UNIVERSITY OF CALIFORNIA AGRICULTURAL EXTENSION SERVICE

4-H CLUB RABBIT PROJECT MANUAL

4-H–Ag51

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(The pictures and material for the section, Rabbit Showmanship, were acquired through the courtesy of Glenn H. Bergen, 4-H Leader, Los Angeles County.)

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YOUR 4-H RABBIT PROJECT

From a rabbit production project, you can learn much about livestock in general, and you should make some money. You will do best if you learn all you can about rabbits, as your success will depend on your doing the right thing at the right time.

COST

Your rabbit project is an important business. You are going to have to invest some money. Where are you going to get it? If you can earn it, fine; but borrowing is also a part of good business, and by borrowing you can start with a larger project. You should pay interest on the borrowed money, just as other businessmen and farmers do.

Each good doe is going to cost you about $5. The hutch and equipment for her and her young will cost about $8 new. But, do not use up all your money on stock and equipment. You are going to have to feed those rabbits for a while before you have any income. This will cost you $1.20 to $1.50 per doe per month.

HOW MANY TO GET

If you have never raised rabbits before, you have much to learn. Start with a project small enough so the mistakes you may make in learning will not cost you so much. However, if your project is too small, you are not going to make good use of your time.

If you are 10 to 12 years old, a good-sized project is two does, with an arrangement to share a buck with someone. If you are older, try four does and a buck.

In any case, make your project a growing one. As soon as your does have shown that they can produce good litters, start saving some of the best looking young does for breeding stock. Save them from the best does only. When you make some money, consider investing it in a new hutch.

Adjust the final size of your project to the time and space you have for rabbits. If you have 10 does, you would spend around 3 hours a week on them. Each doe will require about 20 square feet of yard space.

SELECTING YOUR RABBITS

BREEDS

Meat and hides are what you are going to sell. Rabbits that grow fast make the most meat from a sack of feed. The ability to produce meat rapidly is inherited. When you buy your doe, insist on one whose mother raised at least 25 fryers last year.

New Zealand Whites and Californians are the two most popular breeds. They both have white pelts (skins with fur on), and these sell for more than colored pelts. These rabbits are of medium size and grow rapidly.

Buy your breeding stock from a reliable breeder who is making money by producing rabbit meat. You will do well to start with junior does between 2 and 6 months of age.

JUDGING

Judging rabbits requires a lot of experience. As a beginner you will have to rely on your 4-H leader or the person from whom you buy your rabbits to tell you if you have a good one. But you can look for diseases, parasites, and defects. Look for ear canker, sore hocks, buck teeth, and woolly fur. Do not buy a rabbit having any of these troubles. Be sure that your breeding animals come from stock that does not produce woolly rabbits.

WHAT IS A GOOD DOE?

The best does should:

- Remain in perfect health
- Breed regularly throughout the year
- Take good care of their young
- Provide enough milk for rapid growth of nursing rabbits
- Produce the kind of meat and fur the market wants
- Continue high production through 2 or 3 years
- Raise at least 25 rabbits up to fryer size each year

Not many does will do all of these things—even with the best of care. Only those that inherit the ability to meet these requirements have a chance to do so. Poor stock cannot do it. This is why you must begin your project with good breeding stock, and then if you save breeding stock from only your best does, your stock will improve.

Always have a few junior does ready to replace the does you cull out. In general, for each doe you keep, at least one junior will have to be raised each year. If you do have good breeding stock, and you save only the best junior does from the best proven does, you may be able to sell some juniors for breeding stock.

EQUIPMENT YOU WILL NEED

THE HUTCH

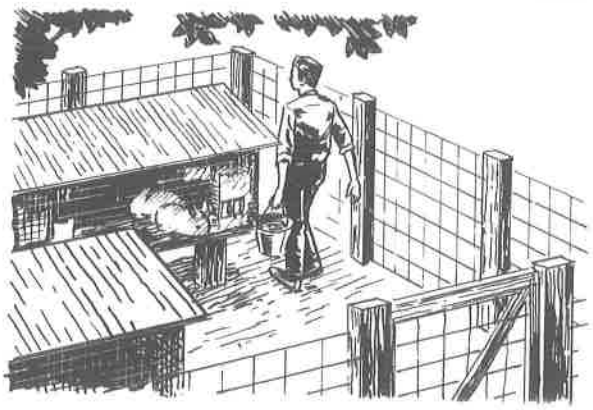
A good rabbit hutch is self-cleaning, easy to maintain, yet economical to build. It is convenient for the rabbit raiser and comfortable for the rabbit. It will keep the rabbits in and protect them from dogs, cats, and wild animals as well as from rain, wind, heat, and cold. The floor should be of 5/8-inch hardware cloth or 1-by 1/2-inch welded wire. All other open areas should be of 1-by 2-inch or 1- by 1-inch welded galvanized wire. Chicken wire is not good. Protect all wood by wire or metal because rabbits eat wood.

Each hutch compartment should have a floor space of at least 9 square feet. The top of the hutch should be at least 18 inches above the floor in front and 16 inches above the floor behind. Good hutches are taller than this.

Doors must be large enough so that feeders and nest boxes can be easily put in and taken out—no smaller than 20 inches wide and 16 inches high.

The floor of the hutch should be as high as your waist. Support your hutches by as few legs as possible, to make cleaning easier. Posts set in the ground make good supports.

Build a fence around your hutches.



PROTECTION FOR THE RABBITS

Keep your rabbits out of the wind. A lattice fence 6 to 8 feet high makes a good windbreak. Buildings and hedges will also break the wind. Overhead lattice or trees will help to protect your rabbits from the sun.

Dogs, cats, and wild animals such as skunks, opossums, weasels, gopher snakes, and coyotes also like rabbit meat. You will have to protect your rabbits from them too.

Rabbits are by nature timid and easily excited. Excitement will cause does to neglect their young and may cause a rabbit to injure himself. Your rabbits need protection against disturbance as well as from direct harm. Try to put your rabbitry inside a good fence.

STORAGE SPACE

You will need a clean, dry, well-ventilated place to store feed, hides, and equipment. Arrange your rabbit room, which may be only a corner of a garage or a tool shed, so that there is a place to put all your equipment and records.

MISCELLANEOUS EQUIPMENT

You will need feeders, waterers, and nest boxes at the start of the project. Later, you can make or buy tattooing boxes, cooling baskets, brushes for cleaning floors, rakes and shovels for handling manure, hand tools for building and repairing, tattooing equipment, carrying boxes, knives and racks for dressing, skin stretchers, wire cutters for trimming buck teeth and toenails, scales, and perhaps a few other items.

THE FEEDER

The simplest feeder is a coffee can nailed to a board to prevent tipping. A small crock is better.

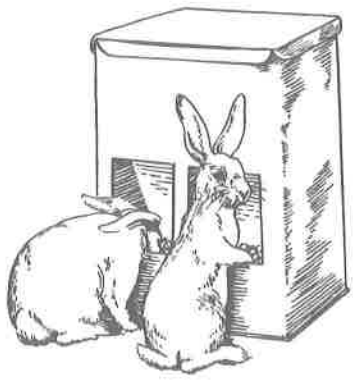
These feeders are ideal for those bucks and resting does that must be handfed a limited amount of feed daily. However, these do not serve well for feeding a doe and litter or a pen of fryers. The small rabbits get into these simple feeders and waste feed by spilling it or getting it dirty with manure and urine. Rabbits do not enjoy such dirty feed; if they do eat it, they may get sick.

Use self-feeders for your does with litters and for your pens of fryers. You will find many kinds of self-feeders on the market. They should be large enough to hold about a week's feed supply for a big litter.

The best feeder need not be filled often. It keeps the feed clean without allowing rabbits to spill it.

Look at the ground under your feeders. The feed you see there is wasted. You have paid for it. It represents money lost, because you will have to use or sell that feed as manure—not as meat.

You can make a good self-feeder from a square five-gallon oil can.



