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 Skillathon is **Health Care Management**.

The Florida State Fair recognizes that agricultural education instructors, 4-H 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. Additional information is available on the websites that are listed as well as from the American Rabbit Breeders Association
http://rabbitbreeders.us/american-rabbit-breeders-association

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

If you qualify for the "Champion of Champions" event, you will want to visit the State Fair website to download and study the skillathon manuals for the other species shows.

Juniors (age 8-10 as of September 1, 2025)
Body parts
Restraint, knot tying
Animal Identification (methods)

Intermediates (age 11-13 as of September 1, 2025)
all of the above plus...
Recognizing Illness
Preventing Illness
Health supplies
Animal Identification (procedures)
How to give an Injection, injection sites

Seniors (age 14 and over as of September 1, 2025)
all of the above plus....
Disease Identification
Medication label identification
Withdrawal times & Medical Calculations

GOOD LUCK!

Animal Health

Assuring animal health is a primary responsibility of livestock managers. Failure to do so results in animal suffering, decreased productivity and could even pose a threat to human health. Animal health is so important that the United States Department of Agriculture has an *Animal and Plant Health Inspection Service (APHIS)* to work with the livestock industry in disease prevention: https://www.aphis.usda.gov/aphis/home/. Concerns over bioterrorism and potential threats to human health make animal health concerns a top priority.

Disease is a departure from health. Disease may be caused by *infectious agents* like bacteria, viruses, fungi, protozoa, and parasites. Infectious diseases might be contagious, passing from one animal to another. Transmission occurs through *direct* or *indirect* contact with the diseased animal. Direct contact transmission happens when the diseased animal physically touches or is very close to another animal. Transmission is passed through saliva, nasal drainage, pus, feces, and/or blood. Some diseases remain viable long enough to be transferred by a third party. This is indirect contact. Contaminated feeders, waterers, shoes and clothing, farm equipment and tires, wild birds and animals, even human handling or working in pens, can all transmit diseases. Although exposure to infectious agents cannot be completely avoided, most of the time the animal will remain healthy, even with heavy exposure. On occasion, these agents overwhelm the body's immune system and the animal becomes ill.

Health problems may also occur from *noninfectious* causes. Malnutrition, trauma/injury, cancer, genetic defects, and environmental hazards like toxins, poison or extreme weather conditions can make animals sick. While these cannot be passed on to other animals, they can be stressors that lower the animal's resistance to any of the infectious diseases.

APHIS Disease Prevention:

