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Cooperative Extension Service ■ Kansas State University ■ Manhattan
Advancing in the Rabbit Project
by Reaching Goals
*Rabbits, Level III*

**What Members Will Learn . . .**

**ABOUT THE PROJECT:**
- To set goals for their rabbit project
- To explore various areas for rabbit projects

**ABOUT THEMSELVES:**
- Understanding the importance of overcoming barriers

**Materials Needed:**
- Flip chart and markers or chalkboard and chalk
- Rabbit Member Guide and Annual Report (MG-16)
- Activity Sheet 1, Barriers to Reaching My Goals (Two copies)

**ACTIVITY TIME NEEDED:** 40 MINUTES

**ACTIVITY**

As you become older, you can branch out into a variety of areas related to the rabbit project. This lesson is prepared to guide members into different areas of interest through a goal-setting process.

Some lesson suggestions might be:
- Determining when a doe is pregnant
- Learning how to dress a rabbit
- Learning how to tan a rabbit pelt
- Figuring dressing percentage
- Calculating average daily gain
- Learning to produce rabbit in the winter

**Goal setting**

After having had time to see all the topics that can be addressed when raising rabbits, it is time to make some goals for the year.

Let’s think about possible barriers that might prevent us from reaching our goals.

**Barriers**

It is important to know how to cope with and eliminate barriers that might stop you from reaching your goals. Some major barriers to reaching goals can include time, money, resources, knowledge or ability.

When you have completed question 1, fill out your Rabbit Member Guide and Annual Report, for MAP STEPS 1-3.

*3-Rabbits, Level III*
The best way to deal with barriers is to design strategies of how you will overcome the barrier.

For each step that you’ve listed on your Rabbit Member Guide and Annual Report, identify a barrier that you think could possibly prevent you from reaching your goal.

Now identify with two or three group members some ways of overcoming those barriers in question 3.

For question 4 identify what you think will be the biggest personal barrier you will encounter this year and how you plan to overcome it.

Now using your Rabbit Member Guide and Annual Report, complete MAP STEPS 4-7. Use a second copy of Activity Sheet 1, “Barriers to Reaching Goals,” to analyze your second major goal.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What is a barrier to reaching goals that has to do with time?

2. What is a barrier to reaching goals that has to do with money?

**Process:**
3. Why is it important to know possible barriers that might prevent you from reaching your goals?

4. How will you overcome barriers that prevent you from reaching your goals?

**Generalize:**
5. What frustrations occurred when you discussed barriers? Why?

6. How do you deal with the frustrations that result from working with barriers?

**Apply:**
7. What are some barriers that you may face in the future?
GOING FURTHER:
• Teach this goal-setting process to other 4-H members or groups.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist 4-H Youth Programs, Kansas State University

Reviewed By:
Rabbit Design Team
ADVANCING IN THE RABBIT PROJECT BY REACHING GOALS
RABBITS, LEVEL III
Activity Sheet 1, Barriers to Reaching My Goals

1. **BARRIER:** What might be a barrier to reaching a goal that could include?
   - time: __________________________________________
   - money: __________________________________________
   - resources: _________________________________________
   - knowledge: ________________________________________
   - ability: __________________________________________
   - other barriers: ____________________________________

2. **OVERCOMING BARRIERS:** What are some barriers that you might encounter when reaching your goals?
   For MAP STEP 2
   - Barrier 1: ________________________________________
   - Barrier 2: ________________________________________
   - Barrier 3: ________________________________________
   - Barrier 4: ________________________________________
   - Barrier 5: ________________________________________

3. **STRATEGIES FOR OVERCOMING BARRIERS:** How will you overcome the barriers that might prevent you from reaching your goal?
   For MAP STEP 2
   - Strategy 1: ______________________________________
   - Strategy 2: ______________________________________
   - Strategy 3: ______________________________________
   - Strategy 4: ______________________________________
   - Strategy 5: ______________________________________

4. **YOUR PERSONAL BARRIER:** What do you think will be your biggest barrier to overcome during the next year for your rabbit project and how do you plan to overcome it?

   __________________________________________
   __________________________________________
   __________________________________________

6-Rabbits, Level III
The History of Rabbits

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• A brief history of rabbits

ABOUT THEMSELVES:
• Understanding their personal history

Materials Needed:
• Chalkboard or flip chart
• Pencils and paper
• Activity Sheet 2, My Life History

ACTIVITY TIME NEEDED: 35 MINUTES

ACTIVITY

BRIEF HISTORY OF RABBITS
1. Rabbits have been mentioned in all of recorded history.

2. Rabbits exist world-wide and on all continents.

3. Some believe that rabbits were first domesticated in Africa.

4. Some believe that during the Middle Ages, French monks domesticated rabbits by keeping them in protected areas and selectively breeding them.

5. Rabbits have survived, multiplied and continued to replenish the earth under the most adverse conditions.

6. Rabbits have been used for food in Asia for more than 3,000 years.

7. Rabbits have been marketed for food in the European countries for more than 1,000 years.

8. In Spain, caves contain drawings of rabbits dating back to the Stone Age.

9. About 250 B.C., the Romans promoted rabbits in all areas where they were in power.

10. In the 15th century, the Portugese promoted rabbits to provide a supply of fresh meat for their long journeys.

Leader Notes
Either you or a guest speaker should be brought to this meeting to lecture/discuss the history of rabbits.

Be sure all of the following information is included.

Outline on chalkboard or flip chart.

Check your local library for a video or slide set that might cover rabbit history.

7-Rabbits, Level III
11. In some areas, the rabbits multiplied so rapidly that the Romans and Portugese could not control them.

12. In Australia, rabbits imported from England multiplied quickly because they had no natural enemies and stringent methods of control were needed.

13. In Rome, it was believed that rabbit meat promoted the beauty of women.

14. During the second half of the 19th century, rabbits were taken to islands near the south pole to provide fresh meat for whale hunters and research teams. In the sub-artic temperatures during winter, when there was no vegetation of any kind, the rabbits adapted to living on seaweed that drifted ashore.

15. Ancient Aztecs held rabbit meat in high esteem.

16. Aztec court physicians prescribed rabbit meat for an effective body rebuilder.

17. The American Indians hunted rabbits since early times.

18. During the time of Confucius, the Chinese used rabbits in religious ceremonies. It is believed that 35,000 Himalayan rabbits per year were used as sacrificial animals.

19. By 1850, 70 million rabbits were produced annually in France.

20. Rabbits are raised in all 50 states.

21. Most felt hats are made of rabbit fur.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What was one interesting thing you learned about rabbits?

2. Name several other countries where rabbits are very important to the culture.

**Process:**
3. How have rabbits affected the history of other countries?

**Generalize:**
4. How does knowing the history of another project animal help you understand that animal?
Apply:
5. If you were writing a history of your life, how would you like to be remembered?

6. Are there events in your history that you are proud of? What are they?

GOING FURTHER:
• Prepare a talk on the history of rabbits.
• Write an essay on the history of rabbits for your local newspaper.

REFERENCES:
Official Guide To Raising Better Rabbits, American Rabbit Breeders Association

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
THE HISTORY OF RABBITS
RABBITS, LEVEL III
Activity Sheet 2, My Life History

Write or think about an important event in your life when you were about the age mentioned in the chart below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Important Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Born on</td>
</tr>
<tr>
<td>1 - 3</td>
<td></td>
</tr>
<tr>
<td>4 - 6</td>
<td></td>
</tr>
<tr>
<td>7 - 9</td>
<td></td>
</tr>
<tr>
<td>10 - 12</td>
<td></td>
</tr>
<tr>
<td>13 - 14</td>
<td></td>
</tr>
</tbody>
</table>

What was the most important event in your life?

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

What was the most interesting event in your life?

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

Select two events in your life and share them with a member.
Recognizing the Rabbit’s Bony Parts
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• The principle bones of the rabbit skeleton

ABOUT THEMSELVES:
• Importance of developing a strong foundation

Materials Needed:
• Bones from front leg
• Bones from hind leg
• Activity Sheet 3, The Rabbit Skeleton
• Leader’s Key, Activity Sheet 3, The Rabbit Skeleton

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY
If you understand the skeleton of a rabbit, you will better understand the importance of genetics and conditioning the show rabbit.

Leader Notes
Hand out the drawings of the rabbit skeleton.

Go over the various bones by pointing them out on the skeleton.

Have the members compare the front leg bones and the hind leg bones.

Give the members a few minutes to look over the skeleton and find the various bones.

Divide the group into teams and have a contest seeing which team can recognize the most bones. You could have a member from team I ask team II to locate a particular bone. Then reverse the procedure. Continue until all members have had a chance to ask questions.
DIALOGUE FOR CRITICAL THINKING:
Share:
1. What was the easiest/hardest part of a rabbit’s bony structure to recognize?

2. How many of the bony parts do you remember?

Process:
3. Why is it significant to know the rabbit’s bony parts?

4. Why does a rabbit with good structure or foundation make a better show rabbit?

5. What are some things that affect the growth of a rabbit’s bony parts?

Generalize:
6. What other animal structures have you studied? Why was it important?

Apply:
7. Why is a strong foundation an important step in building any project or event in your life?

GOING FURTHER:
- Prepare a skeleton of a rabbit.
- Prepare the bones of the front leg of a rabbit.
- Prepare the bones of the hind leg of a rabbit.
- Visit a natural history museum.

REFERENCE:
*Practical Anatomy of The Rabbit*, E. Horne Craigie, Blakiston Company

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
RECOGNIZING THE RABBIT’S BONY PARTS
RABBITS, LEVEL III
Activity Sheet 3, The Rabbit Skeleton

Match the number of the correct bone with the name below.

_____ Cranial portion of the skull               _____ Ulna
_____ 7th cervical vertebra                     _____ Mandible
_____ Epistropheus                              _____ Pelvis
_____ Humerus                                   _____ Scapula
_____ 5th Rib                                   _____ Tibia
_____ Hyoid                                     _____ Facial portion of the skull
_____ 7th lumbar vertebra                       _____ Femur
_____ Tarsus                                    _____ 12th thoracic vertebra
_____ Phalanges (digits)                        _____ Radius
_____ Atlas                                     _____ Rib cage
_____ Clavicle
RECOGNIZING THE RABBIT’S BONY PARTS
RABBITS, LEVEL III
Leader’s Key, Activity Sheet 3, The Rabbit Skeleton

Match the number of the correct bone with the name below.

1  Cranial portion of the skull
8  7th cervical vertebra
6  Epistropheus
11 Humerus
14 5th Rib
3  Hyoid
16 7th lumbar vertebra
20  Tarsus
21  Phalanges (digits)
5  Atlas
10  Clavicle

13  Ulna
4  Mandible
17 Pelvis
9  Scapula
19  Tibia
2  Facial portion of the skull
18  Femur
15  12th thoracic vertebra
12  Radius
7  Rib cage
Cold Weather Rabbit Production
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• The different ways to make cold weather rabbit production successful

ABOUT THEMSELVES:
• Understanding of inputs as related to outcomes

Materials Needed:
• Nest box
• Nest box heating pad
• Styrofoam
• Nesting materials (peanut hulls, wood shavings, cat litter, finely shredded paper, etc.)
• Chalkboard or flip chart

ACTIVITY TIME NEEDED: 25 MINUTES

ACTIVITY

The rabbit producer often experiences increased kindling mortality and increased breeding problems during the winter months. This results in a decrease in production efficiency.

Constant year-round production is important to the fancier and essential to the commercial breeder if success on the show table and financial success is to be achieved.

Whenever the expectant doe is exposed to temperatures of 45°F and below, special management techniques must be used to protect the young kits.

The more the temperature drops, the more important and more dramatic the management practices are.

How much protection a pregnant doe needs from weather conditions depends on the type of protection the does housing structure gives and how much additional heat already is provided.

It is very important that the “core temperature” within the nest be maintained at approximately 67 to 69°F at all times during the first 10 to 12 days.

The appropriate size nest boxes must be used. The closer the kits “huddle” in the nest, the more heat is conserved by each of the kits in the litter.

Leader Notes
List main points on chalkboard or flip chart, or develop a skillathon situation and see how members use the materials.
Nest boxes that are too large encourage the doe to sit in the box to protect herself from the cold. If this happens, the doe oftentimes urinates and defecates in the nest box. Moisture in the nest box results in nest box fatalities.

Absorbant materials should be placed on the bottom of the nest box. Wood shavings, peanut hulls, finely shredded paper, cat litter, etc., should be used to absorb moisture from the developing young.

The colder the temperature, the more absorbant the nesting materials need to be.

Wooden nest boxes are best for cold weather kindling. Strict attention should be given to the floor of the nest box. Most of the heat loss from the kits is through the floor of the nest.

To prevent loss through the floor, use several layers of newspaper in the bottom of the box or put in a layer of Styrofoam. You need to put a board or wire bottom over the Styrofoam or the doe will tear up the Styrofoam.

Some breeders attach Styrofoam to the outside bottom of the nest box.

Heat lamps and heated nest box pads have been used by some breeders. The heat pads have proven more successful.

If heat lamps are used, they are more effective if the rays are directed at the bottom of the nest box from the underside of the cage.

Disadvantages of heat pads and heat lamps are that many small rabbitries do not have electricity available, it is difficult to control the temperature of the nest box, the possibility of fire, and that rabbits tend to chew electrical cords.

Some breeders discontinue mating during cold weather. However, this is disappointing and detrimental to the breeder. Junior animals will not be available for the spring shows. Does not on a regular breeding schedule have a tendency to become overly fat and difficult to breed.

A management practice known as “nest box rotation” can be used to perpetuate a breeding program throughout the entire year. The doe is allowed to kindle in an appropriately prepared nest box. Within a short period of time, after the doe has kindled, the entire nest box is removed taken to an area that is dry and warm (72°F).

This allows the core temperature of the nest to be maintained somewhere between 67 and 69°F by the heat that is produced from the small kits’ bodies.
The nest is then returned to the doe’s cage at approximately 12-hour intervals to allow the doe to nurse the young. The nest box is left in the doe’s cage for about 30 minutes and then returned to the warm, dry area.

This practice is continued for 10 to 12 days or until the environmental temperature increases to the point that the kits will be kept warm.

Disadvantages are that this is somewhat time consuming and one must use caution to return the proper nest box to the proper cage.

This practice is used in many foreign countries year-round.

The reason this method is successful is due to the following facts:

1. The doe normally feeds the young only once or twice a day.
2. The doe has the ability to allow for milk let down and rapid lactation.

Some breeders move the expectant doe into a warm area for kindling and return her to her cage after the kindling process. The manager will then use the “nest box rotation” method.

By adapting one of several management practices available, one can successfully raise young rabbits on a year-round basis.

DIALOGUE FOR CRITICAL THINKING:

Share:
1. What are several management techniques used to protect young kits when the weather drops below 45°F?
2. What “core temperature” should be maintained for the nest?

Process:
3. Why is constant year-round production important to the commercial rabbit breeder?

Generalize:
4. What are other management techniques you will use to keep cost of production low when working with other project animals?
5. In what other activities might you encounter additional production costs?
6. What is the significance of constant production as opposed to seasonal production?

Apply:
7. How do you determine when the costs of time, energy, and inputs are justified?

List advantages and disadvantages of “nest box rotation.”
GOING FURTHER:
• Visit a rabbitry during the winter to see how they are utilizing this lesson.
• Make a list of the costs and returns if these cold weather practices were used.

REFERENCES:
Domestic Rabbits, January-February 1989

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Making a Rabbit Wire Cage
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to cut out and assemble a wire cage

ABOUT THEMSELVES:
• Following directions and understanding consequences

Materials Needed:
• 14 Gauge 1 × 2-inch wire 30 inches wide for top
• 14 Gauge 1 × 2-inch wire 18 inches wide for sides
• 16 Gauge 1 × ½-inch wire 30 inches wide for bottom
• J clips
• J clip pliers
• Wire cutters
• Measuring tape
• Latches
• Chalkboard or flip chart

ACTIVITY TIME NEEDED: 40 MINUTES

ACTIVITY
Members need to know how to make cages for their rabbits in order to replace cages and make additional cages as the size of their herd increases.