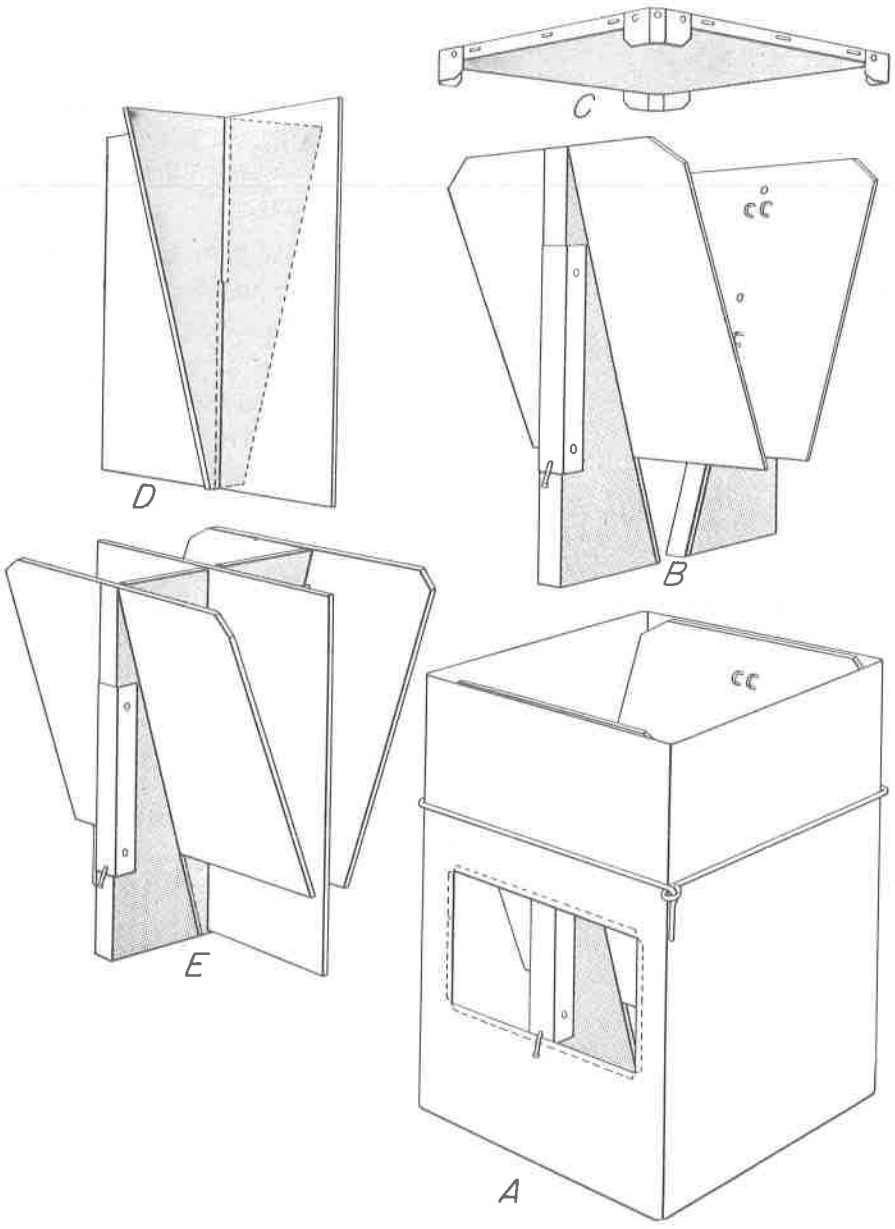
Use a self-feeder for young rabbits.

WATERERS

Crocks or a dewdrop system are best for watering rabbits. Tin cans are too often tipped over and are hard to keep clean. Crocks should be large enough so rabbits never run out of water. You will have to clean them and fill them daily. This task will be made easier if the water crocks can be cleaned and filled without opening the door.

A dewdrop type of water system will save you time, especially when you have as many as 10 does. The dewdrop valve should be installed 9 inches above the floor and close to one of the walls. The float tank should be located about 18 inches above the valves.

Complete instructions for installing this system can be found in USDA Bulletin No. 2131, *Raising Rabbits*. Your local farm advisor will also be able to advise you on the installation of this watering system.



Feeder made from a 5-gallon can. A) Feed hopper for one kind of feed. B) The two baffles withdrawn from the feed hopper. C) Lid. D) Double partition to fit between baffles of feed hopper to make it into hopper that will hold four feeds, one in each compartment. E) Assembled units (B and D) to insert in can to complete feed hopper.

NEST BOXES

A baby rabbit is without hair, blind, and unable to run around. It needs the protection of a good nest box. Whether it lives and makes money for you, or dies at your expense may depend on the kind of nest box and nesting material you provide.

A good nest box will keep the babies warm, allow ventilation and drainage of moisture, and keep the young ones in the nest box until they are large enough to get back in by themselves. It will also be large enough for the doe's comfort. In hot weather, a simple uncovered box with sides at least 6 inches high is good, and so is an apple box with an opening in one corner for the doe to enter. In cooler parts of the year, use a box that is at least half covered.

Place your nest box in the hutch, or build it there, so that the lowest part is toward the rear. If the front or open end is low, the babies are likely to make their nest right at the opening rather than in the more protected part of the box. For all types of nest boxes, make the edge of the opening 6 inches above the floor and cover all exposed edges with strips of metal.

Three kinds of nest boxes—apple box, nail keg, and half-covered.

CARRYING BOX

From time to time you may have need for a carrying box. A simple one can be made by placing a hinged welded wire cover over a fruit box.

Tattooing box and carrying box.

TATTOOING TOOLS

A tattooing box is useful not only for tattooing but also for treating rabbits for ear canker.

For tattooing you may use a regular tattooing set with tattooing pliers, but you can also do very well with a homemade needle, a tennis ball, and a supply of rubbing alcohol, absorbent cotton, and India ink. Make your tattooing needle by grinding off the eye end of a large needle until two points are made. Then wind fine thread through and around the eye, allowing the points to stick out about $\frac{1}{32}$ of an inch.

SKIN STRETCHERS

Skin stretchers can be purchased at feed stores, or made from number 8 galvanized wire. Allow 5 feet of wire for each stretcher.

COOLING BASKET

A cooling basket can be made of $\frac{1}{4}$-inch hardware cloth. Use it during hot weather —do not leave baby rabbits in the basket for longer than 6 hours. The basket is 15 inches long, 6 inches wide, and 6 inches deep.

PLANS

Plans for rabbit equipment are in the USDA Farmers' Bulletin on rabbit production previously mentioned. You can obtain a copy from your farm advisor.

FEEDS AND FEEDING

FEEDING PELLETS AND HAY

Homegrown green feed and hay are your cheapest feeds. However, in order to get the fast gains necessary for profit, you will have to feed some concentrates, such as whole grain and pellets. Feeding hay and green feed is highly recommended, but you can raise rabbits on green pellets alone.

If you grow your own green feed and hay, give does with litters and all growing fryers all the hay and pellets they want. A pellet containing no alfalfa and 20 per cent protein may also be fed with hay. Look at the tag on the feed sack for the percentage of protein. As much green feed as the rabbits will eat in 20 minutes once a day is advisable but not essential. When feeding pellets containing no alfalfa, hay also must be fed.

HOW MUCH TO FEED

Your resting does, juniors over 4 months old, and all bucks must not be allowed to eat all of the grain or pellets they want. If they do, they will get too fat and will not breed. They should receive only enough grain or pellets to keep them from getting too thin. Many resting does and mature bucks will do well on good alfalfa hay and green feed with no grain or pellets. Junior does and junior bucks (weaned rabbits under 6 months) should be fed all the hay they want and only as much of the pellets as they will eat in 15 minutes once a day.

FEEDING PELLETS ONLY

If you have no homegrown or low-cost alfalfa hay, use green pellets that are about 50 per cent alfalfa and at least 16 per cent protein. Feed nursing does and growing fryers all they want. When hay is not being fed, the amount of green pellets to feed is a real problem. A mature rabbit should have from 4 to 6 ounces once a day. You will have to decide the amount to feed. Consider the size and the condition of the rabbit. For those rabbits not nursing, feed crocks should be empty most of the time. Use a small can that will hold about 2 ounces to measure feed for each rabbit being fed a limited amount.