FDACS Rabbit Hemorrhagic Disease Information

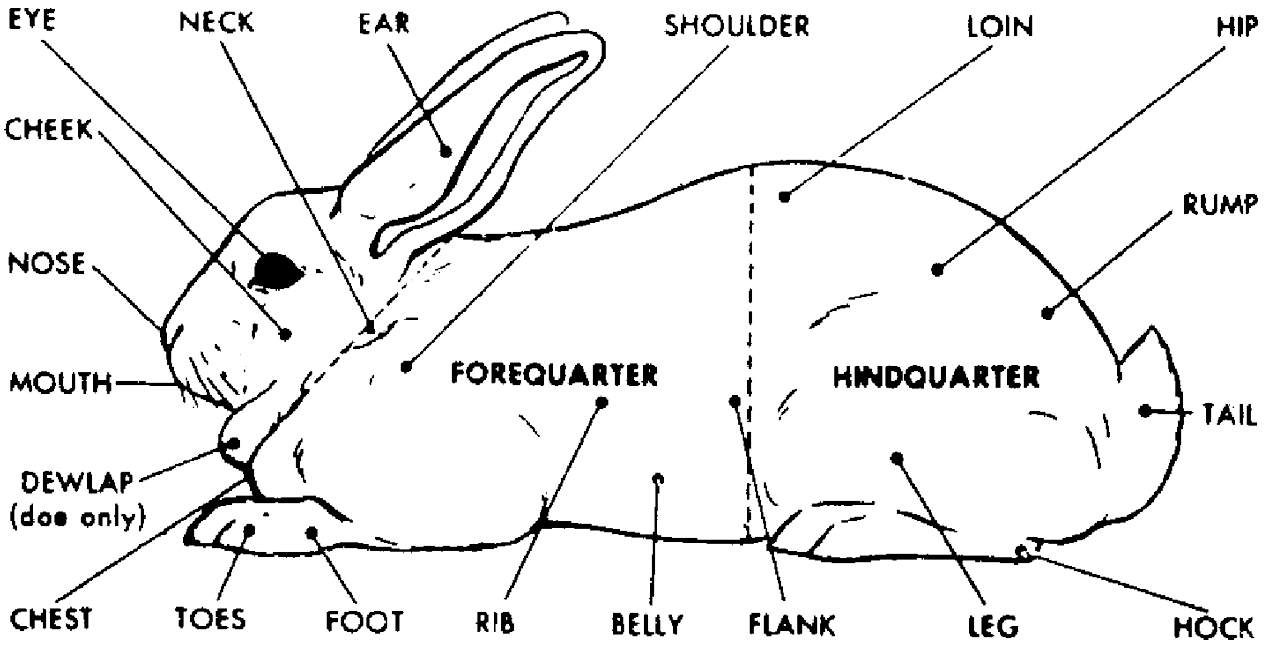
FDACS Rabbit Hemorrhagic Disease Info

In late 2020, some isolated cases of Rabbit Hemorrhagic Disease were found in Florida, prompting the Florida Department of Agriculture and Consumer Services to issue this announcement: https://ccmedia.fdacs.gov/content/download/98220/file/rabbit-hemorrhagic-disease-update.pdf and these recommendations: https://www.fdacs.gov/content/download/95854/file/Biosecurity-Recommendations-for-Rabbit-Clubs-Exhibitions-Fairs-and-Shows.pdf.

Juniors, Intermediates and Seniors

Rabbit 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 for rabbits are unlike other methods that are used in larger animals. Rabbits are generally confined in a small cage or held in one's hands to assess them. If the animal is flighty or very nervous, the small cage method is generally the best choice until they calm down enough to be handled. Most rabbits can be easily handled by resting them on a table or your lap while you stroke their head.

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
3. Confinement – cage, box
4. Tools and physical force – harness, hands
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.

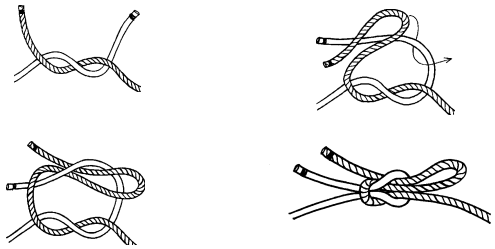
Ropes used in Restraint

Rope is one of the tools used most often by livestock producers. Though rope is rarely used to restrain rabbits, knowledge of rope, knots, and hitches is an indispensable farm skill. There are many circumstances in animal agriculture 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.

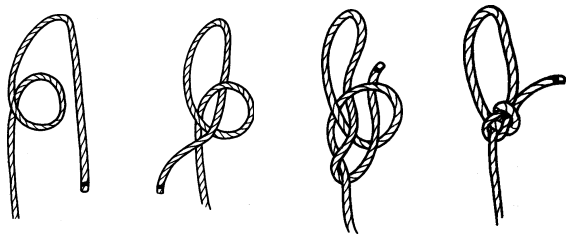
Knots join ropes together, attach ropes to a post or rail, or attach ropes to an animal.

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.

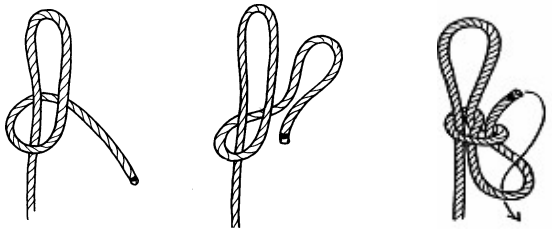
Splices are used to permanently join ropes to one another - individual strands from each rope are interwoven with strands from the other.