First, you need to decide what you want to use the cage for—is it to house a doe and her litter, a buck or a growing rabbit. The breed you raise also will make a difference in the size of the cage. Today, we will build a cage for the commercial type doe and litter.

A good size for this cage would be 30 × 48 × 18 inches. We need to cut a piece of 1 × ½-inch wire 30 × 48 inches for the bottom.
We need to cut a piece of 1 × 2-inch wire 30 × 48 inches for the top.
We need to cut two pieces of 1 × 2-inch wire 18 × 48 inches for the front and back.
We need to cut two pieces of 1 × 2-inch wire 18 × 30 inches for the ends.
Using the J clip pliers, put the cage together.

Leader Notes
List steps or pieces on chalkboard or flip chart.
Help each member or do project in small groups.
Have the members help cut out the wire.
Now we have a cage but don’t have any way to get a rabbit in it. Therefore, we need to cut a door. Starting 6 inches from the left side, cut an opening $14 \times 16$ inches in the front. Be sure to leave 2 inches at the top and bottom of the opening.

For the door, cut a piece of $1 \times 2$-inch wire $15 \times 18$ inches. Using J clips, attach the door to the top of the opening in the front. Now attach the latches to the door.

If you are going to use self-feeders, an opening will have to be made for the feeder.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What purpose is your rabbit cage going to serve?
2. What do you think will be the easiest/hardest part of building a rabbit wire cage?

**Process:**
3. How did you organize your materials and directions for building your rabbit wire cage?
4. Did you have a major drawback or barrier to building your wire cage? If so, what was it? If not, what was a problem that you thought might occur?

**Generalize:**
5. In what other projects have you needed to follow directions?

**Apply:**
6. Why are some directions important to follow?
7. What are some of the positive consequences of following directions? Negative consequences of **not** following directions?
GOING FURTHER:
• Research the size of cage you need for each of the breeds.
• Help the fair superintendent make rabbit cages for the fair.

REFERENCES:
Official Guide to Raising Better Rabbits, American Rabbit Breeders Association
Cooperative Extension Service, University of Arizona

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Making a Rabbit Carrier
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to make a rabbit carrier

ABOUT THEMSELVES:
• Importance of precision and accuracy in their lives

Materials Needed:
• Metal tray 16 × 16 × 2 inches
• 1 × 1-inch wire
• 1 × ½-inch wire
• J clips
• J clip pliers
• Wire cutters
• Pine board ½ × 3 × 70 inches
• Pine board 1 × 8 × 42 inches
• Nails
• Staples
• Hammer
• Saw
• Springs and hooks (3)
• Member Handout 1, Pictures of Wire Rabbit Carriers

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

The most popular rabbit carrier is one made out of wire with a tray. Beginners can make a carrier out of wood and wire.

Wire Carrier

In order to make a carrier out of wire, cut four pieces of 1 × 1-inch wire 16 inches long and 10 inches wide, one pieces of ½ × 1-inch wire 16 × 16 inches, one piece of 1 × 1-inch wire 8 × 16 inch and one piece of 1 × 1-inch wire 18 × 20 inches.

Using J clips, make a square out of the four 16 × 10 inch pieces of 1 × 1 inch, attaching the pieces at the 10-inch sides. Attach the 16 × 16 piece of ½ × 1-inch wire 2 inches from the bottom. Now attach the 8 × 16 piece of 1 × 1-inch wire in order to divie the compartment into two cages.

We are now ready to make the lid. Take the 20 × 18-inch piece of 1 × 1-inch wire and, along the 20-inch side, cut out 2-inch square pieces of wire. Now bend the wire up 2 inches on the three sides next to where...

Demonstrate the steps as you go along.
the squares were cut out. Using J clips, attach the other side to the carrier. To complete the lid, J clip the area when the bend up sides meet.

Now we are ready to attach a spring and hook for a latch. The other two springs and hooks are used to hold the tray to the carrier. You can put wood shavings, cat litter, etc., in the tray when you are taking your rabbit to a show.

**Wooden Carrier**
A wooden carrier can be made by cutting a 1 × 8-inch pine board 16 inches long and two 1 × 8 × 11 inches. These are the bottom and ends of a one-hole carrier. Nail the bottom to the ends. Cut two pieces of 1 × 1-inch wire 16 × 11 inches for the sides. Using staples, attach to the wood. Cut two pieces of ½ × 3-inch pine lumber 16 inches long. Attach these to the sides and bottom.

Now we are ready to make the lid. Cut a piece of 1 × 1-inch wire 16 × 9 inches. Along the 16-inch side, bend the wire over 1 inch. Attach the other side of the lid to the carrier using J clips. Use a spring and hook for a latch. The carrier may be painted if you wish.

When you use the wooden carrier, put straw in the bottom of the carrier before putting in the rabbit.

These carriers are for medium-sized rabbits; if you have smaller or larger rabbits, the size will change.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What are the two most popular materials for making a rabbit carrier?

2. How easy/difficult was it to make the carrier?

**Process:**
3. What is the purpose of having a rabbit carrier if you have a rabbit cage?

4. What do you think will be the best materials to make the rabbit carrier with? Why?

5. When bending the wire or nailing the wood for the carrier, why is it important to use precise measurements.

**Generalize:**
6. What other projects require you to measure accurately?
Apply:
7. What other activities require precision and accuracy?

8. How do the outcomes of precision and accuracy relate to following directions?

GOING FURTHER:
• Make a wire hutch for your rabbits.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Think back:
What is significant to you about the history and basic structure of rabbits?

How does this aspect affect the barriers to reaching your goals?

How does cold weather affect the use of wire cages or carriers?
Administering Rabbit Medicines

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
- To properly administer medicines

ABOUT THEMSELVES:
- Appropriate use of medication

Materials Needed:
- Bottle of sterile water
- Oranges
- Syringes
- Medicated feed

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

The member needs to know how to care for the sick rabbit. Being able to administer medicines to your rabbits can save veterinary expenses.

There are three common ways to administer medicines to rabbits:
1. In the feed.
2. In the drinking water.
3. By injection.

Sulfaquinoxaline at the rate of 0.025 percent in feed is used to control liver coccidiosis. Griseofulvin at a rate of 0.37 g/lb of feed is used for the control of fungal infections. Long-term usage is not recommended.

Piperazine citrate, 100mg/100ml water, is administered to eliminate round worms. The treatment is for one day only.

Penicillin G injections are used for vent disease and pneumonia. Pencillin injections should be given intramuscularly. Check with your veterinarian for the actual dosage.

To learn how to give an intramuscular injection, use an orange as the rabbit. Put 2 or 3 cubic centimeters of water in the syringe and inject the orange. Stick in the needle and squeeze out the water.

Sometimes the veterinarian will prescribe a powdered drug, capsules or liquid medication. To administer these, grasp the rabbit by the loose skin behind its neck and tip it back, sliding your other hand under its haunches at the same time. Allow the animal to lean against you as if you were checking the sex. Tip the rabbit’s nose up, gently press the jaws apart.

Demonstrate how to fill the syringe.
Now demonstrate how to inject the rabbit using an orange as the rabbit.
Have the members try to inject an orange.
Remind the members:

1. That some medicines must be injected just under the skin while others must be given intramuscularly. Check the medicine bottle to find the method to use.
2. That they should check with a veterinarian on the dosage to be used.
3. That all medicines should be withdrawn for a period of time before slaughtering. Check the medicine bottle or feed label for the length of time.
with the thumb and forefinger. Place the medicine on the back of the rabbit’s tongue. Allow the rabbit to close its mouth and gently stroke the chin until the rabbit swallows. Liquid medication can be given this way using an eye dropper to put the medicine on the rabbit’s tongue.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Name three ways of administering medicines to a rabbit.

2. Which way of administering medicines do you think will be the most difficult to do?

**Process:**

3. What is the difference between giving an injection under the skin and intramuscularly?

4. What rabbit medications would you give under the skin and which rabbit medications would you give intramuscularly?

**Generalize:**

5. When have you used medications for other project animals?

6. Why is it important to know when to use medications?

**Apply:**

7. How do you determine when it is appropriate to use over-the-counter medications and when it is appropriate to seek help?

**GOING FURTHER:**

- Research common rabbit diseases.
- Investigate how to control all kinds of parasites.

**REFERENCES:**

Cooperative Extension Service, The Ohio State University

*Domestic Rabbits: Diseases and Parasites*, United States Department of Agriculture

Cooperative Extension Service, New Mexico State University

**Author:**

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**Reviewed by:**

Rabbit Design Team

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All educational programs and materials are available without discrimination on the basis of race, color, national origin, sex, age, or disability.
Controlling External Parasites
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• To have an understanding about the common external parasites
• To control common external parasites

ABOUT THEMSELVES:
• Taking responsibility for preventing problems

Materials Needed:
• Chalkboard or flip chart

ACTIVITY TIME NEEDED: 20 MINUTES

ACTIVITY

An understanding of potential parasite problems and how to control them is essential for a successful rabbit-raising project.

EXTERNAL PARASITES OF RABBITS

Ear Canker or Ear Mange—Ear canker is caused by the common ear mite (Psoroptes cuniculi). The mites live in the ear canal and damage the skin. A brown, waxy material soon covers the inner ear. This encrustation consists of dried blood, cellular debris, keratin and mites in various stages of development.

An effective treatment is to remove the encrustation with a cotton swab soaked in mineral or vegetable oil. Allow some of the oil to run into the ear passage. Repeat this procedure in four days. A 0.25 percent suspension of Lindane in mineral oil is an effective medication. Ivermectin has proven to be very effective at controlling ear canker. Inject 0.20 cc of Ivermectin just beneath the skin at the nape of the neck. Remember, all your rabbits need to be treated if you find an infected animal. Sanitation is important for control.

Mange—Mange is caused by Psoroptes cuniculi, Notoedres cati, and Cheyletiella parasitovorax. These mites cause the skin to be come dry, scaly, irritated and itchy with hair loss in the affected areas. Treat with a powder containing 0.25 percent Lindane. The best control method is good sanitation.

Fleas—The rabbit flea, Spilosyllus cuniculi, and the dog and cat fleas, Ctenocephalides canis and C. felis, occasionally have been reported on rabbits. There are four stages in the life cycle of a flea—egg, larva, pupa, and adult. The eggs are deposited in nesting materials and cracks of the nest boxes. The eggs hatch into larvae who form the pupae from which the adult emerges. Treat the rabbits by dusting with a com-

Leader Notes
List cause, symptoms and treatment for each parasite on chalkboard or flip chart.

Describe symptoms or show a rabbit with symptoms and see if members can discuss treatments.
mmercial preparation of Pyrethrum or Rotenone. Properly destroy nesting materials and wash the nest boxes using bleach. Keep cats and dogs away from all rabbit supplies, especially nesting materials.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Name two external parasites that might affect a rabbit’s well being.

2. Have you ever observed any of these parasites? Explain what they look like.

**Process:**

3. What are some signs that a rabbit is infected with mites or fleas?

4. How would you attempt to control these parasites?

5. What is significant about understanding these external parasites?

**Generalize:**

6. What other project animals have you had that have similar external problems?

7. Why is it important to be responsible for preventing problems?

**Apply:**

8. Why is it important to be responsible for yourself no matter what the situation?

**GOING FURTHER:**

- Visit a veterinarian to see if they have animals or visuals to show examples of external parasites.

**REFERENCES:**

*Rabbits USA,* March 1989, Volume I, Number 3

*Domestic Rabbits: Diseases and Parasite,* Agriculture Handbook No. 490, Agricultural Research Service, United States Department of Agriculture

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Rabbit Design Team
Controlling Internal Parasites
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
  • The common internal parasites
  • How to control these parasites

ABOUT THEMSELVES:
  • Importance of good sanitation practices

Materials Needed:
  • Chalkboard or flip chart
  • Member Handout 2, Life Cycles of Coccidia and Tapeworm
  • Activity Sheet 4, Common Parasites

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

INTERNAL PARASITES OF RABBITS
Members need to learn about the common internal parasites in order to be able to control these internal parasites.

Coccidia—Coccidiosis is the most common parasite disease in domestic rabbits. The microscopic parasites invade the liver and small intestines. Here the parasites multiply and are passed out of the body in the feces.

Four species of coccidia live in the small intestines and one specie of coccidia infects the liver. Infections of the liver after (or more than) 16 days can be recognized by white, circular nodules on the liver.

Control involves the minimization of fecal contamination of feed and water. Feed containing 0.025 percent sulfaquinoxaline is an effective treatment for liver coccidia. Intestinal coccidia develop a tolerance to the drug thus it should not be fed continuously.

Stomach Worms—Obelisoides cuniculi are slender, cylindrical reddish roundworms about ½ inch long. Life cycle involves the eggs being passed in the feces; after a short time the eggs hatch into infective larvae. The larvae are ingested and pass to the stomach where they grow to adults. Diarrhea and emaciation may result. Stomach worms are rarely found when the rabbits are raised in hutches aboveground. The best control is good management practices.

Intestinal Worms—Trichostrongylus calcaratus live in the small intestines. They are about the same size as stomach worms and have a similar life cycle. Infection is rare when rabbits are raised in hutches.

Leader Notes
List each parasite on chalkboard or flip chart as it is discussed. Also list symptoms and controls.
Discuss coccidia life cycle on handout.
aboveground. Good sanitation and management practices are the best control.

**Pinworms**—*Passalurus ambiguus* is a common parasite of rabbits. These are ½ inch long, glistening, white worms. They often are seen on the surface of the freshly passed feces. These parasites are spread by contaminated feed and water. A one-time treatment with Piperazine citrate (100 mg/100 ml water) is effective. Sanitation is the best control.

**Tapeworms**—Tapeworms occur in rabbits as adults in the intestines and as larval forms in the liver and abdominal cavity. Adult forms are very rare in hutch-raised rabbits but larval forms are observed.

The rabbit tapeworm, *Cittoteania ctenoides*, is flat, ribbon shaped and made up of numerous segments. The head has four suckers with which the worm attaches to the lining of the intestine. When many tapeworms are present, diarrhea and emaciation occur. Control is accomplished by good sanitation.

The larval forms of tapeworm most often found are those of *Taenia pisiformis*, dog and cat tapeworm. These are acquired when the rabbit ingests feed or water contaminated from the feces of dogs or cats. The eggs hatch and the larvae penetrate the intestine and migrate to the liver. They migrate in the liver leaving a white streak. Later, they leave the liver and enter the abdominal cavity. They may form small, fluid-filled cysts. Each cyst contains an embryonic tapeworm which when consumed by cats or dogs, will develop into a mature tapeworm.

Exclude dogs and cats from all areas where rabbit supplies or rabbits are kept. Dogs and cats should not be given raw rabbit carcasses. Management is the best control.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Name three internal parasites that might affect a rabbit’s well being.
2. Have you ever had to treat your rabbit for an internal parasite? If so, what did you do?

**Process:**

3. What are some signs that your rabbits might be infected with these internal parasites?
4. What management techniques would you use to eliminate these parasites?

**Generalize:**

5. Sanitation is important for managing internal parasites. Discuss what sanitation measures you would take that would apply to other project animals you’ve worked with.

Discuss tapeworm life cycle on Member Handout.
Apply:
6. What are some sanitation practices that you use on a daily basis?

7. What are some sanitation practices that everyone needs to follow?

GOING FURTHER:
• Visit a veterinarian and see samples of these parasites.