HAY

Hay for rabbits should be green colored and fine stemmed. If hay is grown on the ranch where you live, try to pick out the very best for your rabbits. Alfalfa is easy to grow, and a small patch, well irrigated and cut for hay and green feed, will be good for your rabbits and will save you money.

GREEN FEED

Green feed, when used, should be fed to the rabbit daily, but in small amounts—as much as the rabbit will eat in about 15 minutes. Never feed large quantities of green feed at one time. Use a manger; do not throw green feed on the floor of the hutch.

Rabbits like alfalfa, sudangrass, young grass of any kind, vegetable tops, root vegetables, and some weeds, such as Malva, or cheeseweed, that is often plentiful in early spring. Avoid weeds that have milky sap, an unpleasant odor, an unpleasant feel, or weeds that have berries on them, or weeds that other animals do not eat—they could be poisonous.

SALT

Spools of salt and fresh clean water should be where rabbits can get them at any time.

BUYING AND STORING FEED

Buy pellets in 100-pound sacks. Store your feed in a covered barrel or garbage can. Feed stored in the sack may be wasted by rats, mice, or chickens; often the sack will be damaged. Store hay indoors and handle it carefully so it will not lose the leaves.

CARE AND HANDLING

Even if you have the very best equipment, there will be work to do—cleaning up, feeding, breeding, repairing hutches, preparing nest boxes, keeping records, and moving the rabbits. These are all things you have to do correctly and at the right time. When and how you do them will have a lot to do with how much money you make.

SANITATION

Keep things clean. Be particular about this. Manure or hay on the floor of a hutch may cause your rabbits to have sore hocks and diseases. A doe in an unclean hutch with dirty feeders and water crocks may not die right away, but she is not going to earn profits for you.

HANDLING

Rabbits are easily excited. Learn to enter your rabbitry and work among your rabbits without exciting them. As you approach your rabbitry, whistle, speak to your rabbits, or knock on the door or gate to let them know you are coming. Otherwise you will excite them and they will thump and stampede. In the rabbitry, move slowly, make no startling noises.

You will need to handle rabbits to examine them for diseases or injuries and to move them from one hutch to another. Learn to do this so as not to injure or excite them. Learn to keep from getting scratched or bitten. Rabbit ears are not strong enough to use as handles. Pick up mature rabbits by grasping the hide over the shoulders. If the rabbit is to be held for a moment, place the other hand under the rabbit's hindquarters to take the weight off its hide.

If you wish to carry the rabbit any distance or hold it for a while, place it under your arm. If fryers are picked up as mature rabbits are, you will bruise the meat. Pick up fryers by placing your hand over the hindquarters and your thumb and fingers just forward of the hind legs.

Picking up a mature rabbit.

Carrying a rabbit.

Holding a rabbit.

Picking up a fryer.

COLD WEATHER

Dry rabbits can stand a lot of cold weather if strong drafts do not strike them. Drafts from under the rabbits are particularly bad. Protect baby rabbits from the cold with a good nest box and plenty of nesting material. Clean, soft shavings or clean straw make good nesting materials. Make sure the baby rabbits are not resting on the floor of the nest box, as it is cold there. Put some nesting material under them. Use a covered or half-covered nest box in cold weather.

Keep them cool.

HOT WEATHER

In hot weather, death losses are common and expensive. Shade the hutches if possible. Sprinkle water on the roof and on the ground around the hutches. If a rabbit looks weak and tired, place a wet sack in the hutch, or move the hutch to a cooler location. Use open nest boxes. Let the breezes through, and be sure there is plenty of drinking water. Extreme heat is an emergency that calls for your presence in the rabbitry.

Keep them dry.

LOOK AFTER THE YOUNG

Most does will take good care of their young if they have a good nest box, plenty of nesting material, and the protection of a good hutch. However, here are some things you must do faithfully.

- Place a good nest box with nesting material in the hutch 27 days after the doe is bred.
- Within 36 hours after the young are born (kindled), carefully count the babies and take out the dead ones.
- Reduce the litter size to seven, eight, or nine, according to the age of the doe and what you know about her ability as a mother. Eight is a good size.
- Examine the nest box every 2 or 3 days for dead rabbits and condition of nest. In cold weather you may have to push extra nesting material under the rabbits.
- When the babies are about 4 weeks old, remove the nest box. Leave it longer in cold weather.
- Thoroughly clean the nest box and put it away for use with another litter.
- Breed the doe at 6 to 8 weeks after kindling. This will be at weaning time, or a week before weaning time.
- Leave the fryers with the doe until they reach fryer size and age—4 pounds at 8 weeks. Wean breeding stock at 8 weeks by simply moving the youngsters to another hutch.

BREEDING

Many animals breed only at certain times (heat periods), and some animals will not breed while nursing, but rabbits will breed at almost any time.

You have almost complete control over the time of breeding. That is an important responsibility. Many 4-H projects have failed because members have neglected to breed their rabbits on time. Many litters have been lost because no record was made of the breeding, and the nest box was not ready at kindling time.

When a doe is to be bred, take her to the buck's hutch. Mating is usually over in a few minutes. Successful mating is finished when the buck falls off the doe. Unless this happens, consider the mating a failure, and try again in a day or so. Sometimes the doe will not allow the buck near her. When this happens, try again in a day or so. When mating is completed, return the doe to her hutch immediately, and mark the breeding date on the hutch card.

Does may be held so that they will be forced to accept the buck. Although such forced matings result in babies less often than natural matings, it is a good thing to know and to use on some of your does.

The buck may be used two or three times a week. Keep one buck for every 10 does or less.

GESTATION PERIOD

The gestation period for rabbits—that is, the time between mating and the birth of the young—is about 31 days. If a doe has not had babies within 34 days after breeding, have her bred again right away.

WHEN TO BREED YOUNG DOES

Young does should be bred at 6 or 7 months. Breeding too young may slow down their growth, but if breeding is delayed beyond 8 months, does may get too fat to breed readily.

TEST BREEDING AND PALPATING

Time and feed can be saved by test breeding or by palpating does to determine pregnancy at 10 to 15 days after mating. Test breeding is the simplest. Take the doe to a buck. If she objects to his attentions, consider her pregnant—that is, she is going to have young. If she accepts him and mating takes place, consider that she is not pregnant and add a new breeding date to her hutch card.

This test is not 100 per cent reliable; so place a nest box in the doe's hutch as though she were pregnant from the first mating. If she does not use it in a few days, remove it until babies from the second mating are about due.

You may be able to learn palpating to determine pregnancy by studying *Palpating Domestic Rabbits to Determine Pregnancy.* Your farm advisor may have copies of this USDA leaflet. You will likely do better to have someone demonstrate this technique to you—then it will take several months of practice before you will be sure of your determinations.

Palpating means feeling, and in palpating to determine pregnancy you can actually feel swelling in the uterus caused by developing babies. Do not palpate after the 16th day; you may injure the babies. Palpating is more reliable than test breeding; learn it as soon as you can.

Some does will not breed and they should be butchered or sold without delay. During late winter, spring, and summer, if pregnancy does not develop after three matings, get rid of the doe.

INBREEDING

Inbreeding is the mating of rabbits closely related. Some slow-growing rabbits and a few defective ones can be expected from inbreeding. However, if you do not have a buck that is unrelated to the rest of the stock, it is better to use him than to leave does unbred. But, do not save breeding stock from such matings.

JUNIOR DOES

Junior does should be picked out at fryer age of 8 weeks. Examine these young does to see that they have good teeth, straight legs, good size, and are free from diseases or blemishes of any kind. Save breeding stock only from does that have produced at least two good litters.

HUTCH CARDS

Hutch cards are as much a part of your equipment as water crocks and feeders. Do not expect to succeed without them. You will lose time and litters if hutch cards are not used faithfully. Make your own hutch cards or use those furnished by feed companies. Use a metal holder, or thumbtack the card to a board. If you do not always carry a pencil, keep one in your rabbitry.