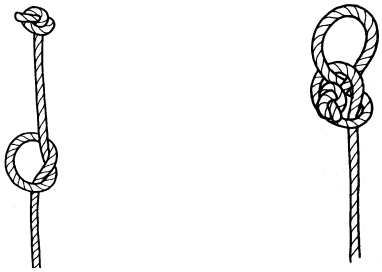
Reefer's Knot *(Quick-Release Square Knot)*
A good non-slip knot for tying ends of rope together and can easily be released. An advantage is that it can be tied under tension - an important feature for a knot used to restrain livestock.



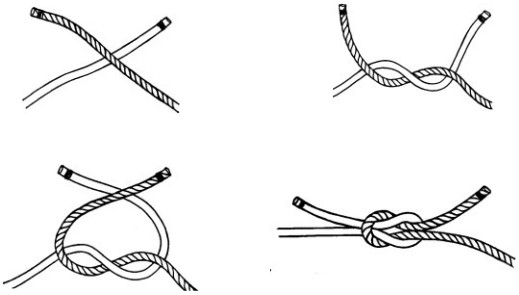
Bowline Knot
A non-slip knot used to form a loop that will not tighten or draw down when placed around an animal's body or a post.



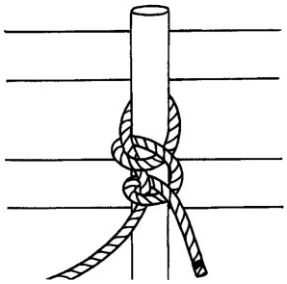
Quick-Release Knot
The standard way to tie an animal to a post. A variation of a slipknot that can be released very quickly, even when under tension. This knot should never be tied around the neck or body of an animal.



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.



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.



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.

Methods of Animal Identification

Juniors, Intermediates and Seniors

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 intent was to enable 48-hour trace back of the movements of any diseased or exposed animal to help ensure rapid disease containment and maximum protection of America's animals. Opposition to the program has led to less restrictive regulations for improved traceability of U.S. livestock moving between states. Animal Disease Traceability website: http://www.aphis.usda.gov/traceability/
For more details on identification, you may visit the American rabbit breeders' association website: https://www.arba.net/.

Few options exist for rabbits. Ideally, identification methods should be visible, easy to apply, unalterable, inexpensive and whenever possible, not cause harm or discomfort to the animal. The primary method of rabbit identification is ear tattooing, but transponders could be used.

TATTOOING

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

Disadvantages – Animal must be restrained to read it.

Equipment Necessary -

- Tattooing Instrument (A plier-style tattooer or an electric tattoo pen)
- Tattooing Ink or Paste
- Tattooing Numbers &/or Letters
- Clean ClothRabbit Box or Towel (for restraint)
- Alcohol

Procedures for Plier-style tattooer -

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. Some use a rabbit box for this purpose.
3. Locate the widest spot in the ear between the rib of cartilage nearest the bottom and the two ribs at the top
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. All Rabbits need to be tattooed in the left ear only. The right ear is reserved for a registration stamp.
8. Clean the tattooing equipment with Nolvasan (disinfectant) after each day of use.

For more information on tattooing rabbits:

1. Article: Instructions for Tattooing Rabbits (Pliers) - https://ohioline.osu.edu/factsheet/4h-35
2. Video: Introduction to the Rabbitry Tattoo Box (Pen) - https://www.youtube.com/watch?v=lrr2tctLaeM
3. Video: Tattooing Rabbits (Pliers) - https://www.youtube.com/watch?v=hiAvODdMow8
4. Video: Marking Your Rabbits for Records and Shows! How and Why of Rabbit Tattoos (Pen) - https://www.youtube.com/watch?v=_oLAUStxO3o.