REFERENCES:
*Domestic Rabbits*, January-February 1989
*Domestic Rabbits: Diseases and Parasites*, Agriculture Hand Book No. 490, Agricultural Research Service, United States Department of Agriculture

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Reviewed by:
Rabbit Design Team
CONTROLLING INTERNAL PARASITES
RABBITS, LEVEL III
Member Handout 2, Life Cycles of Coccidia and Tapeworm

Life Cycle of Coccidia

- Adult passes non-infective oocysts
- Oocysts develop into infective forms
- Contaminate food and water and infect young rabbits
- Re-infect adults

Life Cycle of the Dog Tapeworm

- Adult tapeworm in dog’s intestine
- Egg
- Mature segment
- Cysts in abdominal cavity
- Contaminate food and water and infect young rabbits
CONTROLLING INTERNAL PARASITES
RABBITS, LEVEL III
Activity Sheet 4, Common Parasites

For each parasite listed, identify the symptoms, treatment and best control. Work in teams of two or three to get your answers.

<table>
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<th>Parasite</th>
<th>Symptoms</th>
<th>Treatment</th>
<th>Best Control</th>
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Common Diseases of Rabbits

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
- The common diseases of rabbits, the causes and methods of prevention

ABOUT THEMSELVES:
- The benefits of preventative health care

Materials Needed:
- Chalkboard and chalk or flip chart and marker
- Paper
- Pencils
- Rabbit Diseases and Health Problems (video) — optional

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

The members need to know when their rabbit is ill. Members need to know about rabbit diseases so they can recognize them and treat the rabbits when needed.

DISCUSS THE FOLLOWING COMMON RABBIT DISEASES:

1. **Coccidiosis**
   A. **Symptoms**—Common and serious problem especially in young rabbits. Symptoms vary with severity of exposure but include loss of appetite, diarrhea, tough coat, and loss of weight. Depending upon the type of coccidia present, the disease may involve the liver (liver form) or the intestines (intestinal form). Post-mortem examination reveals small white spots on liver when liver form is present. In severe infections, the liver may be enlarged. With the intestinal form no visible lesions may be observed, although careful examination may reveal small hemorrhages on inner surface of intestines.
   B. **Cause**—five different species of protozoan parasites or one-celled animals, which injure the lining of the bile ducts of the liver, intestines, or cecum depending on the particular species present, is the cause of the disease.
   C. **Control**—Sulfa added to the drinking water at a rate of 1½ ounces per gallon. Treat for 14 days. If necessary, the treatment may be repeated after seven days on plain water. To be fully effective, treatment should be accompanied by strict sanitary practices. Clean and disinfect hutches twice weekly with disinfectant. Remove manure daily and do not allow droppings

   ![Leader Notes](https://example.com/leader_notes.png)

   Discuss the common rabbit diseases.

   Have each member make three columns on their paper. Label the columns:
   1. Symptoms
   2. Cause
   3. Control

   Members will record information in each column for each disease as it is discussed or viewed.

   Pictures of rabbits with each disease, if available, from library or veterinarian would be helpful.
to come in contact with feed and water. Feeder should be cleaned and disinfected regularly with disinfectant. Separate young from other rabbits as soon as possible. Where disease is a persistent problem, special feeds can be used for prevention.

II. Mycoid Enteritis (“Bloat” or “Scours”)
   A. Symptoms—Symptoms include loss of appetite, depression, rough coat, may grit teeth, abdomen often bloated, and diarrhea often containing gelatinous material. Post-mortem examination may reveal excess mucus or fluid in the intestines. Fluid often present in stomach. The condition often can be demonstrated in live animals by shaking it close to the ear. If it sounds as if it is full of fluid, mucoid enteritis is present.
   B. Cause—Specific cause still unknown. Not believed to be contagious or of nutritional origin, but may be primarily due to constipation.
   C. Control—Strict sanitation of hutches, feeding and watering equipment important for control. Be sure the rabbit has access to a constant supply of water. (If automatic watering nipples are used, be sure the rabbits know how to drink.)

III. Salmonellosis (“Scours”)
   A. Symptoms—Disease may be acute or chronic. Characterized by diarrhea, loss of appetite, loss of weight, nasal discharge, rapid breathing, and fever.
   B. Cause—Post-mortem examination reveals few to numerous small white spots on liver, spleen, kidneys, or pancreas. Pneumonia may be present. Ulcers are sometimes found along the intestines. Petechial hemorrhages (pin-point, measles-like, red spots) are occasionally seen on the intestinal wall.
   C. Control—Several members of the Salmonella paratyphoid group of bacteria affect rabbits. Usually S. typhimurium, S. enteritidis, or S. aertryche. Some feeds can be used as a preventive when the problem is troublesome. For specific recommendations see your local veterinarian.

IV. Entero Toxemia
   A. Symptoms—Diarrhea usually only symptom. May go off feed and is found dead in 24 hours. Usually seen in 4 to 8-week-old rabbits.
   B. Cause—Clostridium Spiroformes, a bacteria, is the specific cause. It produces a toxin that kills the rabbit. The disease is brought on by overfeeding with a high carbohydrate feed (contains a lot of grain).
   C. Control—Change to a higher fiber (low energy) diet and reduce the amount of feed. The addition of hay or straw to the ration also is helpful. Antibiotics may be helpful.

V. Pasteurellosis (“Snuffles”)
   A. Symptoms—May be acute or chronic. Symptoms include nasal discharge, sneezing, coughing, watery eyes, head shaking and
loss of weight. Rubs nose with front feet. Post-mortem examination reveals a reddening of the windpipe, hemorrhages and solidified red patches in the lungs; membranes of the nose and sinuses may be inflamed.

B. **Cause**—Bacterial organism known as *Pasteurella multocida*. (*Brucella, streptococcus, bordatella*, and other bacteria occasionally may produce similar condition.) Infection of the reproductive tract by *pasteurella* organisms occurs and may result in sterility.

C. **Control**—Antibiotics are not effective. Strict sanitary practices should be applied to hutches. Culling of affected rabbits is the most effective method of control to date. Selection of resistant breeding stock may be helpful.

VI. **Listeriosis**

A. **Symptoms**—Young most frequently affected. Animals become emaciated. May show nervous disturbance—twist head to one side.

B. **Cause**—Bacterial organism, *Listeria*, is the cause.

C. **Control**—Affected animals should be destroyed and properly disposed of.

VII. **Mastitis**

A. **Symptoms**—“Blue Breasts” mammary glands become hot, reddened, and swollen—later may appear blue in color. May go off feed and run temperature. Condition may spread through rabbitry.

B. **Cause**—Usually *Staphylococcus* or *Pasteurella* infections, but various other bacteria may be responsible.

C. **Control**—Strict sanitary program and thorough disinfection of contaminated hutches. For specific recommendations see your local veterinarian.

VIII. **Caked Breasts**

A. **Symptoms**—“Caked Udder,” one or more of mammary glands swollen, and hot and firm.

B. **Cause**—Milk not drawn from glands as rapidly as formed. Too few young or young not nursing sufficiently.

C. **Control**—Correcting faulty management most important. Reduce ration by one-half on the day doe kindles and gradually increase to full feed in 7 days. Relieve congested glands by partial milking. Rub lanolin into affected glands to soften. Do not abruptly wean young from a heavy milking doe.

IX. **Ear Canker**

A. **Symptoms**—“Ear Mange”—Shake head and flop ears. Scaly crusts starting at base of inner ear.

B. **Cause**—Infestation of skin with mites.

C. **Control**—Remove the crust and scabs with a Q-Tip. Then apply mineral oil, containing a miticide, to the affected ears with an eye dropper. Use the 3 x 3 x 3 method. Treat every day
for 3 days, every other day for three treatments and once a week for three treatments.

X. Ringworm
A. Symptoms—Loss of hair usually in circumscribed patches, often starts on head but may involve any part of body. Not accompanied by scratching as a rule. Infection may spread to humans; gloves should be used in handling affected animals.
B. Cause—Fungus infection of the skin. The fungus can be transmitted from human to rabbit or vice versa. Cats and other animals also can carry the fungus and transmit it to rabbits.
C. Control—Clip ½-inch area around lesion and treat with good fungicide such as strong tincture of iodine or mixture of 2 ounces tincture of iodine, 2 ounces tincture benzoine, and ½-ounce salicylic acid mixed with alcohol to make a total of 6 ounces. Culling the affected rabbit is sometimes the best method of control.

X. Sore hocks
A. Symptoms—Bruised areas on under surface of hocks. Often become infected or abscessed. Front feet may become involved. Prevention by good management is best means of handling this problem—clean, dry floors or wire that provides good supporting area without compromising sanitation. Cull nervous rabbits known as “stampers” and protect herd from exciting influences.
B. Cause—Due to irritation from wire floors, stamping or irritation from urine often starts condition. Nervous and heavy animals more often affected.
C. Control—Regular inspection by breeders for tenderness of feet or early lesions. At first sign, place affected animals on ground or put lath platform in hutch. This often is sufficient to clear up early cases. Clip and clean affected areas with disinfectant. Treat locally with wide-spectrum antibiotic ointment. Penicillin injections helpful in some cases. If lesions are abscessed, surgical drainage may be necessary.

**DIALOGUE FOR CRITICAL THINKING:**
**Share:**
1. Name two common diseases of rabbits.

2. Name the causes for these common diseases of rabbits.

**Process:**
3. Why is it significant to know common diseases of rabbits?

4. Why are some of these diseases more serious than others?
Leader Notes

Generalize:
5. Which of these diseases also are common to other project animals you’ve worked with?

6. What are some standard management techniques that can be used to prevent common diseases?

Apply:
7. What are some preventive health care measures that you do routinely?

8. What additional preventive health care measures should you consider in the future?

GOING FURTHER:
• Invite veterinarian to meeting to discuss disease problems in your area.

REFERENCES:
Cooperative Extension Service, Montana State University
Official Guide to Raising Better Rabbits, American Rabbit Breeders Association

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Reviewed by:
Rabbit Design Team
The Rabbit’s Digestive System

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
- The parts of the digestive system
- The functions of the digestive system

ABOUT THEMSELVES:
- Better understanding of the digestive system

Materials Needed:
- Preserved digestive system of a rabbit (optional)
- Member Handout 3, Rabbit’s Digestive System

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY
It is important to know the function of each of the parts of the digestive system if one is to understand rabbit nutrition.

The rabbit can digest roughages because of its digestive system. The digestive system consists of the mouth, esophagus, stomach, small intestines, cecum, large intestine, rectum and anus. The esophagus functions as a tube for the passage of food from the mouth to the stomach. The simple stomach is where digestion of the food begins. In the small intestines, digestion continues. It is in the small intestines where many of the nutrients from food are absorbed. The cecum is a holding area where bacteria digest portions of the feed not digested in the stomach or small intestines. The cecum provides the ability for rabbits to digest roughage. In the large intestines, water and mineral absorption occurs. It is in the large intestines where the fecal pellets are formed. The fecal pellets are stored in the rectum.

Fecal pellets are not always formed. Usually during the night hours, soft stools are passed. These soft stools are caught and eaten by the rabbit. Stool eating, coprophagy, is an essential part of rabbit nutrition. It is thought that essential B vitamins not found in commercial foods are absorbed from the soft stool. Prevention of stool eating can result in malnutrition of rabbits. Rabbits kept in all wire cages still practice coprophagy. They get the soft stools directly from the anus.

Leader Notes
Pass out diagrams of the Rabbit’s Digestive System.
Now have the members identify the parts of the preserved digestive system.
DIALOGUE FOR CRITICAL THINKING:
Share:
1. What are three of the major organs of a rabbit’s digestive system?
2. What are the functions of these major organs?

Process:
3. Why is it important to understand a rabbit’s digestive system?
4. How is the rabbit’s digestive system similar/different from other simple-stomached animals?

Generalize:
5. How important is the cecum in the digestive system of other animals?
6. How is a digestive system with a well-developed cecum similar to a ruminant’s digestive system?

Apply:
7. What have you learned from this lesson that you will use in the future?

GOING FURTHER:
• Preserve a rabbit’s digestive system.
• Invite a medical researcher to discuss how rabbits are used.

REFERENCES:
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Reviewed by:
Rabbit Design Team
THE RABBIT’S DIGESTIVE SYSTEM
RABBITS, LEVEL III
Member Handout 3, Rabbit’s Digestive System

stomach
esophagus

small intestine
connective tissue

cecum

large intestine

rectum
Think back:
Record and share with a friend the most unique aspect of a rabbit’s digestive tract.

______________________________________________________________

______________________________________________________________

What do you remember about how to prevent parasites and diseases?

______________________________________________________________

______________________________________________________________

How might this information help you in the future?

______________________________________________________________

______________________________________________________________
Rabbits will breed more or less at any time of year. Rabbits do not have an estrous cycle in the strict sense of the word.

The female rabbit ovulates only after coitus (copulation, mating). The usual interval between stimulation (mating) and ovulation is 10 hours. Within one hour of mating, sufficient follicle-stimulating hormone is produced by the pituitary to cause the ripening of the follicles.

Females can remain in heat for a month or more in the absence of mating.

Age of puberty in rabbits varies among the breeds, with smaller breeds maturing earlier. Does born in the fall reach fertility (puberty) in about 5½ months, but those born in the spring require 8½ months. Does tend to copulate one to two months before ovulation.

Some does are believed to pass into an anestrous (non-fertile) condition during late summer. However, many people produce young rabbits throughout the entire year. Fall litters often are smaller than those born at other times of the year, which would suggest that fertility in rabbits is lower in late summer.

The doe ovulates immediately following a pregnancy. This is why you can breed a healthy doe that loses her litter immediately.

The vulva of the doe in heat usually is purple to reddish pink and somewhat swollen. This is a good indication that the doe will conceive if mated at this time. Usually the vulva is a pale pink.

Have the members examine the does present and decide if they are likely to conceive if mated today.

Discuss the differences in estrous cycles between a rabbit and another familiar animal.
DIALOGUE FOR CRITICAL THINKING:

Share:
1. What time of the year is best to breed rabbits?

2. Why is it important to understand a rabbit’s estrous cycle in your planning?

Process:
3. What is the age of puberty in rabbits and how does it vary?

4. What might be some factors affecting rabbit fertility?

Generalize:
5. What are the economic and management implications of knowing about a rabbit’s estrous cycle?

6. What other cycles impact rabbit production?

Apply:
7. What is the significance of each cycle that affects you as a rabbit manager?

8. How will this discussion of cycles help you in the future?

GOING FURTHER:
• Visit a rabbitry.

REFERENCES:
Patterns of Mammalian Reproduction, S. A. Asdell, Cornell University Press

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Reviewed by:
Rabbit Design Team
Determining Pregnancy in Rabbits

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• To palpate a doe

ABOUT THEMSELVES:
• Understanding the importance of timing/time

Materials Needed:
• Does that have been bred about 14 days
• Carpet for the table
• Member Handout 4, Female Rabbit’s Reproductive Tract
• Chalkboard and chalk or flip chart and marker

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

Learning to palpate a doe has many advantages. Reasons to palpate include the following:
1. Proper feeding practices for bred and non-pregnant does, thus preventing non-pregnant does from becoming obese.
2. Non-pregnant does can be rebred earlier.
3. Early elimination of does who have breeding problems.

PALPATION (Determining Pregnancy)
Palpation is a skill that allows the breeder to keep the herd in production. Does that aren’t bred can be rebred at a much earlier time than when waiting for the gestation period to be completed. Conception does not take place with all matings in rabbits. This is common in all species of animals. Rabbits should have about 70 percent conception on the first mating. If the conception rate falls below 70 percent, examine the breeding program for management problems or health reasons for the decrease in conception.