WOOLLY RABBITS

Woolly rabbits may be born in some families of rabbits that are otherwise very good. Woollies have longer than normal hair; they are difficult to skin and their pelts are almost worthless. If you find woollies in a litter of fryers, both the doe and buck have caused it, and unless you understand inheritance, get rid of the stock that produced woolly rabbits.

If you have quite a number of rabbits, and woollies appear, have your 4-H leader or farm advisor show you how to determine which animals are causing woollies, so you can save does and bucks that do not cause them.

ARE THEY DOES OR BUCKS?

You will soon need to know how to determine the sex of young rabbits. Have someone show you how, and then practice until you are sure of your own determinations.

DISEASES AND PARASITES

Diseases and parasites are common and natural for all living things; so expect some in your rabbitry. Be vigilant in watching for diseases and keep equipment and housing clean to prevent them.

Well-cared-for rabbits in clean, roomy hutches are the least likely to have diseases. Your farm advisor can supply you with information on rabbit diseases.

DRESSING YOUR RABBITS

In a 4-H rabbit project, you are not only learning the practical problems of raising and caring for rabbits, but you are in business for yourself. Therefore, consider if it would be more profitable for you to sell your fryers already dressed rather than by live weight.

It is a good idea to learn how to dress rabbits properly through watching a demonstration. Consult with the local farm or 4-H advisor to see if a demonstration can be arranged.

IS IT PROFITABLE?

In deciding if it would be profitable for you to dress your own fryers, figure the hourly rate for which you are working when your project is well along. Is it profitable for you to be in business for yourself, or could you earn more working for someone else?

As you know by this time, there are a lot of details for a young person in business for himself to worry about—the price of feed, sore hocks, bloat, breeding problems, etc. These are balanced against the pride in knowing that you are doing a job well and learning while doing it.

Figure from your records what the average production per doe is per year in pounds of live-weight 4-pound fryers. Now figure how many pounds of feed are used for every pound of live-weight rabbit.

Look up the market reports and see if it is worth while selling your fryers dressed.

Here is a sample situation: a rabbit worth 90 cents alive is worth $1.20 dressed—30 cents extra per fryer. If a doe produced 25 fryers per year, this is $7.50 extra income per doe per year. And the pelts might be worth 5 cents—another $1.25 per doe per year.

Another consideration is, do you have a market in your neighborhood? If not, you might be better off selling rabbits live weight to a pickup man who will take them to market for you.

EQUIPMENT AND TOOLS

The tools are simple. Nail a board to a wall or fence at about head level. Screw in six hooks with sharpened points about 8 inches apart. A simple table about 30 inches high, 2 feet wide and 3 feet long should stand near the hooks.

On the table have two large buckets of cool, clear water. One bucket is for washing blood from hands and knives and the other is for washing and cooling the dressed rabbits.

Several wire hide stretchers should be hung ready. On the table have a coffee can of clothes pins for fastening the hides to the stretchers.

Under the hooks you need a washtub to catch the blood, intestines, heads, and feet. A simple carrying box (see page 5) may be used to hold the fryers to be killed.

Two knives are needed. One is a chicken sticking knife and the other is a boning knife. They must be kept very sharp.

KILLING AND DRESSING

Have an expert demonstrate proper dressing methods to you. People are particular about the food they buy.

The chart on pages 12 through 14 will probably be most useful to you in following the steps in dressing the fryers when you first try to do it by yourself, but experience must be gained through practice. You can soon do the job easier and faster and eventually you will be able to kill and dress a rabbit in a few minutes.

Several points on the chart are extremely important. It takes some skill to break the rabbit's neck in the recommended manner. Hold the rabbit's head so it forms the sharpest possible angle with the neck. You will be able to do it quickly with a little practice.

Another point to remember is that the head must be cut off as soon as possible after breaking the neck. Otherwise blood will clot around the neck and be hard to wash off.

When removing the intestines, place the left thumb over the liver as you pull out the intestines and the stomach with your right hand. Removing the gall bladder is tricky at first, but study just how it is attached; you will soon be doing it quickly and neatly.

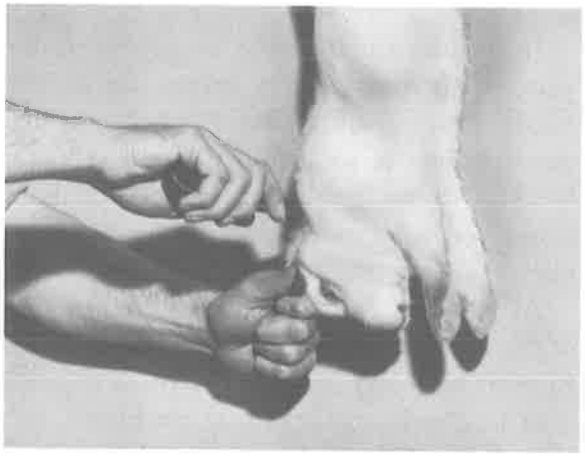
PLEASING THE CUSTOMER

Some customers will be more pleased with their fryers if they are properly molded or shaped after cooling. To do this, place the rabbit in a natural resting position in a tray or basket that will allow drainage.

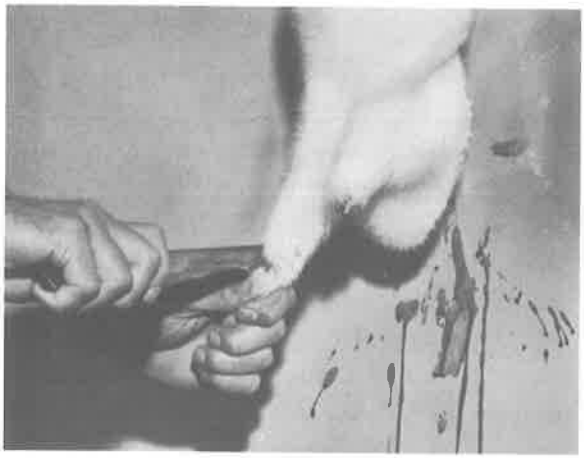
Other customers may want their rabbits cut up ready for the frying pan. You can learn to do this, and to pack the pieces in paper cartons.

STEPS IN RABBIT DRESSING

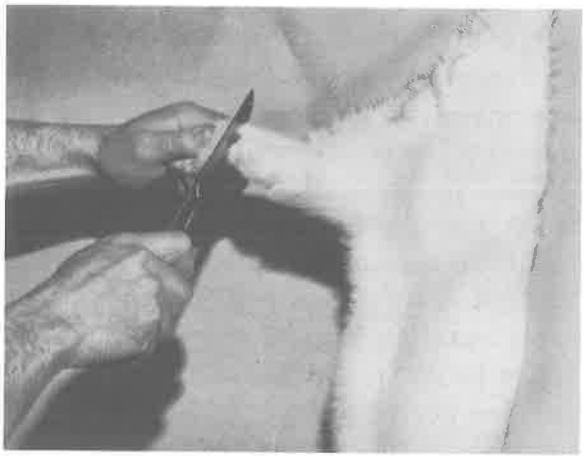
1. Kill rabbit by breaking its neck. Press base of your thumb against back of rabbit's head. Bend head back as far as possible. Pull until you feel head break away from neck.



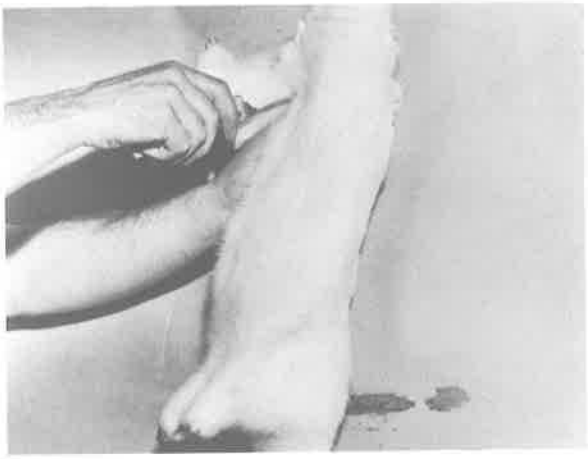
2. Hang rabbit by left hind leg, and immediately cut off head. Cut close to head and through the place where head was broken away from neck.