1.

2.

3.

4.

Recognizing Illness

Intermediates and Seniors

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. Once this skill is learned, it becomes easier to recognize abnormal behavior. This is a skill that develops after working with and caring for livestock over time. Deviation from normal can be an early indicator that something may be wrong. This knowledge and close observation allows early intervention. Some of the characteristics that serve as the basis for assessing animal health include:

- Normal Eating Behavior
- Group (Herd) Behavior
- Normal Vital Signs
- Normal Fecal Pattern and Consistency
- Sounds or Acoustical Communication
- Normal Stance
- Movement
- Posture
- Activity Patterns

Keeping good records of feed and water intake, death loss, reproduction rate, and/or growth rate can help you notice if there is a health problem in your group. Major changes over time may mean a disease is present. Managers should take time each day to walk through the pens and notice the rabbits' actions and reactions.

Monitoring health in farm animals often includes assessing vital signs like body temperature, heart rate, and respiration rate. 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.

Rabbits have a relatively high body temperature of 102.5 (100.5 - 103.5) ˚F. In rabbits you can feel the heart beating under the ribs, or you may use a stethoscope to listen to the heart beat which ranges from 130 -150 bpm. Respiration rate can be measured by simply counting the expansion and relaxation of the rib cage and abdominal wall (30 - 60 breaths/minute).

It is also helpful to examine the mucous membranes (inner eye lid, insidethe 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.

Preventing illness

While all animal owners will likely experience losses due to illness and death, there are many things that can be done to limit illness and injury. There are many disease prevention practices that rabbit managers should follow. Some are listed below:

1. Buy healthy rabbits.
2. Quarantine all newly acquired rabbits away from the group for a minimum of 30 days to allow time for rabbits that have been exposed to a disease to show symptoms.
3. Isolate sick rabbits and give the correct medication at the correct dosage, for the correct duration to not only help heal the sick animal but to also protect the other rabbits in the group.
4. Use the correct feed for the age of the animal.
5. Provide a constant supply of fresh water. Daily checks should be made to insure that the water is clean, fresh, and within easy reach of every animal.
6. Provide for the safety of your animal with proper pens, checking for predators, being vigilant about repairs, maintaining a proper temperature and atmosphere, and preventing exposure to pesticides and harmful chemicals. Rabbits can be prone to overheating, so consider shade and other strategies to keep animals cool in warm weather: https://companion-animals.extension.org/hot-weather-care-for-rabbits/.
7. Reduce stress.
8. Provide good sanitation.
9. Vaccinate and deworm according to your veterinarian's recommendations.
10. Keep excellent records.

Hot Weather Care

Rabbit Health Supplies

Intermediates and Seniors

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. Examples of some extensive lists of items to have on hand for your rabbits are located here: https://thenaturetrail.com/rabbit-equipment/breeder-supplies-list/ and here: https://rabbit.org/care/house-rabbit-supply-list/

- Antiseptic/disinfectant
- Dewormer
- Needles
- Nesting boxes
- Side cutting pliers
- Syringes (typically 1 cc)
- Toenail clippers
- Tattoo equipment
- Thermometer
- Vaccines

List of Items

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.

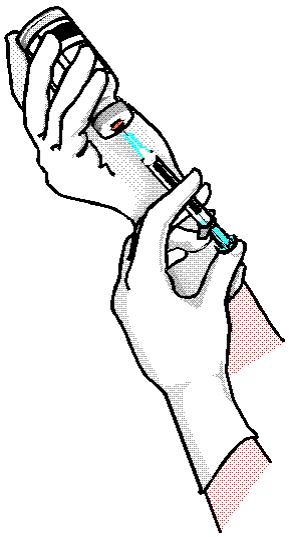
It is important to **administer** drugs properly.