Palpation can be frustrating to the beginner that does not understand the anatomy of the female reproductive system. The reproductive tract in rabbits consists of the vagina, body of the uterus, cervix (2), horns (2) of the uterus, oviducts and ovaries (2). The ovaries are located lateral to the midline and attached to the dorsal portion (back of the abdominal cavity in masses) of ovarian fat. This attachment is just behind the kidneys on each side of the body. The ovaries are about the size of a small bean. The function of the ovary is to produce the eggs (ova) that are capable of being fertilized by the male sperm. The ovaries are connected to the horns of the uterus via small tubes, the oviducts. The function of the oviducts is to transport the eggs to the uterine horns.

Leaders Notes
Ask the members how they determine if their does are pregnant. Allow everyone a chance to participate in the discussion.

Outline on chalkboard or flip chart or show diagram of rabbit female reproductive tract.
The uterus is Y-shaped and is attached on the anterior end to the oviducts. The length of the uterine horns are determined by heredity and in essence will control the size of the litter. The uterine horns and body of the uterus are where the sperm and egg unite and where the feti will develop to maturity.

The cervix divides the uterus from the vagina and provides a barrier through its secretions that prevent organisms from entering the uterus and disrupting the pregnancy. The vagina extends from the cervix to the vulva and is the receptacle used for receiving the sperm.

**Palpation Technique**

1. **Position:** The doe and breeder should be relaxed and comfortable. The posterior abdominal area of the doe should rest in the palm of the breeder’s hand.

2. **Palpation Site:** The area to be explored is behind the last rib and in front of the pelvis. Early in the gestation period (9 to 13 days) the feti will lie mostly posterior and high in the abdominal cavity. Later, the feti will be lower and more anterior in the abdominal cavity.

3. **Restraint:** When the doe and breeder are in position, gently lift the hand to come into contact with posterior abdominal muscles just in front of the hind legs and pelvis. The thumb should be on one side of the abdominal cavity and the four fingers on the opposite side. The doe should be in a “stretched out” position with the breeder raising her rear quarters until just the tips of her rear feet are touching the table. Wait for the doe to relax in this position. The breeder uses his other hand to restrain the doe by holding her head gently.

4. **Hand Movement:** When the abdominal muscles are relaxed, feel for internal structure between the thumb and fingers (held tight together) starting at the most posterior area of the abdominal cavity. Never use more pressure than it would take to rupture a grape. Move the hand to explore the entire abdominal cavity. One feels for a very round, firm, marble-shaped object in the early stages of pregnancy. After 15 days the fetus will start to elongate. Once a fetus is located, one should discontinue the evaluation.

For beginners it is easiest to palpate the does at about 14 days into the gestation period. The marble-sized feti are easiest to feel and are the most difficult to damage at this time. Beginners may find it advisable to withhold feed for 24 hours before palpation. Withholding feed will reduce digestive tract fill and make it easier to palpate.
DIALOGUE FOR CRITICAL THINKING:

**Share:**
1. What are two reasons to palpate a rabbit?
2. What are the steps in the palpation technique?

**Process:**
3. When is the most important time to palpate for pregnancy in rabbits? Why?

**Generalize:**
4. Why is timing important in determining or not determining pregnancy?
5. When is timing important in your daily routine?

**Apply:**
6. How important will time management be in the future?

**REFERENCES:**
Official Guide Book of The American Rabbit Breeders Association

**Author:**
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

**Reviewed by:**
Rabbit Design Team
DETERMINING PREGNANCY IN RABBITS
RABBITS, LEVEL III
Member Handout 4, Female Rabbit’s Reproductive Tract

Think back:
What do you remember that is unique about rabbit reproduction? Why?

Vagina
Vulva
Ovaries
Oviducts
Uterine Horns
Cervix (2)
Raising the Orphaned Rabbit
*Rabbits, Level III*

What Members Will Learn . . .

ABOUT THE PROJECT:
- How to foster kits to another doe
- How to feed and care for orphaned animals

ABOUT THEMSELVES:
- How to make important decisions
- Understanding the process of management

Materials Needed:
- Kit or small rabbit
- 1 pint 2-percent milk
- 2 egg yolks
- 2 Tablespoons powdered milk
- 2 Tablespoons corn syrup
- 1 teaspoon bone meal
- A large bowl
- Spoon
- Chalkboard and chalk or flip chart and marker

**ACTIVITY TIME NEEDED:** 30 MINUTES

**ACTIVITY**

On occasion, a doe will die during the kindling process due to unforeseen and non-preventable complications, or a doe will have a litter so large in number that all of the young cannot be properly cared for by their mother. If a foster doe cannot be located, the breeder needs to take care of the orphaned rabbits.

Fostering can be a very successful and rewarding experience. However, there are some general guidelines that must be followed if this practice is successful.

1. There should be a record of each kit fostered. This can be accomplished by placing small tattoo marks in one or both ears. For distinctly marked animals, a photograph of the side profile of each kit also is a method of identifying the young.

2. The young should be fostered to litters that are within 72 to 96 hours of the same age.

3. The kits should be about the same physical size.

**Leader Notes**

Ask members to help you list things to consider when fostering kits to another doe before you list these guidelines. Compare youth list with this list.
4. Don’t “overload” the foster doe, so the original litter isn’t deprived of sufficient milk. Small breeds should not be expected to care for more than six kits. The commercial type breeds should not be expected to care for more than eight kits.

5. Before transferring the kits, the breeder should thoroughly cleanse his or her hands in plain water. Avoid the use of soaps, hand creams, etc.

6. Each of the original kits should be examined, then examine the kits to be fostered before being placed in the nest.

7. Check the nest box every 12 to 24 hours after the fostering process for the next five to seven days to see if the young are being properly cared for and fed.

If there is not a foster mother available, then the kits must be hand fed. Feeding orphaned kits is not a difficult endeavor and results can be very gratifying. However, it requires a lot of time and patience.

To be successful it is necessary to implement strict management practices:

1. The young kits must be provided a warm, dry nest. The nest temperature must be kept at 95 to 98°F.

2. The kits must be confined to a small area. This can be accomplished by putting the kits in a small bowl or pan lined with soft nesting material, fur or a soft towel.

3. The artificial nest must be provided heat in order that the temperature can be maintained. This temperature must be maintained for 10 to 15 days.

4. Hold the kit in an upright position and gently stroke the area between the hind legs several times with a cotton ball or other soft material until elimination has occurred.

5. When natural eliminations are noticed in the nest, the manual stimulation process can be discontinued.

6. The kits should be nursed two times per day at 12-hour intervals.

7. The kits can be fed with a small nipped bottle or an eye dropper.

8. Care must be used during the feeding process to ensure the kits do not inhale any fluid into the respiratory tract and they are not overfed. One to three eye droppers of formula per feeding depending on age and size are probably sufficient.

9. At about 14 days, the kits can be offered bread that has been soaked in milk, two or three times per day.
10. The kits will readily adapt to using the bread as a “nurser,” and bottle feeding can gradually be discontinued.

11. The young will start eating rolled oats at 14 to 21 days.

12. After 21 days, start feeding rolled oats/pelleted feed mixture, until the diet can consist of totally commercial pellets at approximately 30 days of age.

**THE FORMULA FOR THE ORPHANED RABBIT**

**Ingredients:**
- 1 pint 2-percent milk
- 2 egg yolks
- 2 Tablespoons powdered milk
- 2 Tablespoons corn syrup
- 1 teaspoon bone meal

Put all the ingredients into a bowl and mix thoroughly with a spoon. The formula must be kept refrigerated and only a small portion warmed to 90°F as needed.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. If you ever attempted to raise an orphaned rabbit, what was it that you did?

2. When would it be necessary to foster kits?

**Process:**
3. Why should the fostered kit be about the same age as the new litter-mates?

4. When raising an orphaned rabbit, what are the most important management practices to consider? Why?

**Generalize:**
5. How do you decide when to raise other orphaned animals?

6. What management practices might you need to be concerned with when raising other orphaned animals?

**Apply:**
7. How will you use these management techniques in the future?
GOING FURTHER:
• Invite a rabbit breeder who has reared orphaned kits to come to your meeting.

REFERENCES:
*Domestic Rabbits*, May-June, 1989

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Culling Rabbits Through Records
*Rabbits, Level III*

What Members Will Learn . . .

ABOUT THE PROJECT:
• To use records to cull their herd

ABOUT THEMSELVES:
• Importance of good record keeping

Materials Needed:
• Member Handout 5, Doe and Buck Breeding Record
• Activity Sheet 5, Using Records to Cull

**ACTIVITY TIME NEEDED:** 30 MINUTES

**ACTIVITY**

The rabbit breeder needs to constantly cull those rabbits that are not producing up to their potential. Records will allow one to use objective facts when culling the herd.

A Red New Zealand doe #345 was born 6-7-94. Her sire is #7, her dam is #45, and she was born in litter 3.

#345 was bred 1-8-95 to buck 34. She kindled 2-7-95. Five live young, one dead young, five were weaned on 3-21-95, total weight of the litter was 16 pounds.

#345 was rebred 3-7-95 to buck 45. She kindled 4-7-95. Nine live young were born, no dead young, eight were weaned on 6-7-95, total weight of the litter was 35 pounds.

#345 was bred 5-24-95 to buck 34. She kindled 6-24-95. Four young were born, there were two dead young, four were weaned on 8-24-95, total weight of the litter was 20 pounds.

#345 was bred 9-1-95 to buck 45. She kindled 10-2-95. Eleven live young were born, two dead young, eight were retained and three fostered off, eight were weaned 12-8-95, total weight of the litter was 36 pounds.

**Should we keep the doe in our herd?**

Answer: She has kindled four times and weaned a total of 25 rabbits for an average of 6.25 per litter. However, we must note that when bred to buck 34 she had smaller litters. Therefore, she should be kept in the herd. We should check out buck 34.

**Leader Notes**

Pass out Activity Sheet 5, Using Records to Cull. Explain that you can cull both bucks and does using records. Use the records for the doe.

Ask the members to answer the question. Discuss the reasons for keeping the doe.
Leaders Notes

Use the Buck breeding record on Activity Sheet.

Does should average seven to eight young to be weaned from each litter in order to be kept in the commercial rabbitry. Does of fancy breeds will have smaller litters.

Using the buck records, buck #34 is a Red New Zealand. 34 was born 2-3-94. 34’s sire is 4 and 34’s dam is 35.

345 was bred 1-8-95, 5 live and 1 dead were kindled, 4 were weaned, total weight 16 pounds.

26 was bred 1-20-95, 4 live young born, 4 were weaned, total weight 23 pounds.

345 was bred 5-24-95, 4 live and 2 dead were kindled, 4 young weaned, total weight 20 pounds.

Should we keep 34 in the herd?
Answer: No, if we are raising rabbits commercially. If fryers are why we are raising rabbits we will raise more rabbits using a different buck. If 34 was a fancy rabbit, the size of his litters is acceptable.

Dialogue for Critical Thinking:
Share:
1. How have you used records in the past?
2. How many kits should an average doe wean from each litter?

Process:
3. Why is it important to use records when culling your rabbit herd?
4. Why are records kept on male and female rabbits?

Generalize:
5. What other records besides breeding are important to keep track of when raising project animals? Why?
6. What is the advantage of keeping records?

Apply:
7. Record keeping is an important part of everyday life. What are some types of records you keep?
8. What might be the significance of computerizing your records in the future?
GOING FURTHER:
- Have the members use records to cull their herds.
- Computerize your records to help you cull your herd.
- Visit a commercial rabbitry and see how they use records to cull.

REFERENCES:
Cooperative Extension Service, University of Arizona
Cooperative Extension Service of the Northeast States, University of New Jersey

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
CULLING RABBITS THROUGH RECORDS
RABBITS, LEVEL III
Activity Sheet 5, Using Records to Cull

### Doe Breeding Record

<table>
<thead>
<tr>
<th>Doe No.</th>
<th>345</th>
<th>Born</th>
<th>6-7-94</th>
<th>Breed</th>
<th>Red New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sire</td>
<td>7</td>
<td>Dam</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Bred</th>
<th>Date Due</th>
<th>Buck No.</th>
<th>Date Kindled</th>
<th>No. Young Born</th>
<th>Number Young Retained</th>
<th>Litter No.</th>
<th>Date Weaned</th>
<th>No. Weaned</th>
<th>Weaning Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8</td>
<td>2-7</td>
<td>34</td>
<td>2-7</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>3-21</td>
<td>5</td>
<td>16 lbs.</td>
</tr>
<tr>
<td>3-7</td>
<td>4-6</td>
<td>45</td>
<td>4-7</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>6-7</td>
<td>8</td>
<td>35 lbs.</td>
</tr>
<tr>
<td>5-24</td>
<td>6-23</td>
<td>34</td>
<td>6-24</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>8-24</td>
<td>4</td>
<td>20 lbs.</td>
</tr>
<tr>
<td>9-1</td>
<td>9-30</td>
<td>45</td>
<td>10-2</td>
<td>11</td>
<td>2</td>
<td>8</td>
<td>12-8</td>
<td>8</td>
<td>36 lbs.</td>
</tr>
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</table>

Should we keep doe 345 in our herd? Why or why not?

### Buck Breeding Record

<table>
<thead>
<tr>
<th>Buck No.</th>
<th>34</th>
<th>Born</th>
<th>2-3-94</th>
<th>Breed</th>
<th>Red New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sire</td>
<td>4</td>
<td>Dam</td>
<td>35</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Doe</th>
<th>Date Bred</th>
<th>Result of Breeding</th>
<th>Weaned</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Kindled</td>
<td>Passed</td>
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<td></td>
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<td>Alive</td>
<td>Dead</td>
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<td></td>
<td>Date</td>
<td>Number</td>
<td>Weight</td>
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<td>345</td>
<td>1-8-95</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>1-20-95</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>345</td>
<td>5-24-95</td>
<td>4</td>
<td>2</td>
<td>4</td>
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</table>

Should we keep buck 34 in our herd? Why or why not?
# CULLING RABBITS THROUGH RECORDS

**RABBITS, LEVEL III**

**Member Handout 5, Doe and Buck Breeding Record**

## Doe Breeding Record

<table>
<thead>
<tr>
<th>Doe No.</th>
<th>Born</th>
<th>Breed</th>
<th>Sire</th>
<th>Dam</th>
<th>Litter No.</th>
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<th>Number Young Retained</th>
<th>Litter No.</th>
<th>Date Weaned</th>
<th>No. Weaned</th>
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## Buck Breeding Record

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<th>Buck No.</th>
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<th>Dam</th>
<th>Litter No.</th>
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<th>Date Bred</th>
<th>Result of Breeding</th>
<th>Weaned</th>
<th>Notes</th>
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<td>Kindled</td>
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61-Rabbits, Level III
When to Remate the Doe After Kindling
*Rabbits, Level III*

**What Members Will Learn . . .**

**ABOUT THE PROJECT:**
- The factors that determine time between mating rabbits
- The best times to remate doe after kindling

**ABOUT THEMSELVES:**
- Decision making

**Materials Needed:**
- Chalkboard and chalk or flip chart and marker

**ACTIVITY TIME NEEDED:** 20 MINUTES

**ACTIVITY**

The members need to know when to breed their does after they have kindled. The length of time allowed to elapse from the time the doe kindles until she is remated varies considerably depending upon the circumstances. Several factors determine the length of time between kindling and remating:

1. The total number of young being raised by the doe.
2. The intended production purposes of the doe and litter.
3. The genetic ability of the doe to maintain physical condition during lactation.

The determining factor must be made by the member utilizing the individual rabbit’s physical condition. Can the doe withstand remating, gestation and lactation at this time? This will vary from doe to doe and upon the desired goals of production.

Once a doe is in production, ideally it is best to keep the rabbit in production in order to minimize reproductive problems.

Excessive fat accumulation within the doe’s abdominal cavity is the number one cause of breeding difficulties.

Most members do not realize the small amount of feed needed to maintain a “non-working” doe and, therefore, overfeed her.