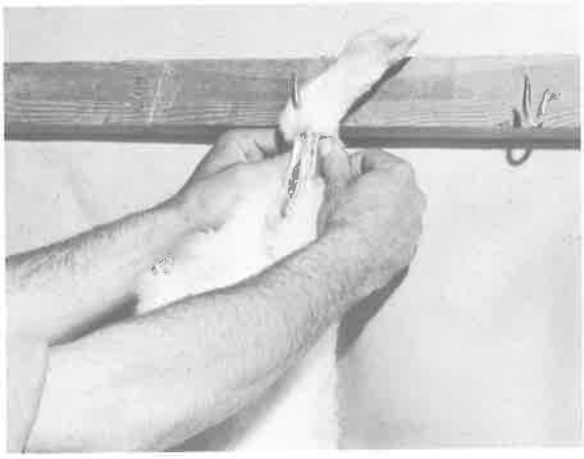
3. Cut off both front feet with a boning knife.



4. Cut off free hind foot.



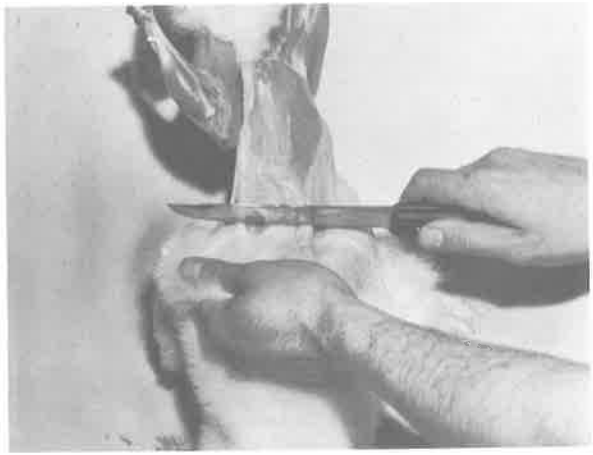
5. With a chicken sticking knife, slit skin up inside of both hind legs.



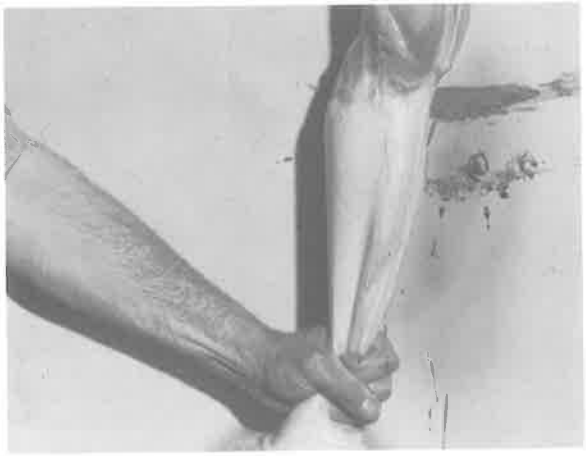
6. Tear hide away from hind leg on hook.

7. Tear hide from tail and vent by working fingers between hide and body ahead of tail and over rump.

8. Force fingers between hide and body and pull hide from free hind leg.

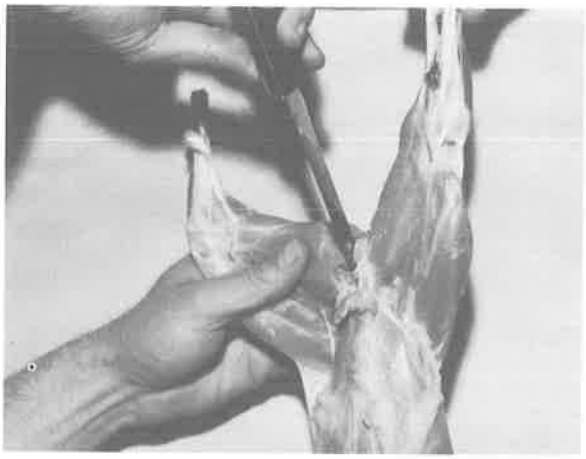


9. Cut as shown, leaving the fat on the flanks, not on the pelt.

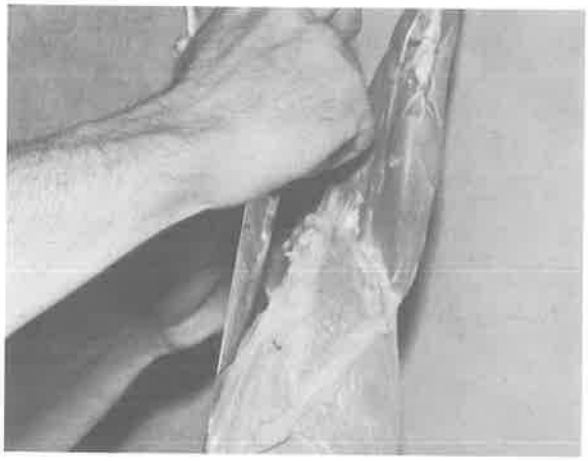


10. As soon as the whole pelt can be held with one hand, remove it with one strong pull. Dry the skins indoors.

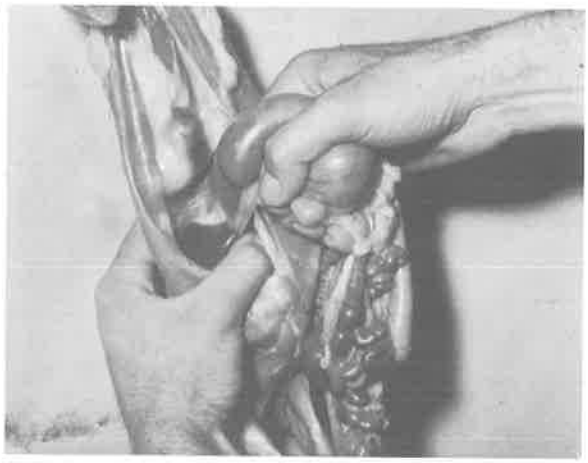
11. Cut off tail.



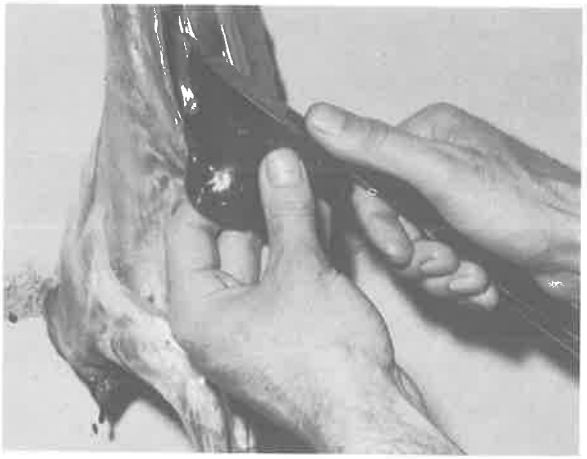
12. Cut pelvic bone between hind legs by inserting knife from above and prying out.



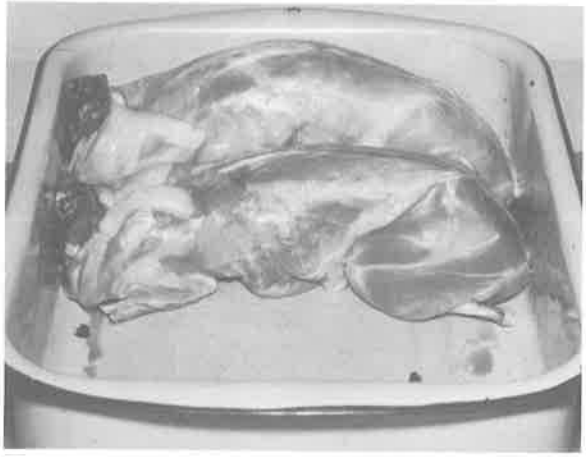
13. Slit down belly, being careful not to cut bladder, intestines, or stomach.



14. Pull out insides by grasping stomach and holding liver in place with thumb of other hand. Leave kidneys, liver, heart, and lungs in place.



15. 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.

