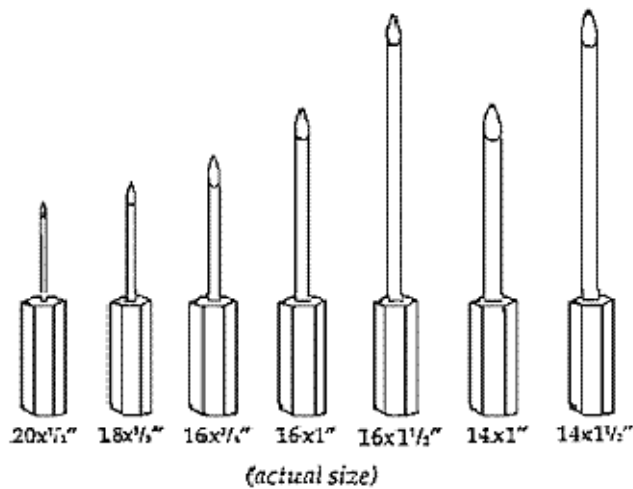
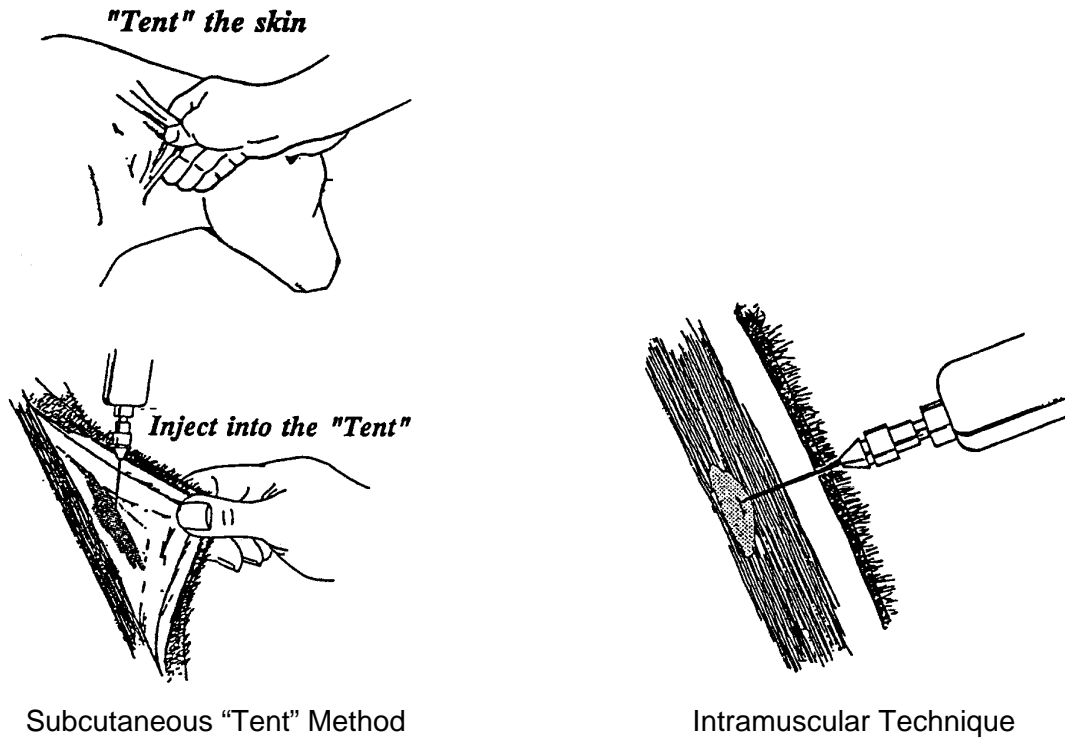
Place the needle just under the skin by picking up a fold of skin on the neck or shoulder between your fingers and insert the needle just under the fold of skin. Push the plunger to expel the injection into the animal.

### To give an intramuscular injection:

The needle must penetrate the muscle. Draw up the material as before. You may wish to rub the animal vigorously with your fingertips 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, 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: always WRITE IT DOWN.