Excessive fat accumulation in the abdominal cavity acts as a physical barrier to prevent the egg (ovum) from entering the reproductive tract to be fertilized. Thus, the conception rate is drastically reduced. Obese does exhibit decreased receptiveness to the buck.

The doe usually is more receptive to the male about 72 hours after kindling.

Leader Notes

List these on the chalkboard or flip chart.
Some rabbit breeders recommend that the producing doe be remated two weeks prior to weaning the litter.

The doe can be palpated for pregnancy 12 to 14 days after mating, and if the doe is pregnant, the litter can be weaned and then she will have two weeks to recuperate before kindling the next litter.

If the palpated doe is not pregnant, the doe can be remated immediately and the litter left with the doe for two more weeks. If the doe fails to conceive the second time, she should be labeled a problem breeder.

Ideally, the doe should be bred and palpated pregnant prior to weaning. The member must consider each doe as an individual and remate her for the specific conditions that exist. Let us consider some specific situations:

**DOES WITH COMPLICATIONS:** A number of situations can occur such as difficult births, reproductive infection, respiratory infection, ketosis, etc. It is important that any problem be identified and precautions be taken to prevent them from reoccurring.

**WHEN ONLY ONE TO THREE LITTERS PER YEAR ARE DESIRED:** The member must be sure not to let the doe become fat. This mandates that the doe be fed a restricted diet to maintain good breeding condition.

**DOES THAT LOSE THE ENTIRE LITTER:** If no complications are present, does that lose their litters during kindling or shortly after kindling should be remated three to seven days after kindling. If the doe loses her litter during the lactation, she should be remated immediately.

**DOES WITH SMALL LITTERS:** Occasionally, a doe has twins or triplets and there isn’t any chance to foster the young to another doe. The doe should be remated 14 days after kindling. The young are weaned at 5 weeks of age and must be given some special creep feed after weaning to keep growing.

**DOES WITH EXTREMELY LARGE LITTERS:** Does with extremely large litters may have a deteriorated flesh condition and should not be remated until a sufficient flesh condition exists. The litter may need to be weaned in order for the doe to recuperate before being remated.

**GENERAL GUIDELINES:**

When to Breed:

1. Does that lose their litter at or during kindling (no complications) 3 to 7 days
2. Does with very small litters 14 days
3. Commercial production does 0-21 days
4. Commercial/fancy rabbits 2 weeks prior to weaning
5. Does with complications when appropriate for specific problem

List this summary on chalkboard or flip chart.

Have the members tell what breeding schedule they are using and discuss why.
DIALOGUE FOR CRITICAL THINKING:
Share:
1. What is the number one cause for breeding difficulties in does?
2. What are two factors that you should consider before remating does?

Process:
3. What affect might remating have on a doe?
4. What has been the most significant factor in getting does rebred after kindling? Why?

Generalize:
5. What impact on your rabbit program would result if remating complications occurred?
6. What kind of adjustment might you need to make in your breeding program?

Apply:
7. What might you do differently in the future as a result of this discussion? Why?

GOING FURTHER:
- Develop a feeding schedule for non-pregnant does.

REFERENCES:
Domestic Rabbits, March-April, 1989

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Think back:
What is the most significant item of interest to you when raising or culling rabbits? Why?

__________________________

__________________________

__________________________

Are you interested in cost-effective rabbit production? Why or why not?

__________________________

__________________________

__________________________
Formulating Rabbit Show Classes
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• The various classes they may enter rabbits in at an American Rabbit Breeders Association sanctioned show

ABOUT THEMSELVES:
• The importance of planning

Materials Needed:
• Chalkboard and chalk
• Rabbit classes from your local fair book or show
• State Fairbook
• Activity Sheet 6, When to Breed for Show Classes
• Leader’s Key, Activity Sheet 6, When to Breed for Show Classes

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

There are several classes one can enter at a rabbit show. However, some shows will not have all these classes available.

In order to find out what classes are available we need to know if you are showing six-class or four-class rabbits.

Six-class rabbits are larger with the ideal weight of the senior animals being 9 pounds or more. They have three age groups for each sex.

Classes for six class rabbits are:
Senior Buck (over 8 months)
Senior Doe (over 8 months)
Intermediate Buck (6 to 8 months)
Intermediate Doe (6 to 8 months)
Junior Buck (3 to 6 months)
Junior Doe (3 to 6 months)

A few of the six-class rabbits also have:
Pre-junior Buck (under 3 months)
Pre-junior Doe (under 3 months)

Not all six-class rabbits have pre-junior classes. For instance, the French Lops do not have pre-junior classes.

Leader Notes
List the classes as you discuss each of them. Compare your local classes with those at the state fair and other shows.
In what classes can the four-class rabbits be exhibited? Four-class rabbits are smaller with the ideal weight of the senior animals being less than 9 pounds. They have two age groups for each sex.

**Classes for four-class rabbits:**
- Senior Buck (6 months and over)
- Senior Doe (6 months and over)
- Junior Buck (under 6 months)
- Junior Doe (under 6 months)

**Fur and wool classes:**
- Breed fur classes
- Normal White Fur class
- Normal Colored Fur class
- White Satin Fur class
- Colored Satin Fur class
- Colored Rex Fur class
- White Rex Fur class
- English Angora White Wool class
- English Angora Colored Wool class
- French Angora White Wool class
- French Angora Colored Wool class
- Giant Angora White Wool class
- Giant Angora Colored Wool class

The normal colored and normal white fur classes are rarely used at local American Rabbit Breeders Association (ARBA) sanctioned shows but are the fur classes used at 4-H shows. Generally at an ARBA sanctioned show, the rabbits are exhibited in breed fur classes instead of the normal fur classes.

**The meat classes:**
- Meat Pen
- Single Fryer

The single fryer class is popular in eastern Missouri, but isn’t very often used in Kansas.

These are the classes normally found in Kansas.

**DIALOGUE FOR CRITICAL THINKING:**

Share:
1. At what age is a rabbit considered to be in the junior class?
2. At what age is a rabbit considered to be in the senior class?
Process:
3. Why is it important to know when to breed your rabbits?

4. Why is it important to plan for the birth of kits?

5. Which is more important—the doe’s age or weight when getting ready to breed?

Generalize:
6. What other project animals are categorized by age or weight?

7. Why is planning for breeding and birthing necessary to formulate show classes?

Apply:
8. What planning techniques will you need to prepare for future activities?

9. Why do you need to plan for major activities?

GOING FURTHER:
• Identify breeds of rabbits that are six-class according to weight.

REFERENCES:
Standard of Perfection, American Rabbit Breeders Association

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
FORMULATING RABBIT SHOW CLASSES
RABBITS, LEVEL III
Activity Sheet 6, When to Breed for Show Classes

You want to show some Californians in the 6- to 8-month classes at the county fair, when should you breed so your rabbits will be the right age?

**Answer:** The county fair is held July 20-25. You will want your rabbits to be about 6½ months old. Since it takes about _______ days for gestation, you will need to breed your rabbits _______ months before the fair.

When should you breed so you can show in the junior classes?

**Answer:** Juniors must be under 6 months of age. You probably would like to have them at least _______ months old. Therefore, you should breed your rabbits any time between ______________ and ______________. If you breed January 5 the rabbits will be _______ months old.

The state fair 4-H rabbit show is September 15. When should you breed so you will have a meat pen for the state fair?

**Answer:** Meat pen rabbits must not be over _______ days of age. Count back _______ days and add _______ days gestation time. You should breed your rabbits no earlier than ______________.

The annual county 4-H spring show is to be held May 20. What classes can you enter your rabbits from the following breedings:

<table>
<thead>
<tr>
<th>Doe</th>
<th>Date Bred</th>
<th>Kit Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Dutch #45</td>
<td>November 25</td>
<td></td>
</tr>
<tr>
<td>Blue Satin #56</td>
<td>October 12</td>
<td></td>
</tr>
<tr>
<td>White New Zealand #32</td>
<td>January 15</td>
<td></td>
</tr>
<tr>
<td>Californian #B54</td>
<td>February 15</td>
<td></td>
</tr>
</tbody>
</table>
You want to show some Californians in the 6- to 8-month classes at the county fair, when should you breed so your rabbits will be the right age?

**Answer:** The county fair is held July 20-25. You will want your rabbits to be about 6½ months old. Since it takes about 30 days for gestation, you will need to breed your rabbits 7½ months before the fair.

When should you breed so you can show in the junior classes?

**Answer:** Juniors must be under 6 months of age. You probably would like to have them at least 4½ months old. Therefore, you should breed your rabbits any time between **January 5** and **February 5**. If you breed January 5 the rabbits will be 5½ months old.

The state fair 4-H rabbit show is September 15. When should you breed so you will have a meat pen for the state fair?

**Answer:** Meat pen rabbits must not be over 70 days of age. Count back 70 days and add 30 days gestation time. You should breed your rabbits no earlier than **June 7**.

The annual county 4-H spring show is to be held May 20. What classes can you enter your rabbits from the following breedings:

<table>
<thead>
<tr>
<th>Doe</th>
<th>Date Bred</th>
<th>Kit Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Dutch #45</td>
<td>November 25</td>
<td>Junior</td>
</tr>
<tr>
<td>Blue Satin #56</td>
<td>October 12</td>
<td>6 to 8 months</td>
</tr>
<tr>
<td>White New Zealand #32</td>
<td>January 15</td>
<td>Junior</td>
</tr>
<tr>
<td>Californian #B54</td>
<td>February 15</td>
<td>Pre-junior or meat pen</td>
</tr>
</tbody>
</table>

**Answer:** Black Dutch doe should have kindled December 25. The offspring would be almost 5 months old, and could be shown as juniors.

The Blue Satin Doe should have kindled November 11. The offspring would be over 6 months of age and should be shown in the 6- to 8-month classes.

What if one of the Blue Satin bucks weighs 9 pounds? **Answer:** You should show him as a senior buck.

New Zealand White doe should have kindled by February 14. Therefore, the offspring are over 3 months of age. Enter them in the junior classes.

The Californian doe should have kindled March 17. The offspring would be 64 days old; they can be shown in the meat pen class and as pre-juniors.
Talking Like a Rabbit Judge

**Rabbits, Level III**

What Members Will Learn . . .

**ABOUT THE PROJECT:**
- The vocabulary/terms used by rabbit judges

**ABOUT THEMSELVES:**
- Understanding and using information resources

**Materials Needed:**
- Cards with different rabbit terms listed on them
- Cards with the definitions of the rabbit terms
- Member Handout 6, Judging Glossary
- Member Handout 7, Gaming Cards

**ACTIVITY TIME NEEDED:** 40 MINUTES

**ACTIVITY**

The members need to be able to understand the terms used by the rabbit judge if the members are to know the good and poor characteristics of their rabbits.

**Leader Notes**

Divide the group into teams. Give each team a set of cards with terms and definitions. See if they can match the definitions with the correct terms. Give the members the correct answers. Rabbit Judging Glossary.

Now play a game. Read the definition of a term and see which team can give the term. Keeping score gives the members a chance to see how well they know rabbit terms.

Now select a term and ask the members to use it in a sentence. Continue until every member has a chance to participate.
**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What are several rabbit terms you have learned?
2. What is a glossary?

**Process:**
3. Why is it important to know the various terms that a rabbit judge would use?
4. When and where will you use these terms when working with rabbits?

**Generalize:**
5. What are several terms used in rabbit judging that are similar to terms for judging other animals?
6. Why is it important to understand the terminology of various businesses, jobs, or careers?

**Apply:**
7. Why is it important to know where to find referral and information resources when working in jobs?
8. What are other activities in your life where you will need various resources?

**REFERENCES:**

*A Progressive Program For Raising Better Rabbits And Cavies*, American Rabbit Breeders Association  
*Standard Of Perfection*, American Rabbit Breeders Association

**Author:**
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

**Reviewed by:**
Rabbit Design Team
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary

A glossary of words and terms peculiar to rabbits and rabbit keeping. These are not necessarily the dictionary definitions.

Albino—A pink-eyed, white-furred rabbit. Since they are recessive to color, albinos will always breed true when bred together.

Arch (arc)—A gentle curvature of the spine; extended from the neck (or shoulders in some breeds) to the rear of the rabbit, best observed by viewing the animal in profile.

Back—The top portion of the rabbit’s shoulders, loin and rump.

Balance—Type—shape or conformation, an orderly and pleasing arrangement of physical characteristics so as to present a harmonious appearance. Markings—equal distribution of corresponding markings, such as color divisions of the Harlequin, equal amounts of color on the cheeks of the Dutch. Equal distribution of color in the pattern and side markings in Checkered Giants, English Spots and Rhinelanders.

Bare Spots—A portion of the rabbit’s body that lacks fur due to molt or any other cause.

Base Color—The fur color next to the skin.

Bell Ears—Ears that have large, heavy tips with a distinct fall or lop to them.

Belly—The lower part of the body—the abdomen. From the bottom of the last rib to the pelvis. Contains the intestines.

Belly Color—The color underneath a rabbit, extending from the forelegs to the crotch area.

Blaze—The white markings found on the head of the Dutch rabbit. It covers the nose and whisker bed and runs along the jawline. The shape is that of a wedge which tapers from the nose area to the base of the ears.

Bloom—The sheen or luster of a coat in good condition.

Boots—The colored markings on the rear feet of pointed animals, as in Himalayan-marked rabbits.

Bowed Legs—May be applied to the forelegs and hindlegs. Bent like a bow, legs curved outwardly from the middle, involving radius and ulna in front legs; tibia and fibula in hindleg.

Breed—A class of domestic rabbits which reproduces stock with distinctive characteristics, such as fur, markings, shape and size. A breed may be divided into varieties, such as the color differences within a breed. A further subdivision of the breeds lists several varieties into different groups as in Netherland Dwarfs and Harlequins.

Broken Coat—Fur with guard hairs missing or broken in spots, which exposes the undercoat; areas where coat is affected by molt which exposes the undercoat.

Broken Ear—A distinct break in the cartilage of the ear, which prevents erect ear carriage.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary, continued

Buck—An unaltered male rabbit.

Buff—A rich, golden orange with a creamy cast.

Bull Dog—As applied to the head, a short, broad, bold head with a definite masculine appearance.

Butterfly—A nose marking found on many breeds of rabbits. The wing portions cover the whisker bed from lip to lip, with the body extending up the center of the face.

Butting—A form of malocclusion (disqualification), the incisors meeting together evenly without the upper incisors “overlapping” the lower incisors in proper fusion (also called “pegged” teeth).

Carriage—The manner in which a rabbit carries itself; the style or characteristic pose of a rabbit.

Chest—The front portion of the body between the forelegs and the neck—the breast.

Cheeks—The sides of the face below the eyes.

Chopped—As it applies to type, a condition in which there is an abrupt and sharp, vertical fall of the rump to the tail. Not well filled out and rounded.

Cobby—Short and stocky, close-coupled; very compact.

Compatible—Pertaining to eye color; a normal color that complements or matches the body of the colored portions of a marked rabbit.

Condition—The overall physical condition of a rabbit in relation to health, cleanliness, fur and grooming (see full ARBA definition).

Cow Hocks—Hind legs that turn inward at the hock, causing the foot portion to turn outward from the body.

Crown—A strong basal ridge of cartilage at top of head between the base of the ears of some lop-eared breeds.

Dead Hairs—Fur which lacks life, caused by molting or hutch stain.

Density—The property or quality of a thick coat of fur. The amount of fur in a given area.

Definition—The sharpness and clarity of a color break, as the ring color in the Agouti fur.

Dew Claw—An extra toe or functionless digit on the inside of the front legs.

Dewlap—A pendulous fold of loose skin, which hangs from the throat. Common in does. Should be in proportion to total body size. Not allowed in some breeds.

Disqualification—One or more defects, deformities or blemishes which renders a rabbit unfit for competition, and ineligible for registration.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary, continued

Doe—An unaltered female rabbit.