RABBIT SHOWMANSHIP

All rabbits must be 4 months or older to be entered in a regular show. Rabbit showmanship is divided into two age groups for the exhibitors—one for young people 10 to 13 years of age, and one for participants 14 years or older.

An ideal arrangement for showing is to have two rabbit judging tables facing each other about 10 yards apart. Prior to the judging, the participant should place his rabbit on one of the tables, and stand behind it waiting for the judge's signal to begin. The judge should stand behind the other table.

Showmanship is conducted as follows:

STEP 1

Carry rabbit to judge's table (front view).

Carrying rabbit (side view)

STEP 2

Place left side of rabbit toward the judge.
Groom rabbit, brushing out loose hair.

Show the ear number to the judge.

STEP 3

At the judge's signal, turn rabbit over and show the rabbit's teeth (well meshed, straight, and unbroken).

Show rabbit's legs (straight).

Show rabbit's toenails (pigmented).

Show rabbit's hocks (well padded).

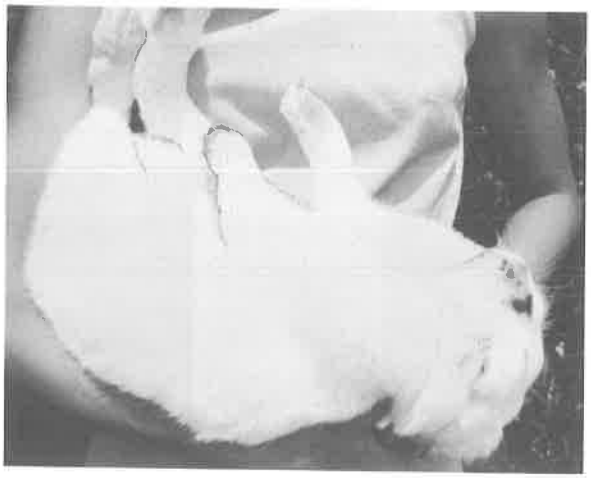
STEP 4

Pose rabbit for showing. With your hand, indicate the shoulders, saddle, hips, head and ears.

Ears must be the same length, size, and usually the same color.

STEP 5

Pick up the rabbit as shown in the photos below. The judge will have you return the rabbit to the starting table or carrying cage. He will then recall the five best participants and place them first, second, third, etc. At any time, the judge may have the participants exchange rabbits.



METHOD OF SCORING IN SHOWMANSHIP

Method of carrying rabbit to the judge's table	10
Grooming	5
Bottom-up and inspection	35
Posing rabbit	20
Carrying rabbit back to starting point	10
Condition of rabbit	20
Total possible points	100

The purpose of rabbit showmanship is to help young people become better acquainted with their animals and to learn how to better handle their stock. It also helps them to know what to look for and how to check over an animal when picking out new stock.

4-H CLUB RABBIT PROJECT MEETING IDEAS

SUBJECT MATTER AREAS THAT LEND THEMSELVES TO USE AT 4-H RABBIT MEETINGS

- Rabbit Projects
  - A. Project manual
  - B. Other rabbit information
  - C. Project requirements
  - D. Visit good rabbit project
- Keeping Record Books
  - A. Filling out records
  - B. Solving problem areas such as inventories, labor, stories, etc.
  - C. Schedule for checking book
  - D. Scoring books
- Rabbits for Projects
  - A. Breeds to use
  - B. Types of animals for projects
  - C. Sources of stock
  - D. Handling animals
  - E. Parts of rabbit
- Housing and Equipment
  - A. Requirements of housing
  - B. Number, types and kind of equipment
  - C. Type of pen flooring
  - D. Cleaning and sanitizing housing and equipment
- Feeding and Watering
  - A. Type and amounts of feeds to use
  - B. Feeding schedules
  - C. Feeding and watering equipment
  - D. Keeping feeding and watering equipment clean
  - E. Types of feed used in rations
  - F. Supplemental feeds for special conditions
- Breeding
  - A. Types of animals to breed
  - B. Checking for readiness to breed
  - C. Breeding procedures
  - D. What to do with hard to breed animals
  - E. Methods of being sure animals are bred
  - F. Palpation
  - G. Foetus development
  - H. Visual symtoms of approaching kindling date

- Kindling and Nest Box Management

  A. Doe during kindling
  B. Nest Box management
  C. Number to leave in litter
  D. Handling and sorting babies
  E. Early feeding problems

- Nest Boxes

  A. Types and requirements of nest
  B. Making up nests
  C. Managing nest
  D. Cleaning and sterilizing nest

- Hutch Cards and Breeding Records

  A. Making out cards
  B. Reading and understanding card information
  C. Place for cards and records
  D. Breeding records
  E. Methods of keeping records

- Rabbit Management

  A. Daily management covering feeding, watering, breeding, checking animals, etc.
  B. Observing animals
  C. Weighing animals
  D. Carrying and handling animals
  E. Heat control
  F. Management during critical heat periods
  G. Ventilation

- Disease and Parasite Control

  A. Basic signs of disease and parasite problems
  B. Disease diagnosis
  C. Disease management
  D. Disease prevention practices

- Sanitation and Insect Control

  A. Cleaning and sanitizing
  B. Flies
  C. Worms and worm management
  D. Sprays and spraying

- Killing and Dressing

  A. Weights for killing
  B. Killing procedures
  C. Skinning
  D. Cleaning
  E. Cutting up
  F. Packaging

- Marketing

  A. Selling live animals
  B. Dressing percentages
  C. Marketing dressed rabbits
  D. Merchandising rabbit meat
  E. Cooking and preparing rabbit meat

- Care of Fur

  A. Care of hides
  B. Grading hides
  C. Tanning
  D. Uses of rabbit fur

- Demonstrations

  A. Project reports
  B. Project visits
  C. Individual demonstrations
  D. Team demonstrations
  E. Demonstration ideas (something the members are doing in their own projects - at the beginning, have them do something and tell why they do it)
  F. Club and County demonstration program

- Showmanship

  A. Handling the rabbit
  B. Training the rabbit
  C. Showing the rabbit
  D. Showmanship contest requirements and awards

- Exhibit Requirements

  A. Fair dates
  B. Classes for rabbits
  C. Breeding dates for junior and meat animals
  D. Selecting rabbits for exhibit
  E. Preparing animals for exhibit
  F. Taking exhibit and placing exhibit at fair
  G. Returning exhibit rabbits to rabbitry

- Judging

  A. Standards for different breeds
  B. Judging animals
  C. Judging contest procedures
  D. Judging carcasses or packages

- Project Tours (at least two: one near beginning of year, one close to end of year)

  A. Meet at different homes each meeting
  B. Score projects
  C. Observe members project knowledge
  D. Check record books on tours

PROJECT MEETING REQUIREMENTS

A. Member project report
B. Review of preceding meetings subject matter
C. Subject matter taught with active member participation
D. Checking record books
E. Fun for members

INFORMATION FOR 4-H RABBIT LEADERS

PROJECT MEETINGS

A. Plan your project meetings prior to holding them

B. Obtain the necessary teaching supplies before the meeting

C. Follow a program plan that allows members to participate as much as possible

Example
a. members project reports (15 mins.)
b. announcements and member revue of previous meeting (15 mins.)
c. subject matter presentation (30 min.)
d. refreshments and recreation (30 min.)

D. Require members to bring record books to each meeting. Check to be sure they are up to date.

E. Meet at homes of all project members sometime during year.

F. Require different levels of achievement for different age youngsters (4-H Rabbit Advancement Program)

G. Use older members as assistants whenever possible.

H. Stress individual member and team demonstrations.

I. Make, "PRAISE" the base for member learning.

MEETING IDEAS

(Any of these ideas may be used during the subject matter presentation period)

1. The Project
   a. Set up standards for projects (How many breeders, how much production, etc.)
   b. Have members develop a project requirement sheet listing tentative members needs for year. (Number of hutches and other equipment, amount of fee, cost). This sheet is especially important for first year members and should be shown by them to their parents.
   c. Introduce all members to project record forms.
   d. Discuss information new members should obtain
   e. Show members a good rabbit project
   f. Have a beginning of year project tour as means of discussing project requirements and having new members and parents see other members projects.