## Giving Injections



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

# 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 **Milk and Dairy Beef Quality Assurance Program** provides guidance for dairy cattle managers in maintaining safe, high quality milk and meat. For detailed information visit: <http://www.nationaldairyfarm.com/>

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.



# Calculating Dosages

Seniors

Read medication labels carefully when calculating doses.

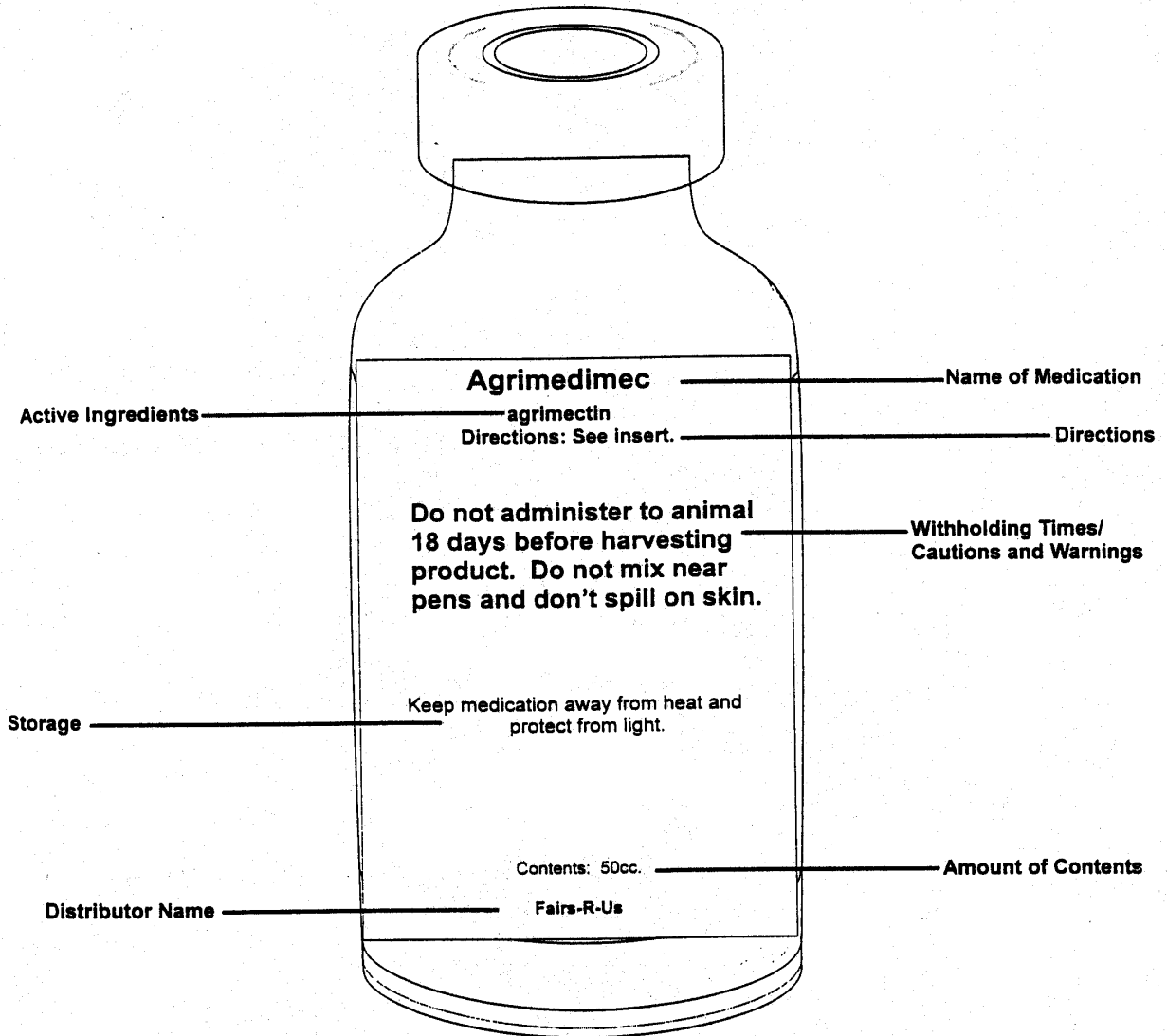
Example: A 300 pound sick animal requires an injection of antibiotic at a dosage rate of 2,500 units/pound. The antibiotic to be used contains 150,000 units/ml. How much antibiotic should the producer give to the animal?