Ear Lacing—A colored line of fur which outlines the sides and tips, or inside of the ears (depending on breed standard).

Eye Color—The color of the iris, the circle of color which surrounds the pupil of the eye.

Fine Coat—A coat of fur too fine in texture, lacking body. Guard hairs are weak and thin in structure; lacking the proper amount of guard hairs.

Finish—The desired degree of perfection in condition. Fully prime in coat, color and flesh.

Flabby—The condition of a rabbit when the skin hangs loosely on the rabbit by its own weight. Not trim and shapely.

Flat Coat—Fur lying too close to the body. Lacks spring or body as noted by touch. Usually a fine coat coupled with lack of density.

Fly Back—A coat of fur which flies back to its smooth, normal position when stroked from the hindquarters to the shoulders (see Commercial Normal Fur Standard).

Flying Coat—A loose, fluffy coat of fur, caused by long length and thinness of underfur and weak guard hairs.

Foot—The portion of the skeleton on which the rabbit walks or stands. On the foreleg—that portion below the pastern (wrist). On the rear leg—that portion below the hock.

Forehead—The front part of the head between the eyes and the base of the ears.

Furnishings—The tassels and fringes on the ears, the bangs and side trimmings on the head, and the wool on the front feet of the English Angora.

General Fault—One or more defects of a rabbit assumed to be curable and temporary in nature. An elimination prevents a rabbit from being placed at a show or being registered until it is cured or corrected.

Glossy—The reflection, a luster or brightness from naturally healthy fur in rabbits, a natural property of fur (improved by grooming).

Guard Hair—The longer, coarser, projecting hair of the rabbit’s coat that offers protection to the undercoat and furnishes wearing quality to the coat in addition to providing sheen.

Herring Bone—The spine or dorsal stripe on the English Spot. A herringbone or serrated edge to the spine markings.

Hindleg (rear)—Consists of the foot, hock, stifle (knee), and hip joint; that portion distal to the attachment of the leg to the pelvis.
Hindquarters—The rear portion or section of the body; composed of the loin, hips, hindlegs and rump. From the last rib posterior.

Hip—The joint that attaches the hindlegs to the trunk of the body.

Hock—The joint in rabbits that corresponds to the ankle in man. The joint distal to the stifle.

Hog Fat—A rabbit that is obviously over-fattened and, consequently, out of proportion for the true type of the breed.

Humpback—A hump or protrusion on the back which mars the appearance of the rabbit.

Knee—The second joint of the hindleg—connects the thigh to the leg. Also known as stifle.

Knock-Kneed—On the front legs, bones that turn inward from the middle. A misnomer of terminology that conflicts with the definition of knee, but often used.

Lap Spots—Intensification of belly color in the area of the groin (inside the hindlegs). Normally associated with shaded selfs, agoutis and wide band agoutis (fawn and red).

Loin—That portion of the back on each side of the vertebrae from the last rib posterior to the hip joint.

Loose coat—Fur not set tightly in coat and slipping.

Lopped Ears—Pendulous ears not carried upright, falling to the front or sides.

Luster—Brightness and brilliance of fur.

Malocclusion—Any departure from the occlusive (opposing) surfaces of the upper and lower jaw meeting properly; causing an improper meeting of the incisors which produces as one condition buck, or wolf, teeth which has hereditary connections.

Mandolin—Having the appearance of a mandolin laid face down. The back and saddle arch toward the loins to make noticeable broader hindquarters. Formation starts behind the shoulders.

Marked—A rabbit, usually white, which is broken up by an orderly placement of another color; also rabbits which carry the Tan pattern.

Massive—Large, bulky and heavy, ponderous.

Meaty—The quality of being able to carry a good portion of meat in proportion to the bone, size and type of the rabbit. A noticeably well-proportioned meatiness of the forequarters, back, loin, and haunches.

Molt—The act of shedding or changing fur. The baby fur is molted at approximately 2 months; the first prime coat is developed at 4 to 6 months of age.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary, continued

Muzzle—The lower part of the face and nose of the rabbit.

Neck—That part of the rabbit connecting the head to the body.

Nostrils—The two openings of the nose leading to the internal structures of the head.

Off-Colored—Several hairs or patches of fur foreign to the color standard of the rabbit; also a departure from the desired color of fur or eyes (see Foreign Colored).

Open Coat—Fur lacking density in undercoat, accompanied by fine guard hairs and lacking texture.

Patch—A small section of fur.

Paunch—The prominent portion of the abdomen.

Pearl—The intermediate color band of Chinchilla rabbits; off-white in color.

Pepper and Salt—A flat, unattractive appearance of black and white ticking, as found in Chinchillas. Caused by a lack of contrast and waviness in the ticking and weakness of color on the tips of the guard hairs.

Pigeon Breasted—A narrow chest with protruding breastbone.

Pinched Hindquarters—Hindquarters tapering toward the tail at the lower hindquarters, giving the rabbit a “pinched” appearance.

Points—The ears, tail, nose, rear feet, and the forelegs of a rabbit such as a Himalayan or Color Point.

Pot Belly—A distended condition of the stomach and intestines, usually found in young rabbits.

Poor Coat—Fur not in good condition due to molting, rust or ill health of the rabbit, or of general poor quality due to genetic factors.

Racy—Slim, trim, alert and active. Slender in body and limbs, hare-like.

Ribs—The curved portions of the sides immediately back and under the shoulders and above the belly.

Roll Back—A gradual return of the coat of fur to normal position when it is stroked from the hindquarters to the shoulders.

Roman Nose—A nose whose bridge is so comparatively high as to form a slightly convex line from the forehead to the nose tip. (Dictionary: “Aquiline—curving like an eagle’s beak.”)

Rump—The upper, rounded part of the hindquarters.

Rust—A reddish-brown coloration of the fur, usually appearing on the sides, flanks or feet of rabbits. Rust appears in Blues, Blacks, Chocolates, Lilacs and Sables. It may be caused by exposure to sunlight, dirty hutches or dead hair about to molt.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary, continued

Saddle—The whole upper back portion of a carcass, including both loins, rumps and hindlegs. Also a marking on the Dutch rabbit where the white color ceases on the upper portion of the hindquarter marking.

Shape—General conformation; the rabbit’s overall appearance as shown by body structure. Synonym for “type.”

Sheen—The principal feature of the Satin mutation. A bright, natural luster attributed to the unique structure of the hair shaft, because glass-like, transparent hair shell has the ability to reflect light. Sometimes used in error to describe fur condition in the normal fur.

Shoulder—The upper joint of the foreleg, connecting it to the body.

Slipping Coat—A coat of fur that is shedding or molting, a profusion of hairs.

Snipey—A long, elongated, narrow head.

Solid—A rabbit with the same basic coloration over the entire body, not mixed with any other color to create a pattern or markings. In a broad sense, it may include: Selfs and Shaded Selfs, Agouti and Wide Band Agouti, ticked as in steel, silver and d’Argent rabbits, but not those of the basic Tan pattern. (Pointed Whites in Angoras and some Lop breeds are classified as “Solids”—see breed standard.)

Spraddled (Spraddle-Legged)—A condition where the rabbit cannot hold (abduct) the front or back legs inside the body, and they spread out from the body.

Ticking—Longer guard hairs throughout the fur, of a color distinct from the underwool or body fur which presents a wavy appearance. Ticking is characterized by longer, black and/or tipped guard hairs.

Top Color—The surface color of the fur lying in its normal position.

Tucked Up—The trim appearance of the Belgian Hare, with the flank and belly gathered in closely to form an arch when the rabbit is in a sitting position.

Type—Denotes conformation of a rabbit, or shape or size of a particular part of a rabbit; head type. The general physical makeup of the rabbit.

Undercolor—The color at the base of the fur shaft, next to the skin. Not belly color.

Undercut—The belly marking on a Dutch rabbit; a continuation of the saddle marking.

Undercut Hindquarters—Where the skeletal and/or muscular structure does not fill the lower hindquarters.

Variety—A division within a breed. Type indicates the breed; color determines the variety. (In some breeds, Broken Color is an added variety.)

Wall Eye (Moon Eye)—An eye that is whitish on the surface (cornea) of the eye; having a milky film over the eye.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 6, Rabbit Judging Glossary, continued

**Wool**—The soft, fleecy hair on Angora rabbits. The guard hair and underfur is from 2½ to 3 inches in length and resembles fine wool in texture.

**Wolf Teeth**—Protruding or elongated incisors in either the upper or lower jaw causing malocclusion, improper alignment of the upper and lower teeth which prevents normal wear.

**Wry Tail**—An abnormal tail, bent, carried or twisted permanently to one side; a corkscrew tail with one or more turns.
TALKING LIKE A RABBIT JUDGE
RABBITS, LEVEL III
Member Handout 7, Gaming Cards

Make as many copies as needed. Then handwrite selected terms from the glossary and cut out. For definitions, make extra copies of glossary (one-sided) and clip definitions of terms selected for game. Use any combination of squares to make size of card desired.
Presenting Oral Reasons
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• The steps used when giving oral reasons

ABOUT THEMSELVES:
• Improving organizational skills
• Enhancing communication skills

MATERIALS NEEDED:
• Member Handout 8, Sample Judging Class
• A class of rabbits to be judged
• Judging cards

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

Even if you can place a class of rabbits correctly, you will not learn much unless you know why you placed the class as you did and can explain the reasons for your decisions.

Points to Consider when Judging Rabbits
I. Body Conformation
   A. Firm body—not overly fat
   B. Well balanced
   C. Rump well-rounded; smooth (shaped like half-basketball)
   D. Wide, meaty loin
   E. Full front shoulders
   F. Short neck—well-placed head

II. Other Features
   A. Erect ears—balanced to body (not too long or too short); exception is lop eared rabbits.
   B. Straight leg bone (not cow-hocked or bowlegged)
   C. Fur: condition—tight fur, no breaks, stains or mats
   D. The rabbit should be free of disqualifications and general faults.

4-H Judging Card
Conestant number refers to a number you were given when you registered.

Class number or name refers to what you are judging—in this case, Dutch.

Remember to circle your placing of the class—here you would want to circle 2-4-1-3.

Leader Notes
Remind the members that there are several things to look for when judging a class of rabbits.

Hand out Sample Judging Class sheet. The sheet has a class of Dutch rabbits for us to judge. Discuss the judging card.
Reasons’ Score—Score given to contestant

Remember to hand in the card to the person in charge. The scorer or reasons judge will fill in the rest of the card.

**GIVING ORAL REASONS**

Discuss the steps in giving oral reasons.

1. **Opening Statement**—Name of Class and order of Placing.
   
   I placed this class of Dutch Senior Does 2-4-1-3.

2. **General Statement**—How you felt about the class.
   
   I thought it was a fairly hard class to judge because all except number 2 have obvious disqualifications. Number 3 was an obvious bottom.

3. **Reasons For Top Pair**—Comparison
   
   I placed 2 over 4 because 2 is more perfectly marked, correct color with no runs in saddle area. Both 2 and 4 show proper body conformation, color, erect ears, correct size, and weight with well-rounded hips and shoulders.

   Criticism of second animal in the pair
   
   However, number 4 has a white tail and a black front foot.

4. **Reasons For Middle Pair**—Comparison
   
   I placed 4 over 1 because 1 has color running into the saddle. Number 4 is marked much better.

   Give good things about second rabbit in pair
   
   I grant that 1 is correct in size and weight.

   Give criticism of second animal in pair
   
   But I criticize 1 because it has color running into the saddle and on two feet, flat hips and short ears. Number 1’s head is not a good shape and face is poorly marked. She has a white tip on the tail.
5. Reasons For Bottom Pair—Comparison
Give criticism of second rabbit in pair

I placed 1 over 3 because of weight, size and body characteristics.
I place 3 last and at the bottom of the class because she is obviously a cross-breed. She shows definite Californian body lines, ears and weight. She is poorly marked with none of the Dutch characteristics.

6. Closing Statement
Therefore, I placed this class of Dutch Senior Does 2-4-1-3.

This is not a very good class. All but number 2 have disqualifications. After you have selected 2 for your top placing, body type becomes the important factor.

DIALOGUE FOR CRITICAL THINKING:
Share:
1. What is something you learned about judging rabbits?
2. What is the most difficult part of preparing to give a set of oral reasons? Why?

Process:
3. What judging skills do you need to effectively take notes and prepare a set of reasons?
4. What is the significance of being able to explain and defend a decision?

Generalize:
5. What did you learn about your ability to organize thoughts?
6. How will this reasoning process help you make other decisions?

Apply:
7. How do you think this process of judging, notetaking, and giving an oral defense will help you in the future?

GOING FURTHER:
- Participate in a rabbit judging contest.
- Invite an ARBA rabbit judge to discuss oral reasons.
REFERENCES:
Cooperative Extension Service, Wyoming

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P.
Adams, Extension Specialist, 4-H Youth Programs, Kansas State
University

Reviewed by:
Rabbit Design Team
PRESENTING ORAL REASONS
RABBITS, LEVEL III
Member Handout 8, Sample Judging Class

In judging rabbits, look for the characteristics of the breed size, shape, color, correct markings, body conformity, weight, etc. Study the classes, select the best rabbit, second best, third best, and poorest. Remember how the numbers arrange themselves.

Now look at the card used for placing and scoring a judging event. Place the class and fill out the card.

On this page, the traditional approach to judging is shown, using the four-animal class. In real life, you may select from many animals, both your own and/or those of other breeding establishments. Using this approach, evaluate groups of animals and answer questions about their strengths and weaknesses on several important factors.
Scoring a Judging Class

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
- How to score a class by hand
- How to use the Hormel computing slide

ABOUT THEMSELVES:
- Importance of prioritizing

Materials Needed:
- Hormel computing slide(s)
- Judging Score Cards
- Pencils

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

Often, junior leaders are called upon to help with various judging events. One of the events is the scoring of the contestants’ score cards.

SCORING A CLASS

Two methods are available to score the members placings:

1. Score it themselves.

2. Use the Hormel Computer Slide either directly or make a key to use with the 4-H Judging Placing Card.

Score it themselves

Members may score their own classes by knowing the official placings and cuts. Here’s how this works:

Example 1: Official Placing 1 - 3 - 2 - 4. Cuts 5 2 6

Members placing: 2 - 4 - 3 - 1. Simply compare the members placing to the official placing and ask six questions — one for each possible pair. Every time the answer is “no” in relation to the value of the cuts, points are lost for all pairs involved.
Leader Notes

Q: Did I place 1 over 3 (like the official judge did)?
A: No, so I lose 5 points

Q: Did I place 1 over 2?
A: No, so I lose 5 + 2 points

Q: Did I place 1 over 4?
A: No, so I lose 5 + 2 + 6 points

Q: Did I place 3 over 2?
A: No, so I lose 2 points

Q: Did I place 3 over 4?
A: No, so I lose 2 + 6 points

Q: Did I place 2 over 4?
A: Yes, so I don’t lose points. ____________
Total: 35 points lost

Example 2: If members placing was 3 - 1 - 4 - 2 what would the score have been on this same class?
Answer: (-5, 0, 0, 0, 0, -6)
50
+11
39 is members score (simply reversed both pairs)

USING THE HORMEL COMPUTING SLIDE
1. Given the official placings and cuts used above, find the 1 - 3 - 2 - 4 placings at the top of one of the columns of the plastic overlay cards.

2. Locate the listing of the scores desired by adding the cuts (5 + 2 + 6 = 13), finding this total at the top corner of one of the white cards with the black scores and locating the correct combination of three cuts at the bottom of the card.

3. Place the correct column of placings beside the indicated combination of scores. Double check before transferring.

4. Make a key out of one of the Judging Placing Cards.

Provide several combinations of placings and cuts. Let members figure scores until they are comfortable with the method. Other variations may be taught with same results.