There are three key elements:
1. **route of administration** (the way you get it into the animal)
2. **dosage** (the amount you give to the animal
3. the **interval** at which you give it

Medicines 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. Medicationsgiven by mouth may be fed, or given with 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. Here is a video on giving medicine orally to a rabbit: https://www.youtube.com/watch?v=ky5RnQdch2w .

Giving Medicine Orally

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.

Two common types of injections are *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 orangesections are comparable to the muscles, and the area in between thesetwo is the comparable to the subcutaneous space.

To draw up an injection, wipe the vial top (rubber stopper) with analcohol-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 youwant 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 vialright-side up, remove needle/syringe, and cap the 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. Here is a video demonstrating this technique: https://www.youtube.com/watch?v=9ANvqFeS0B0.

Sub-Q Injection

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 to trim away abscess sites. If given the option of subcutaneous or intramuscular, always choose subcutaneous. Here is detailed information from Virginia Tech: https://ouv.vt.edu/content/dam/ouv_vt_edu/sops/small-animal-biomedical/sop-rabbit-intramuscular-injections.pdf.

Virginia Tech IM injection info

Rabbit IM Injection

This video includes a demonstration on giving an IM injection: https://www.youtube.com/watch?v=dyfdwtez8Fc.

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.

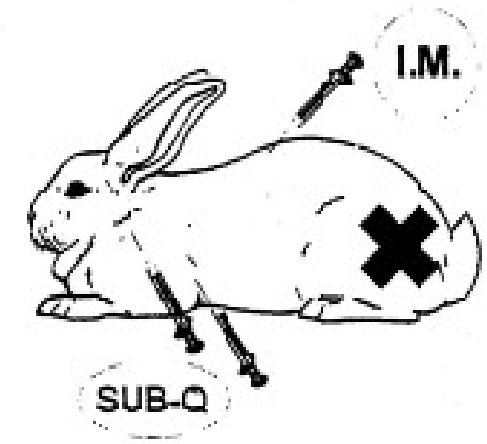
Injection Site Management

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 three areas: injection site management, residue avoidance (antibiotics, chemicals and feed contaminations), and foreign object avoidance (such as broken needles).

Relative to injections, keep in mind the following:
If intramuscular (IM) medications must be used, administer them in the perilumbar muscles (see illustration). Pet rabbits (those not being processed for human consumption) may also receive IM injections in the rear leg muscles. The volume of solution injected at one site will directly influence tissue damage, scar tissue and potential abscesses. Always use subcutaneous (SQ; under the skin) or intravenous (IV; in the vein) routes of administration when permitted by the product's label. Check product labels closely and administer the product as specified on the label. Select products that have subcutaneous (SQ) as an approved route of administration are preferable, especially for meat rabbits. Ask suppliers to find products that have SQ, IV or oral routes of administration rather than intramuscular (IM; in the muscle) route of administration. All medications, anti-parasitic treatments, and vaccine labels will include withdrawal times for the consumption of the meat. Pay attention and adhere to them.

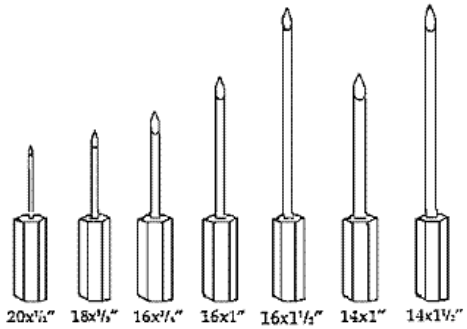
Giving Injections

Intermediates and Seniors



Needle Selection

Investigate needle gauges to find the correct size for your project animal. (Gauge number increases as needle diameter decreases.) Rabbits require small 21-23 gauge needles.



Seniors

Calculating Dosages

Read medication labels carefully when calculating doses.

Example: A 5 pound sick animal requires an injection of antibiotic at a dosage rate of 2,500 units/pound. The antibiotic to be used contains 50,000 units/ml. How much antibiotic should the producer give to the animal?