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 trade names 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

<b>Seniors</b>
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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  
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: Mastitis  
Cause: Bacteria, *Streptococci*, *Staphylococci*, or *E. coli*  
Major Symptoms: Inflammation of the udder; decreased milk production.  
Prevention: Use California Mastitis Test (CMT) or somatic cell counts(SCC) – checks for white blood cells in mil; avoid injury to udder; use proper milking techniques.  
Treatment: Antibiotics, frequent milking, anti-inflammatories

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.

# DAIRY SHOWMANSHIP

**ATTIRE:**

Required Dress Code: 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. (White is preferred for dairy cattle) FFA and 4-H accessories are strongly recommended. No caps or hats. Closed-toed shoes or boots are required. Leather shoes are recommended when showing large animals.

Showmanship Scorecard:

A. Appearance of Animal.....	30
1. Condition and thriftiness, showing normal growth, being neither too fat nor too thin.....	5
2. Grooming ....	10
Hair properly groomed and the hide soft; hoofs trimmed and shaped to enable animal to walk and stand naturally.	
3. Clipping	5
The final clipping should be done about two days before the show.	
4. Cleanliness.....	10
Hair and switch clean and, if possible, free from stains; hide, ears, feet and legs free of dirt.	
B. Appearance of Exhibitor.....	10
Follow Florida State Fair required dress code.	
C. Showing Animal in the Ring.....	60
1. Leading	25
Enter the ring leading the animal in a clockwise direction, walking opposite her head on the left side, holding the lead strap with the right hand quite close to the halter with the strap neatly gathered in one or both hands. Holding close to the halter insures a more secure control. Your animal should lead readily and respond quickly. It is important to have a halter of right type, fitting properly and correctly placed on animal. A leather halter with a narrow nose strap is preferred. When the judge is evaluating your animal, the preferred method of leading is walking slowly backward facing the animal and holding the lead in the left hand with the remainder of it neatly, but naturally, gather in one or both hands. (Face forward when leading at all other times.) Lead slowly with the animal's head held high enough for impressive style, attractive carriage and graceful walk.	
2. Posing	15
When posing and showing an animal, stay on the animal's left side and stand faced at an angle to her in a position far enough away to see stance of her feet and her topline. To pose a heifer, place feet squarely under her with the hind leg nearest to the judge slightly behind the other one. When posing a cow in milk, the hind leg nearest to the judge should be slightly ahead of the other one. If possible, pose the animal on an incline. Neither crowd the exhibitor next to you, nor leave enough space for another animal when you lead into a side by side position.	
An animal may be backed out of line when a judge requests that her placing be changed. Many prefer to lead an animal forward and around the end of the line or back through the line. Do not lead an animal between the judge and an animal he/she is observing. Do most of the showing with the halter lead strap and avoid stepping on the animal's hind feet to move them.	
Step an animal ahead by a slight pull on the lead strap. Move an animal back by exerting pressure on the shoulder point with the thumb and fingers of the right hand as you push back with the halter.	
3. Show Animal to Best Advantage.....	10
Quickly recognize the conformation faults of the animal you are leading and show her to overcome them. You may be asked to exchange with another and show her or his heifer or cow for a while.	
4. Poise, Alertness and Attitude.....	10
Keep an eye on your animal and be aware of the position of the judge at all times. Do not be distracted by persons and things outside the ring. Respond rapidly to requests from the judge and officials. Be courteous and sportsmanlike at all times, and keep showing until the entire class has been placed and the judge has given his/her reasons.	
Total .....	100