2. Selecting the Animals
   a. Decide on breeds of rabbits that make good project animals
   b. Determine characteristics of animals that make good project animals (Production, health, temperament, etc.)
   c. Develop prices of different age animals and best ages for new member to purchase project animals.
   d. Show members top quality stock - tell them why this stock is the type they need.

2.

e. Visit a rabbit breeders operation - learn type of information breeder has on animals.
f. Visit a commercial rabbitry - discuss characteristics of good market animals.

3. Equipment and Housing

a. Determine the requirements of good housing (size, protective requirements sanitation, manageability).
b. Show members housing and further develop good and bad characteristics of housing.
c. Discuss feed storage, feeding equipment, watering equipment, nests, and equipment in work area. (Show good examples). List other equipment that members will need as projects develop.
d. Discuss sources of building ideas and equipment (plans, commercial publications, commercial growers, materials sources, etc.)
e. Score a member's rabbitry as to strong and weak characteristics.

4. Feeding and Watering

a. Determine types of feed available. (Best show materials)
b. Decide on amounts of feed and how to measure.
c. Set up schedule for feeding animals of different ages and different production stages.
d. Discuss information found on feed tag.
e. Older members can learn feed ingredients, why these materials are used in ration, and how to balance a ration. Have feed ingredient identification workshop.
f. Discuss water management. Stress cleanliness.

5. Breeding

a. Decide on ages that animals will breed
b. Discuss signs animals exhibit when ready to breed
c. Discuss breeding techniques. (breeding of animals should be observed)
d. Determine how animals can be checked for having been bred (demonstrate palpation and show members what they will find in a pregnant doe).
e. Determine time animals should be rebred and how often bucks should be used.

6. Care of Nest Box

a. Decide how nest boxes should be cleaned and sterilized.
b. Demonstrate how to prepare a new nest box.
c. Determine when new nest box should be placed in nest.
d. Discuss nest management after babies have been born (bring in sorting of litter, removal of runts, elimination of extra babies, cleaning of nest litter, etc.
e. Decide on time box should be removed from hutch.
f. Discuss methods of keeping rabbits from chewing on wood of box.

7. Sanitation

a. Discuss cleaning of hutches (removal of hair, removal of droppings, sanitation)
b. Decide how feeders and waterers can be sanitized.
c. Discuss decontamination of members hands between handlings of different rabbits.
d. Demonstrate use of burner, hose-on spray attachment, sprayer.
e. Have members clean a hutch.

3.

8. Diseases and Parasites

a. Discuss common diseases and parasite problems and what members should do in each case.
b. Acquaint members with symptoms of disease.
c. Visit a diagnostic facility.
d. Develop use and management of worms as a means of fly and odor control.
e. Discuss manure management where worms are not used.

9. Marketing

a. Determine when best to market animals (age, weight, condition)
b. List possible markets available to members, developing advantages of members selling live, dressed, packages, etc.
c. List commercial markets available.
d. Kill and dress a fryer. Determine dressing percentage of dressed animal by weighing it at each stage of procedure.
e. Discuss management of pelt, means of marketing, and uses of rabbit fur. Demonstrate stretching of pelt.
f. Discuss management of dressed carcass. Demonstrate cutting up of rabbit.
g. Visit a commercial processor and observe killing, dressing, and if possible packaging of fryers.
h. Stretch, dry and tan a rabbit fur.

10. Handling Animals

a. Demonstrate handling of rabbits as shown in state slide set.
b. Allow members to practice under observed conditions.
c. Have an inter-club rabbit handling contest.

11. Project Tour

a. All members projects should be visited at least once during project meetings program.
b. At end of year a project tour where members score projects on basis of information they have discussed during year. This would include size of project, quality of stock, housing and equipment, management practice, member knowledge, (ability to answer questions) and his completed record book.

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SUGGESTED PLAN FOR YEARS PROJECT MEETINGS

1. Introduction to Project
   a. First year members - bring parnets and discuss responsibility
   b. Field Day with various breeds displayed so a project selection can be made.
   c. Older members - suggest what would interest them
   d. Have older members review their projects.

2. Housing, Feeding, Watering, Nestboxes
   Housing - Home made
   Commercial cages
   Location
   Feeding - Prepared pellets
   Amount to feed
   When to feed
   Watering - Crocks
   Automatic
   Nestboxes - Metal
   Wooden
   Drop in or build into cage

3. Breeding
   a. When to breed
   b. Age of rabbits at breeding time
   c. Nestbox preparation

4. Nestbox Management
   a. Check litter
   b. Increase does daily ration
   c. Check doe for mastitis
   d. Change bedding in nestbox as needed

5. Field trip to Breeder or Commercial Rabbitry
   Use member worksheet if possible so observations can be recorded and discussed at next meeting.

6. Evaluate last months field trips - members observation of
   a. Discuss housing, feeding, sanitation, breeding, marketing
   b. Discuss hutch cards and the importance of record keeping

7. Culling and evaluating young stock
   a. Selecting new breeders and replacements
   b. Culling for marketing

THIS IS A GOOD TIME FOR A WORKSHOP IN JUDGING AS WELL AS A PRACTICAL DEMONSTRATION ON CULLING

8. Training and preparing a young animal for exhibiting
   a. Proper handling - (State Slides available)
   b. Showmanship practice

9. Diseases, Prevention and Sanitation
   a. Observing rabbits
   b. Symptoms of disease
   c. Cleaning cages, equipment and rabbitry area

10. Project Mini-Fair to culminate years project
    a. Make entry
    b. Bring rabbits to table
    c. Observe judging and comments
    d. Return rabbit to cage

11. Complete Project Year
    a. Bringing project records up to date.
    b. Submit finished book to project leader.

FIELD TRIP WORKSHEET

NAME:_____

YEARS IN PROJECT:_____ DATE:_____

1. Number of Breeding Does_____

2. Breeds Raised_____

3. Type of Rabbitry
   - Cages_____
   - Feeding_____
   - Watering_____
   - Cleanliness_____
   - Other Observations_____

4. Type of Pellet Used and Amount Fed to:
   - Bucks_____
   - Working Does_____
   - Young Stock_____
   - Is Creep Feeding Used?
   - How is Feed Stored?

5. Breeding Program
   - A. How Often?
   - B. How do you determine if doe is bred?
   - C. Preparation for kindling?
   - D. Follow up care of young?
     1. When do you check rate of gain?

6. Culling
   - A. How do you determine what to sell and what to keep for future breeders?
     1. Who slaughters?
     2. Market Availability?
     3. What happens to pelts?
   - B. Stock Retained
     1. How often are they handled?
     2. When do you breed?

7. Disease Prevention
   - A. How do you identify diseases?
   - B. What do you do about it?
   - C. Are worms raised?

8. Preparation of a Rabbit for Show
   - A. How do you do this?

9. What type of breeding records are kept?

10. Is your project financially profitable?

11. List any other points or observations for further discussion.

A TYPICAL MEETING

Reports by individuals

Review and discussion - records, hutch cards and specific project problems.

Demonstration by leader on judging rabbits

Judging exercise when members actually judge one or several classes of animals and give reasons

Refreshments and Recreation

Present awards

Announce plans for next meeting

Adjournment

IDEAS FOR MAKING PROJECT MEETINGS INTERESTING

1. Bring subject matter discussed down to level of member.
2. Stress member participation.
3. Have live rabbits or other demonstration materials at each meeting.
4. Have recreation and refreshments.
5. Have project meetings at each members home.
6. Project tours at beginning and end of project year.
7. Plan field trips.
8. Plan to have meetings evenly spaced throughout year. Do not cram everything into one meeting.
9. Divide ages and experience of members in project. Have older members teach younger members.
10. Have member project reports.
11. Discuss any problems members may have.
12. Praise members when they do a good job.

SUGGESTED TIME TABLE FOR PROJECT MEETINGS

1. Project reports - 15 min.
2. Review of previous meeting - 15 min.
3. Subject matter - 30 min.
4. Recreation and refreshments - 30 min.