Step 1: Calculate how many units a 5 pound animal needs.
2,500 units/lb X 5 lbs = 12,500 units

Step 2: Calculate how many mls. of the antibiotic would deliver the needed units.
12,500 units / 50,000 units/ml = 0.25 mls.

Internal Parasites in Rabbits

Intermediates and Seniors

Internal parasites are organisms which live in and feed on internal body tissue or fluid for at least a portion of their life cycle. A health concern for one's rabbits will likely be controlling internal parasites. Worms are a type of internal parasite in rabbits. Pin worms are the most common worms in rabbits but they can also be infested with roundworms, whipworms, stomach worms, and tape worms.

Protozoal diseases such as coccidiosis and encephalitozoonosis can also be a problem in rabbits. A healthy rabbit in a clean pen typically will not develop coccidiosis.

Keep pens or hutches as clean as possible. This will help protect rabbits from parasites and disease. Worms and other internal parasites can rob the animal of weight gain and thriftiness. There are some anthelmintics (dewormers) are approved to use in rabbits. As with any drug, follow label directions.

Symptoms of internal parasite infestation in rabbits include weight loss, diarrhea, anemia, depression, listlessness, fast breathing, and head tilt. To diagnose most parasite infestations analyze a fecal sample under a microscope. For more information read these publications:
https://www.merckvetmanual.com/exotic-and-laboratory-animals/rabbits/parasitic-diseases-of-rabbits
and
https://www.petco.com/content/petco/PetcoStore/en_US/pet-services/resource-center/health-wellness/rabbit-parasites.html?irgwc=1&irclickid=xKB3ZpVrLxyLWzsU9f3jsRJDUkB31z2O0XVL0o0&cm_mmc=AFF-_-IMP-_-CCY-_-CCO-_-PM-_-AQU-_-NA-_-PM_AFF_FY21_eCommerceGen_Evergreen-_-2003851-_-657755.

Internal Parasites

Merck Vet

Petco

This photo shows evidence of an ear mite infestation in this rabbit.

External Parasites in Rabbits

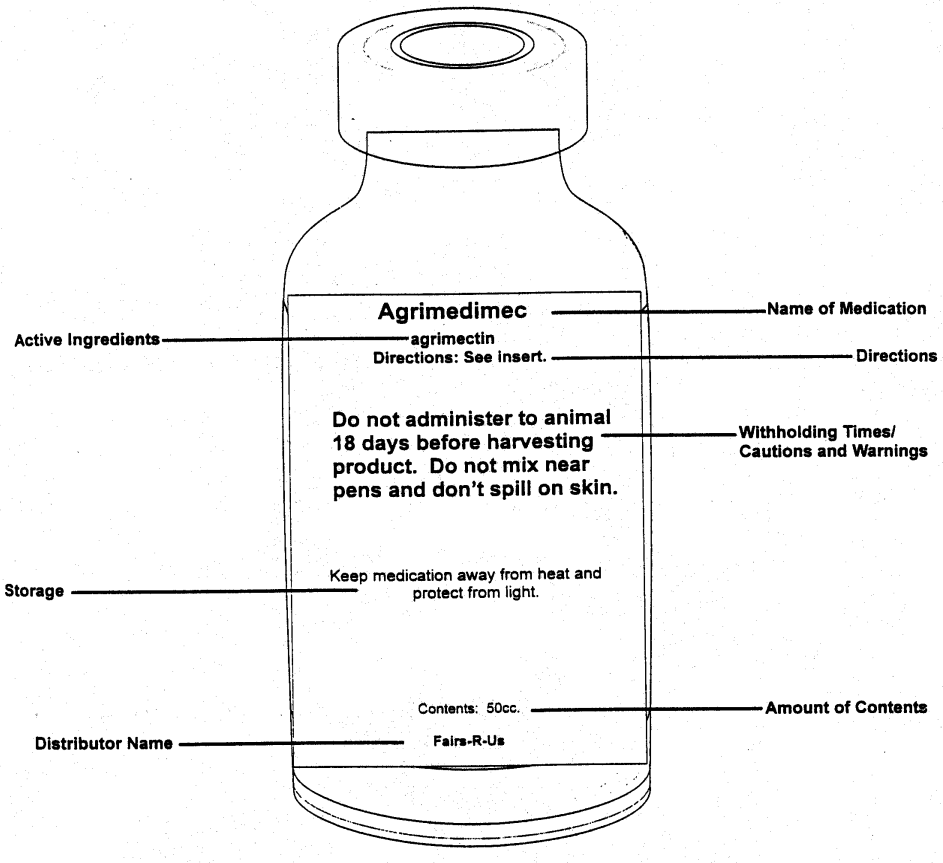
External parasites live outside the body and feed on the skin/hair/skin/blood of the animal for at least one part of its life cycle. External parasites can make an animal extremely uncomfortable and affect weight gains. Ear mites, fur mites, fleas, and cuterebra flies/larvae/maggots are examples of external parasites that can be of concern in rabbits. Insecticides and topical ointments (for treating ear mite infestations) are available to treat external parasites in extreme cases; check with your veterinarian or county Extension agent for advice. For more information on external parasites read this publication: https://www.merckvetmanual.com/exotic-and-laboratory-animals/rabbits/parasitic-diseases-of-rabbits.