Now give the members different official placings and cuts and have them score the judging score cards. Continue until all understand how to use the Hormel computing slide.
DIALOGUE FOR CRITICAL THINKING:

Share:
1. When did you first learn to score a judging class?

2. What aspects of scoring were easiest/hardest? Why?

Process:
3. When you prioritize or rank rabbits in a class, what does the ranking indicate about the animal?

4. Why is it important to understand how to prioritize rabbits when serving as a judge?

Generalize:
5. What steps do you go through to prioritize activities that you are involved with?

Apply:
6. What would a daily routine of prioritized items look like in your life?

7. How will you prioritize other events or activities in the future?

GOING FURTHER:
- Set up and run an entire judging contest with several classes and oral reasons.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team

Think back: (Record this question and answer on a page in your record book.)
What do you think is the most important thing to remember when planning to show (to be judged) or judging rabbits yourself? Why?
Determining a Rabbit’s Condition

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
  • To know what to look for in a well-conditioned rabbit

ABOUT THEMSELVES:
  • Importance of using predictions

Materials Needed:
  • Rabbits in different conditions

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

It is important to know when your rabbit is in good condition. Condition refers to the condition of the fur as well as the flesh condition. Examine your rabbit. Is the fur free of moult, shiny and does it return to its natural position when stroked in the opposite direction? The coat should be shiny, free of stain and moult.

Run your hand over the body of your rabbit. Does the body feel smooth without any bones protruding? Or, is the rabbit like a washboard? A rabbit in good condition should be firm of flesh and feel smooth when a hand is ran over the body.

A rabbit may have excellent conditioned fur but have poor flesh condition. Some strains of rabbits never develop good flesh condition.

A rabbit may have good flesh condition but the coat isn’t finished. The fur doesn’t return to its natural state when stroked towards the head. The fur may be in a state of moult. A few rabbits never seem to have finished fur.

Sometimes the word “finish” is used for condition. When we talk about the finish of a market animal, we usually are talking about the flesh condition. A finished coat is free of stains, moult, and is shiny and full of life.

Now have the members examine the rabbits present. Have the members determine the fur and flesh condition of each rabbit.
DIALOGUE FOR CRITICAL THINKING:

Share:
1. What does “condition” refer to when talking about rabbits?
2. What is your rabbit’s condition? Include both flesh and fur condition.

Process:
3. Why is it important to know and understand the condition of your rabbit’s fur and flesh?
4. What condition is more important, fur or flesh? Why? Can the condition of the fur be the opposite of the condition of the flesh? Why?

Generalize:
5. How does the fur and flesh conditions predict the animal’s general health?

Apply:
6. What other predictions have you used? Why?
7. How can you use predictions in the future?

GOING FURTHER:
• Research the rabbits that are not expected to develop good flesh condition.

REFERENCES:
A Progressive Program For Raising Better Rabbits And Cavies, American Rabbit Breeders Association
ARBA Standard of Perfection, American Rabbit Breeders Association

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Program, Kansas State University

Reviewed by:
Rabbit Design Team
Figuring Dressing Percentages and Average Daily Gain

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:

• How to determine the average daily gain
• How to figure dressing percentages

ABOUT THEMSELVES:

• How you measure success

Materials Needed:

• Scales
• Fryers
• Calculator
• Equipment to process the fryers (optional)
• Chalkboard and chalk or flip chart and marker

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

The rabbit producer needs to know how well his rabbits are producing. The dressing percentage and average daily gain are good indications of the success of the rabbit production.

The average daily gain is easy to figure if you have the weight of the rabbit and its age. Divide the weight of the fryer by the age of the rabbit. For example, if a rabbit weighs 4 1/2 pounds and is 60 days old, the average daily gain is .075 pounds per day.

\[
(4.5 \text{ pounds}/60 \text{ days}) = 0.075
\]

Did all the fryers have the same average daily gain?

If you were going to keep some of these fryers for a commercial rabbitry, which ones would you keep?

To determine the dressing percentage, you need to have the weight of the live rabbit and the weight of the carcass. The liver, heart and kidneys need to be left in the carcass when determining dressing percentage.

To calculate the dressing percentage, divide the weight of the carcass by the weight of the live rabbit and multiple by 100 percent. If your live rabbit weighs 4.5 pounds and the carcass weighs 2.3 pounds, your dressing percentage is 51.1 percent.

Leader Notes

Use a chalkboard to demonstrate this and other math problems.

Now weigh a fryer and give the members the age of the rabbit. Have the members calculate the average daily gain. Continue until all the fryers have been weighed and the average daily gain calculated.

At this point, you will want to dress the fryers. However if it isn’t possible to dress the rabbits at this time you still can study dressing percentages.
Have the members calculate dressing percentages for the following:

<table>
<thead>
<tr>
<th></th>
<th>Live Weight</th>
<th>Carcass Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabbit I</td>
<td>5.05 lbs</td>
<td>3.10 lbs</td>
</tr>
<tr>
<td>Rabbit II</td>
<td>4.85 lbs</td>
<td>2.76 lbs</td>
</tr>
<tr>
<td>Rabbit III</td>
<td>4.24 lbs</td>
<td>2.05 lbs</td>
</tr>
</tbody>
</table>

Answers:
- Rabbit I: \(\frac{3.10}{5.05} \times 100\% = 61.4\%\)
- Rabbit II: \(\frac{2.76}{4.85} \times 100\% = 56.9\%\)
- Rabbit III: \(\frac{2.05}{4.24} \times 100\% = 48.3\%\)

We want rabbits that have a large dressing percentage and a large average daily gain for a successful rabbitry.

If you dressed the fryers and calculated the dressing percentages for them, compare the dressing percentage with the average daily gain. Did the fryer with the best average daily gain have the best dressing percentage?

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What is one indicator that rabbit breeders use as a measure of successful production?

2. Are there other measures that you use to indicate that you have had a successful production year?

**Process:**
3. Why do rabbit breeders need to know the average daily gain and the dressing percentages?

4. How do you determine the average daily gain?

5. How do you determine the dressing percentage?

6. Is one measure more important than the other?

**Generalize:**
7. What measurements are used to determine success in other project animals?

8. How do you measure success? Why?

**Apply:**
9. How will the issues raised by this lesson, be useful to you in the future?
GOING FURTHER:
• Have the members calculate dressing percentages and average daily gain for their rabbits.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Home Processing a Rabbit

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
- Equipment needed in home processing
- Steps in home processing a rabbit

ABOUT THEMSELVES:
- Importance of food safety

Materials Needed:
- Rabbit fryer
- Sharp knife
- A bucket of water
- A bucket of ice water
- Trash can and trash bags
- Freezer wrap
- Activity Sheet 7, Steps in Home Processing a Rabbit
- Leaders’ Key, Activity Sheet 7, Steps in Home Processing a Rabbit
- Member Handout 9, Steps in Rabbit Processing

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

The best way to learn how to dress a rabbit is by watching someone demonstrate the proper procedure.

1. Rendering the rabbit unconscious—The rabbit may be stunned by hitting it with a rod at the base of the skull behind the ears. It is then suspended and the head removed immediately to permit thorough bleeding. Another method is breaking the neck. Press base of your thumb against the back of the rabbit’s head while grasping the hind legs in your other hand. Bend head back as far as possible and pull with both hands until you feel the head break away from the neck.

2. Suspending and bleeding—The rabbit should be suspended immediately and head removed so proper bleeding will occur. A number six screw hook fastened to a wall 5 feet above the floor is handy for suspending the carcass while it is being dressed. The hook is inserted between the tendon and bone of the right hind leg just above the hock.

3. The tail and front feet are cut off.

4. The free rear foot is removed at the hock joint.
5. The skin is cut just below the hock of the suspended leg and opened inside the leg to the root of the tail and extended to the left hock joint.

6. The edges of the skin are separated from the flesh and the skin is pulled down off the carcass.

7. The pelt should be set aside if you wish to tan or dry it.

8. Make a slit in the carcass along the median line of the belly. Remove the entrails. You may wish to leave the heart and kidneys. Save the liver but be sure to remove the gall bladder.

9. Remove the right hind foot at the hock.

10. Clean the carcass by rinsing in cold water to remove stray hairs and blood.

11. Cool the carcass for 15 minutes in ice water.

12. Cut up the carcass if desired.

13. Wrap in freezer wrap and freeze.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Which part of the home processing lesson was most interesting? Least interesting?

**Process:**

2. What would be the result if any of these steps were eliminated in the process?

3. What steps should you take to ensure a high quality and safe product?

**Generalize:**

4. Who should be responsible for maintaining quality standards in food processing?

**Apply:**

5. How can you apply what you learned about home processing to food safety?

6. What is the significance of food safety in home processing?
GOING FURTHER:
• Visit a rabbit processing plant
• Have the members try to dress a rabbit at home or at this meeting.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Number the steps below in the correct order according to the proper way to slaughter a rabbit.

1. Cut off tail
2. Cut off front feet
3. Remove the skin from the flesh
4. Rendering the rabbit unconscious
5. Cool the carcass in ice water
6. Remove the entrails from the carcass
7. Suspend the body and bleed it by removing the head
8. Clean the carcass by rinsing it
9. Freeze
10. Remove free hind foot
11. Cut the skin on inside of hind legs
12. Remove the last foot
HOME PROCESSING A RABBIT
RABBITS, LEVEL III
Leader’s Key, Activity Sheet 7, Steps in Home Processing a Rabbit

Number the steps below in the correct order according to the proper way to slaughter a rabbit.

7 Cut off tail
3 Cut off front feet
6 Remove the skin from the flesh
1 Rendering the rabbit unconscious
11 Cool the carcass in ice water
8 Remove the entrails from the carcass
2 Suspend the body and bleed it by removing the head
10 Clean the carcass by rinsing it
12 Freeze
4 Remove free hind foot
5 Cut the skin on inside of hind legs
9 Remove the last foot
HOME PROCESSING A RABBIT
RABBITS, LEVEL III
Member Handout 9, Steps in Rabbit Processing

1. Render the rabbit unconscious. The rabbit may be stunned by hitting it with a rod at the base of the skull behind the ears.

2. Kill rabbit by breaking its neck. Press base of your thumb against back of rabbit’s head. Bend head back as far as possible. Pull until you feel head break away from neck. There are other methods which you may wish to use.

3. You may hang your rabbit with both hind feet. This is recommended.

4. Immediately cut off head. Cut close to head and through the place where head was broken away from neck.
5. Cut off both front feet. Then unhook the right-hind foot and cut it off.

6. With a chicken-sticking knife, slit up inside of both hind legs.

7. Tear hide away from hind leg on hook.

8. Tear hide from tail and vent by working fingers between hind and body ahead of tail over rump.
9. Force fingers between hide and body and pull hide from free hind leg.

10. Cut as shown, leaving the fat on the flanks, not on the pelt.

11. As soon as the whole pelt can be held with one hand, remove it with one strong pull.

13. Cut pelvic bone between hind legs inserting knife from above and prying out.

14. Slit down belly, being careful not to cut bladder, intestines, or stomach.

15. Pull out insides by grasping stomach and holding liver in place with thumb of other hand. Carefully remove gall bladder without cutting or breaking it. The bitter green bile of the gall bladder must not be spilled on the meat.

16. Wash the carcass in cold water. It may be left in cold water for 15 minutes for cooling. Remove and place in a pan or wire basket in a natural position.
17. One method of cutting up a fryer rabbit. Rabbits are usually marketed as a cut up fryer rather than a whole.
What Members Will Learn . . .

ABOUT THE PROJECT:
- How to cut up a rabbit
- How to wrap the rabbit and make it attractive to the customer

ABOUT THEMSELVES:
- Importance of safety

Materials Needed:
- Rabbit carcasses
- Sharp knives
- Cutting board
- Styrofoam meat trays
- Plastic wrap
- Parsley

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

The member needs to know how to prepare the rabbit for the customer since many will wish to have the rabbit cut into pieces ready to cook.

Steps in cutting up a rabbit carcass
1. Start with a front leg. Pull the leg out and with a sharp knife cut through the shoulder joint. Twisting the leg helps to locate the joint.
2. Repeat for the other front leg.
3. Pull out a rear leg and cut where the thigh joins at the hip joint. Again, twist to help locate the joint. Leave the thigh and hind leg in one piece.
4. Repeat for the other hind leg.
5. Cut the carcass through the backbone just where the rib cage ends.
6. Slice along the cartilage that joins the ribs and backbone. This makes two pieces of rib.
7. Cut the rear section of the back if desired. This is the loin and is considered the best portion of the rabbit.

Now we are ready to package the rabbit. If you are selling fresh rabbit meat, you will want to make it look attractive. Arrange the pieces on a Styrofoam tray and garnish with parsley. Now wrap with plastic wrap.
If you are selling frozen meat, you should use freezer wrap to prevent freezer burn and loss of palatability.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. How easy or difficult was it to locate the joints for cutting locations?
2. What tools did you need?

**Process:**
3. What problems occurred during the activity?
4. Why do you cut at some joints and not others?

**Generalize:**
5. How does safety play a role in processing other project animals?

**Apply:**
6. How can you use the information you learned in other situations?

**GOING FURTHER:**
- Visit a market that sells rabbit meat to observe their packaging.

**REFERENCES:**
*Rabbits For Food And Profit*, Edited by Lee Schwanz, Copyright 1982 by Farmer’s Digest, Inc. Box 363, Brookfield, WI 53005

**Author:**
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

**Reviewed by:**
Rabbit Design Team

**Think back:** (Record these questions and answers in your record book.)

When raising rabbits for meat, what do you consider most important? Why?

What contribution do you think rabbit meat will make to the world food supply in the future? Why?

Present a talk or lead a discussion of one of these topics with a group or club.
Caring for a Rabbit Pelt

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to dry and store a pelt

ABOUT THEMSELVES:
• To evaluate the importance of following directions

Materials Needed:
• Pelt stretchers
• Pelts that have been dried
• Naphtha flakes

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

The members should know how to care for rabbit pelts since they can be an additional source of income. Pelts not cared for properly are worthless.

While the skin is still warm, it should be placed on a stretcher, secured with clothes pins and hung up to dry.

The skin should be placed flesh side out with forepart over the narrow end of the stretcher.

The legs should be kept on one side, thus avoiding any possible damage to the back fur.

All wrinkles should be removed.

Even though the shaper is called a stretcher, the skins should not be stretched excessively since stretching tends to weaken certain parts and to open the fur.

After one day, examine the pelt to see that the edges are drying flat and that the skin on the front legs is straight.

Do not dry the pelts in the sun or by artificial heat.

The pelts should be hung so that air freely circulates around them.

Remove all the fat from the pelts.

All pelts must be thoroughly dry before they are packed.

Leader Notes

This lesson should be done in conjunction with lesson on “Home Processing a Rabbit.”

Demonstrate to the members the stretching of a fresh pelt.

If enough rabbits are processed, let each member stretch and prepare a fresh pelt.
If the pelts are not to be shipped for some time, hang in loose bundles of 50 in a cool, dry place.

Keep pelts where rats and mice will not get to them.

If pelts are to be kept any length of time in a warm climate or during the summer, they should be sprinkled with Naphtha flakes.

Salt should never be used in curing rabbit skins.

**DIALOGUE FOR CRITICAL THINKING:**

*Share:*

1. What was the easiest/most difficult thing about caring for a rabbit pelt?

*Process:*

2. What problems occurred when you were preparing your pelt?

3. Why was it important to follow the correct order of activities when preparing a rabbit pelt?

*Generalize:*

4. How does following directions play an important role in any activity you do?

*Apply:*

5. What are some of the results you’ve encountered when you don’t follow directions?

**GOING FURTHER:**

- Practice drying a pelt.
- Have each member bring a pelt to a meeting and practice judging each other’s pelts.