External Parasites

Seniors

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

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?

Rabbit Diseases

Rabbit Diseases

Like all living things, rabbits can become ill due to a wide array of causes. From digestive disturbances to respiratory distress to reproductive complications, to parasites. Early recognition allows early intervention.
http://www.petmd.com/rabbit/conditions.

- Name:Pasteurellosis（Snuffles）
  - Cause: Bacteria, *Pasturella multocida*
  - Major Symptoms: Sneezing, coughing, discharge from nasal cavity, and going off feed are allsymptoms with Pasteurellosis.
  - Prevention: Isolating infected rabbits to keep the bacteria from spreading. The rabbit's area needs to have good ventilation, low ammonia levels, as well as low humidity.
  - Treatment: Infected animals are often treated with antibiotics under advisement of a veterinarian

- Name: Bordetellosis
  - Cause: Bacteria, *Bordetella Bronchiseptica*
  - Major Symptoms: The symptoms of snuffles are generally present when a bordetellosis infectionis present. Along with signs of snuffles, an upper respiratory infection with nasal discharge and sneezing can be present.
  - Prevention: A decrease in stressful conditions as well as culling of infected animals, and vaccination will aide in preventing an out break.

- Name: Coccidiosis
  - Cause: Protozoan
  - Major Symptoms: If the liver is the affected organ then the rabbit may stop eating and diarrheawill begin. The protozoan will cause lesions in the liver that can only be seen after death. If the intestinal tract is infected then the rabbit will exhibit weight loss, soft to watery feces, mucus or blood in the feces, soiled anal area, dehydration and an increase in thirst.
  - Prevention: Rabbits should be housed in a wire meshed floor enclosure, where the bottom of the cage does not come in contact with the rabbit or feeding area,and cleaned regularly.

- Name: Myxomatosis
    - Cause: Virus
    - Major Symptoms: In chronic cases the infected rabbit will show signs of lumps forming on the ears, nose, and paws.
    - Prevention: Vaccinate for Myxomatosis, and good sanitation of the rabbit and its environment. Once infected the environment should be disinfected, so as not to reinfect, or contaminate other rabbits.

- Name: Viral Haemorrhagic Disease
    - Common Name: VHD
    - Cause: Virus
    - Major Symptoms: Infected rabbits will show signs of anorexia, dullness, lethargy, an elevated temperature, incoordination, paralysis, difficulty breathing, bloody discharge from the nose, chronic to server jaundice (yellowing of the skin), and weight loss. They may also collapse and go into convulsions.
    - Prevention: Good herd management, good sanitation practices, and vaccination will all aid in prevention of an outbreak.