**REFERENCES:**

Cooperative Extension Service, Colorado State University
Cooperative Extension Service, Washington State University

**Author:**

Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

**Reviewed by:**

Rabbit Design Team

All educational programs and materials are available without discrimination on the basis of race, color, national origin, sex, age, or disability.
What Members Will Learn . . .

ABOUT THE PROJECT:
• How to make a tanning solution
• How to tan rabbit hides

ABOUT THEMSELVES:
• To evaluate the importance of using safety procedures

Materials Needed:
• Large, hard plastic or rubber pail with lid
• Sulfuric acid or battery acid
• Goggles or safety glasses
• Salt
• Rubber gloves
• Pelts in various stages of being tanned

ACTIVITY TIME NEEDED: 35 MINUTES

ACTIVITY

In order to increase the income from the rabbit project, pelts can be tanned and either sold or made into useful items. The following lesson describes how to do this.

Use the large pail with a lid to mix the tanning solution. Either of the following recipes can be used:

A  B
2 gallons water  2 gallons water
2½ pounds salt  2½ pounds salt
2 ounces sulfuric acid  8 ounces battery acid

You should wear gloves and safety goggles or glasses when preparing and working with this solution. Mix the salt and water. Add the acid to the salt solution. (DO NOT POUR WATER INTO ACID.)

Now you are ready to prepare the pelt. Split the pelt down the belly, cut off the front legs, and remove any excess fat.

If this is a fresh pelt, you are ready to put it into the tanning solution. If the pelt has been dried, soak it in water until soft before putting the pelt into the tanning solution.

Leave pelt in solution for 24 hours or more.

Leader Notes

Have members observe the pelts in different stages of tanning.
Remove pelts and rinse in cool water. Pull flesh from the skin, working from the tail end.

Return the pelts to the solution for 48 hours or more.

Remove and wash in a mild detergent solution. Rinse well and squeeze out excess water.

Let dry slowly. As the pelts dry, stretch to break the fibers. This will cause the skin to turn white and will soften it. The more it is pulled and rubbed, the softer it will become.

Try to keep the pelt flat until drying is complete.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What was the most difficult ingredient to obtain for the tanning solution?

2. What did you like about this activity?

**Process:**
3. What is the significance of the sequence of tanning a pelt?

4. Why is it important to carefully work with acid?

**Generalize:**
5. How does safety play a role when working with dangerous ingredients?

**Apply:**
6. How can you use the information you learned in other situations?

**GOING FURTHER:**
- Make a project using a tanned pelt.
- Research potential buyers of pelts.
- Have someone who buys pelts attend a meeting and describe what they look for when buying pelts.
REFERENCES:

Your 4-H Rabbit Project, A Pacific Northwest Extension Publication,
- Oregon, Washington, Idaho, PNW 163, Revised July 1984

Official Guide to Rabbit Raising, American Rabbit Breeders Association

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P.
Adams, Extension Specialist, 4-H Youth Programs, Kansas State
University

Reviewed by:
Rabbit Design Team
Marketing Your Rabbits

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
  • The different ways to market your rabbits

ABOUT THEMSELVES:
  • Importance of first impressions and perceptions

Materials Needed:
  • Newspaper ads
  • Telephone yellow pages
  • Signs
  • Business cards
  • Chalkboard and chalk or flip chart and markers

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

It is important that the public know that you have rabbits for sale. Good advertising can be the difference between success and failure. There are several methods in which you can advertise your rabbits.

SIGN: Put up a sign in your yard. If the road past your home isn’t very heavily traveled, the sign would get better results elsewhere. Have the sign made professionally if it is to be a permanent sign.

LIST IN THE YELLOW PAGES: You can list your rabbitry in the classified directory for a relatively small amount each month.

NEWSPAPER ADS: Small classified ad that is regularly run seems to be the best. Check your local papers to see how much it would cost to run an ad.

ELECTRONIC ADS: If your rabbit operation is a large one, electronic advertising is a good way to go. However, you need to be able to supply many customers. Most members will not have a large enough operation to justify electronic advertising.

USE OF BULLETIN BOARDS: In every community, feed stores, grocery stores, etc., have places where you can post for sale notices. Take advantage of this free advertising.

BUSINESS CARDS: An attractive business card is a good way to promote.

Leader Notes

Ask the members how they market their rabbits. Make a list of these on the flip chart or chalkboard. The members may have some very unusual ways to market. Discuss each method listed.

Display several examples of promotion.
PREPARE A SIMPLE BROCHURE: You may want to prepare a simple brochure that explains what you have available to sell. These are good to pass out at fairs, shows, etc.

SHOW YOUR RABBITS: Show your rabbits at the local fairs and other shows. This will get your name in the public eye. Attend swap meets.

PROMOTE RABBIT MEAT: You could set up a small booth at local events and give away samples of prepared rabbit.

FARMER’S MARKET: Display live rabbits or dressed fryers.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What methods of marketing have you used? Why?
2. What methods of marketing did you prefer? Why?

**Process:**
3. If you didn’t market your rabbits, what might be the results?

**Generalize:**
4. What are the first impressions that marketing may convey to the public?

**Apply:**
5. How do you think you will use marketing in the future?
6. What do you think are the perceptions that marketing has on consumerism or purchasing power?
7. How will you act differently in the future as a result of this discussion?

**GOING FURTHER:**
- Have the members check the local newspapers for rabbit advertisements.
- Have the members check the yellow pages for listing of rabbitries.
- Design your own business card.
- Prepare a sample brochure.

Check with local health and food safety ordinances before attempting to sell meat products.
REFERENCES:
*Rabbits For Food And Profit*, Edited by Lee Schwanz, Copyright 1982 by Farmer’s Digest, Inc. Box 363, Brookfield, Wisconsin 53005

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
Using Rabbits in Science Fair Projects
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to conduct a science fair project

ABOUT THEMSELVES:
• To evaluate personal organizational skills

Materials Needed:
• Chalkboard and chalk or a flip chart and marker

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

It is possible for members to expand their rabbit project by conducting science fair projects using rabbits.

In order to conduct a science fair project, you need to attempt to solve a problem. The problem might be: Which commercial rabbit pellets will produce the most rapid gain in young rabbits?

Then you need to set up a hypothesis. Our hypothesis might be that Family Ration will produce the most rapid gain in young rabbits. Remember that in your science fair project, you wouldn’t use commercial names so each feed would be given a letter code. Family Ration might be feed A. So the proper way to state our hypothesis would be: Feed A will produce the most rapid growth in young rabbits.

Now you need to plan your procedure, how will you conduct the experiment. In this case we will assume that we are going to use 15 New Zealand White rabbits and three different commercial feeds. The following steps should be followed:

1. Each of the rabbits need to be tattooed so you can keep track of them. For instance rabbits fed feed A, could be tattooed 1A, 2A, 3A, 4A and 5A. Those fed feed B and feed C could be tattooed in a similar fashion.

2. Weigh each of the rabbits and record the weight.

3. Make sure that the only difference in how the rabbits are being cared for is the feed.

4. Provide the rabbits all the feed they will eat.

Leader Notes

Have members brainstorm other kinds of problems and hypotheses for potential projects.
5. Weigh the rabbits every week; record the weight of each rabbit.

6. Examine the rabbits and record your observations each time the rabbits are weighed.

7. After six weeks, see which rabbits have gained the most. Subtract the initial weight of each rabbit from the final weight.

8. Calculate average daily gain during the experiment by dividing the number of days (42) into the net gain for each rabbit.

9. Compare results; which feed produced the most gain?

10. Write your conclusion. Feed B produced the most rapid gain in young rabbits. Feed C produced the least amount of gain.

Other science fair project ideas:
1. Rabbit’s Digestive System
2. A Rabbit’s Skeleton
   a. Selfs
3. Fur genetics
   a. Satin
   b. Rex
   c. Chinchilla
   d. Himalayan
4. Color genetics
5. Buck teeth

**DISCUSSION FOR CRITICAL THINKING:**

**Share:**
1. Why would you choose a rabbit project for a science fair exhibit?

2. What do you think is the easiest/most difficult thing about preparing a science fair project? Why?

**Process:**
3. What is the significance of using rabbits in a science fair project?

4. What scientific techniques are easily demonstrated at a science fair?

**Generalize:**
5. What organizational skills did you use in this project?

**Apply:**
6. How will the organizational skills that you learned in this activity help you in the future?
GOING FURTHER:
- Plan to give your science fair project talk for other groups.

REFERENCES:
Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed By:
Rabbit Design Team
Harvesting Angora Wool

Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to pluck and shear the Angora rabbit

ABOUT THEMSELVES:
• Decision making

Materials Needed:
• Member Handout 10, Illustrations for Plucking and Shearing Angora Wool
• Plucking blade
• Scissors
• Containers for wool
• Angora rabbit

ACTIVITY TIME NEEDED: 40 MINUTES

ACTIVITY

All Angora have wool that must be harvested with some regularity. The English and French moult somewhere in the 8- to 12-week range. The Giant Angora does not really moult and, therefore, needs to have the wool harvested every 90 days.

The method you use to harvest the wool is dictated by the rabbit and the end use of the wool.

Plucking should be used on any rabbit that is going to be shown. The major disadvantage to plucking is that it can and does cause wool loss over a period of time. Another disadvantage is that it is labor intensive. Plucking should be done so that the rabbit feels no pain.

STEPS IN PLUCKING
1. Hold the animal with your left hand. Using the thumb and index finger of the right hand, or a plucking blade, begin pulling the wool.

2. Start right behind the neck and work back in an even manner.

3. Pull out as much wool as will easily come out with a firm tug.

4. Use your left hand to hold down the surrounding skin.

5. Work down the sides of the Angora as far as you can reach.

Demonstrate the plucking method.
Demonstrate the shearing methods.

**STEPS IN SHEARING**
1. Make a part down the rabbit’s back from the tail to the nape of the neck.

2. Using your scissor blade, section off a parallel piece no more than an ⅛ of an inch.

3. Use your left hand to pull the wool out slightly from the body.

4. Before actually cutting, use the blunt edge of the scissor blade to "comb through" the wool section being held by the left hand.

5. It will take practice to shear the Angora so that you are getting a prime wool product.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What is the time range for harvesting Angora Wool?

2. Which method of harvesting have you used?

**Process:**
3. Why is it important to know the different methods of harvesting Angora Wool?

4. When deciding which method of harvesting to use, what would you base your choice on?

**Generalize:**
5. What other types of decisions do you have to make when working with animals?

6. What are some decisions that you make on a daily basis?

**Apply:**
7. How has this activity made you think about decisions for the future?

**GOING FURTHER:**
- Have the member try to harvest the wool from an Angora Rabbit.
- Have the member try to spin the wool.
REFERENCES:
Rabbits USA, February 1989
Rabbits USA, March 1989

Author:
Clarence W. Linsey, Kansas State Rabbit Breeders Association; James P. Adams, Extension Specialist, 4-H Youth Programs, Kansas State University

Reviewed by:
Rabbit Design Team
HARVESTING ANGORA WOOL
RABBITS, LEVEL III
Member Handout 10, Illustrations for Plucking and Shearing Angora Wool

Wool resting on index and middle finger, held in place by thumb

Pull just tight enough to make skin taut

Plucking blade

scissors blades flat on skin

Use blunt edge of scissors to comb second cuts and new growth out of the next section to cut

Side view of sheared sections
Recycling Rabbit Manure
Rabbits, Level III

What Members Will Learn . . .

ABOUT THE PROJECT:
• Ways to recycle rabbit manure

ABOUT THEMSELVES:
• To understand the importance of recycling
• Their individual responsibilities toward recycling

Materials Needed:
• Chalkboard and chalk or flip chart and markers
• Galvanized washtub or large plastic container
• Rabbit manure
• Screen wire for covering the container
• Small amount of lard, meat drippings or vegetable shortening
• Piece of burlap
• One quart watering jar
• 100 worms
• Cornmeal

ACTIVITY TIME NEEDED: 60 MINUTES

ACTIVITY

Each year a doe and 40 young can produce about 8 cubic feet of manure. The breeder needs to know what to do with this manure.

There are several ways that rabbit manure can be recycled. You can sell rabbit manure for use as a fertilizer in gardens. You can make a compost pile using rabbit manure and any plant materials that are available. The composted manure can be used for fertilizer.

Advantages of Using Rabbit Manure for Fertilizer
1. Rabbit manure has a high nitrogen content.

2. Rabbit manure will not burn lawns or plants and is easy to incorporate in the soil.

3. Rabbit manure is excellent fertilizer for gardens, lawns, shrubbery, trees and flowering plants.

Another way you can use rabbit manure is to grow worms to be sold for fish bait.

Leader Notes
Ask the members how they dispose of the manure produced by their rabbits. Make a list on the chalkboard or flip chart.
If you have an open rabbitry, keeping hybrid earthworms beneath the rabbit cages will reduce odor, minimize fly problems and offer an opportunity for additional income from the sale of worms.

Since worm beds must be kept wet and rabbits do best at lower humidity levels, the use of worms beneath cages is not recommended for enclosed rabbitries or in cold climates where the beds stay cold for many weeks.

A worm culture requires extra time and work to keep the beds turned and moist. Developing a market and providing an adequate supply requires additional effort.

If you are planning to raise worms under your cages, you will need to prepare the beds. 1 × 12-inch boards can be used to build the beds. You will need about 6 inches of manure and rotted straw or leaves to start your bed. Moisten until you can barely squeeze out a drop of water. Add 1000 worms per doe and litter. The worms will eat the waste food and manure. Turn over the top few inches of the beds each week using a rake. The worms will keep the manure cleaned up almost daily. Therefore, no odors.

Worm beds need to be emptied at least twice a year and renewed. The reason for this is that the beds become too acidic if not renewed.

Another option is to raise worms in a bed outside of the rabbitry. You can use any large container.

1. Fill the container 8 inches deep with bedding material.
2. Add water until the bedding materials are moist throughout. Be careful not to add too much water.
3. Usually, you will need to add 1 quart of water every two weeks.
4. Mix 1 pound cornmeal and ½ pound of lard, meat drippings or vegetable shortening with the top 2 or 3 inches of bedding material.
5. Put 100 adult earthworms into the bed.
6. Cover the bed with damp burlap to prevent evaporation.
7. Place the screen wire over the bed. The screen wire prevents rodents from bothering the bed.
8. In order to control ants, place the container on small blocks which have been set in pans of oil.

In four to six weeks numerous small worms will be present. In six months the bedding material should be saturated with worms. A container 2 feet in diameter and 10 inches deep should produce approximately 3,500 to 5,000 fishing worms in a year.

Have the members help set up a worm bed.
Leader Notes

You will need to feed the bed once after the first month and then every two weeks after that. You can use cornmeal and fat or use rabbit manure.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. How did you recycle your rabbit manure?
2. What other methods might you use that would be more profitable?

**Process:**
3. Why is recycling important?
4. What problems occurred as you tried to recycle?

**Generalize:**
5. Why is recycling more important today than it was in the past?
6. What are some items that are being recycled in your neighborhood or schools?

**Apply:**
7. Why is it important that you recycle in the future?

**GOING FURTHER:**

- Raise earthworms as described in container. Keep a record of all costs, dates of watering and feeding, pest problems, and number of worms harvested.
- Check with local nurseries or garden centers to see what kind of market you might have for rabbit manure or compost.

**REFERENCES:**

*Rabbits For Food And Profit*, Edited by Lee Schwanz, Copyright 1982 by Farmer’s Digest, Inc. Box 363, Brookfield, WI 53005

*A Progressive Program for Raising Better Rabbits and Cavies*, American Rabbit Breeders Association

Cooperative Extension Service, New Mexico State University


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Kansas State University
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All educational programs and materials are available without discrimination on the basis of race, color, national origin, sex, age, or disability.

131-Rabbits, Level III
Think back:
What do you see as the most important use for rabbit pelts? Why?

What do you think will be the major market for rabbits or rabbit by-products in the future? Why?