If meetings are longer than this suggested plan, have more member participation.

4-H Rabbit Advancement Program

OVERVIEW

Raising rabbits is an interesting 4-H project. You can learn many things about selecting and feeding animals, breeding, animal health, management, showing, and marketing. Rabbits do not require much space. Costs are low compared to those required to raise many other animals. You can raise rabbits for meat, fur, laboratory research purposes, or for pleasure. Rabbits are fun and can provide you with many challenges.

The 4-H rabbit advancement program helps you learn what you need to know about your 4-H rabbit project. Have your leader check each item in a unit when you have completed it. When you have completed all items in a unit, have your leader sign the Certificate of Achievement. You can progress as fast as you want. When you complete one unit, you can start the next one. Keep the signed certificate as a part of your records.

Keep records on doe performance, buck performance, expenses for feed and other supplies, and on income. Also keep pedigree records, especially if you expect to sell breeding stock. All your records will be reviewed if you compete in county, area, state, or national awards programs.

You can get more information on rabbits from bulletins, magazines, and books. In many areas of California, rabbit breeders maintain adult and junior breed organizations. These organizations annually conduct a number of educational activities and rabbit shows. The American Rabbit Breeders Association (ARBA) provides its members with an excellent handbook, *Standard of Perfection*. Individuals can purchase copies of the handbook from the ARBA. The federal government and many major feed companies distribute informative publications on various phases of rabbit management. National magazines that carry this same type of information also are available. Local rabbit breeders also can be an excellent source of help. Don't hesitate to visit them or telephone them.

Division of Agricultural Sciences
UNIVERSITY OF CALIFORNIA

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UNIT I: THE RABBIT EXPLORER

1. Identify and describe three breeds of domestic rabbits. _____

2. Name, point out, and spell the following parts of a rabbit: hindquarters, loin, saddle, shoulder, belly, chest, dewlap, and hock. _____

3. Demonstrate (show and tell) how to lift, hold, and carry a rabbit. _____

4. Describe a good type of cage and the equipment a beginner needs. _____

5. Explain what feeds are important for rabbits. _____

6. Know the standard weights for your breed of rabbit. _____

7. Demonstrate how to tell the sex of a young rabbit. _____

8. Give at least two reasons why you take the doe to the buck's hutch for breeding. _____

9. Prepare a nest for a doe and put it in a hutch at the right time before kindling. _____

10. Explain how to tattoo a rabbit. _____

11. Submit management records for a minimum of 90 days that indicate how often you provide fresh water, clean feed, clean cage, and general care of your rabbit. _____

UNIT II: THE JUNIOR RABBIT RAISER

1. Name and describe six breeds of domestic rabbits. _____

2. Give one or more examples each of breeds of rabbits used for meat, fur, fancy, and laboratory purposes. _____

3. Describe desirable characteristics of a meat-type rabbit's hindquarters, loin, saddle, and shoulders. _____

4. Take part in a 4-H rabbit showmanship or judging contest. _____

5. Tattoo a rabbit. _____

6. Build a nest box for use in your rabbitry. _____

7. Describe or demonstrate how to sanitize your rabbit equipment. _____

8. Describe how to feed your rabbit throughout one production cycle (from breeding to weaning). _____

9. Describe or demonstrate what you can do to protect your rabbit during hot and cold weather. _____

10. Describe and give control measures for at least three diseases or problem conditions of rabbits, such as ear canker, sore hock, diarrhea, or vent disease. _____

11. Visit an approved rabbitry and learn how rabbits are housed, fed, watered, and bred; how the young are cared for; and how the rabbits are marketed. _____

12. Keep a doe production and breeding record for a minimum of 90 days. Give a report on it. _____

UNIT III: 4-H SENIOR RABBIT RAISER

1. Make out a pedigree for one of your rabbits. _____

2. Make a chart, using your own animals, to explain how good selection can improve your stock. Explain in-breeding, line-breeding, outbreeding, and the advantages and disadvantages of each. _____

3. Invite and introduce a guest speaker at one of your club meetings (for example: a local producer, butcher, farm advisor, feed dealer, or a housewife who cooks and serves rabbit). _____

4. Help butcher a rabbit and demonstrate how rabbits are cut up. _____

5. Cook and help eat a rabbit. _____

6. Demonstrate how to check a doe for pregnancy. _____

7. Explain and describe three diseases of rabbits, parasites, or problem conditions not covered in Unit II, item 10. _____

8. Make a report to your club on how to prepare a worm bed. _____

9. Attend at least two rabbit shows. _____

10. Keep complete production records on two does for a full year. Be sure to include the weaning weights of the offspring. _____

11. Keep a personal reference library of rabbit literature that will be helpful in your project. Include clippings, bulletins, books, and pictures. _____

UNIT IV: THE RABBIT LEADER

To complete Unit IV, complete any six of the items listed.

1. Complete a junior leader or teen leader project in the rabbit project. _____

2. Enroll and assist other members in the rabbit project. _____

3. Assist younger members in designing and constructing needed equipment. _____

4. Prepare teaching materials for use at project meetings. _____

5. Develop and put on a rabbit demonstration at a county or area demonstration judging event or train a junior team for such an event. _____

6. Speak on a rabbit-based subject before an organization other than your 4-H club. _____

7. Assist at a rabbit show as a clerk, secretary, recorder, or an assistant to the judge. _____

8. Show how to register a rabbit at a project meeting and show the pedigree of an animal. _____

9. Develop a breeding program for your own rabbit stock. Chart the procedures and analyze genetic results for key characteristics. Make an oral or written report on findings. _____

UNIT V: THE RABBIT RESEARCHER

Step 1. Carry through and report on the results of a demonstration comparing measurable differences in management procedure.

Examples of such an activity might include:

*Rate of weight gain of a rabbit on different feeding programs. _____

*Numbers of babies kindled using artificial versus natural breeding techniques. _____

*Results obtained from lighting rabbits before breeding versus results from those not lighted before breeding. _____

*Determine customer desire when given choice of purchasing cut-up rabbits versus those that have not been cut up. _____

*Determine effect of age of rabbits on tenderness of meat. _____

Step 2. Prepare a paper of 300 words or more on one of the following subjects. Orally summarize report at rabbit project meeting or county member educational event.

*Management of rabbits. _____

*Rabbit feeds, feeding, and nutrition. _____

*Rabbit diseases, prevention and control, and general sanitation. _____

*Markets and methods of marketing rabbits. _____

*Reproduction, breeding, and genetics. _____

*Fur preparation for market, how marketed, and used. _____

*Keeping and using records as a basis for improving your 4-H rabbit project. _____

*Other _____

SHOWMANSHIP CONTESTS

Showmanship contests give you an opportunity to exhibit your skill in handling rabbits and your knowledge of rabbit husbandry. Take advantage of all opportunities to learn these skills. If you need help in preparing for a show, ask for it.

Know the show regulations and carefully follow all directions. Wear the correct uniform. Be neat, clean, and courteous to other participants. Handle your rabbits gently and be sure they are clean, free of hutch stain, molt, and rust stain. Promptly follow the judges' instructions.

While showmanship methods differ, the basics are the same. Remove your rabbit from the hutch or carrying case. When you reach the show table, present the left side of the rabbit to the judge to show the ear tattoo. Start by posing the rabbit in a sitting position. Check for ear canker blemishes. Check the eyes. Check the front legs for crooked bone.

Then turn your rabbit over on its back and check the teeth. Run your hand firmly but gently over the underside from the rear legs to the front flank and along the neck to check for blemishes or abscesses. Check the sex. Check the hind legs for straightness. Show the judge the bottom of the pads and the toenails.

Return the animal to the sitting position and pose the rabbit in its correct position. Check the back and sides for blemishes and feel under the belly for possible rupture. Pose the rabbit to help show off its body type. Groom the fur, pose the ears, and be sure that the tail is erect and carried straight. At this time, you'll want to pose the rabbit so it will remain in that position while you step away from the judging table.

Listen to the judge for any further instructions he might give. For instance, he might ask you to show him where the loin, shoulder, or another part of the body is located. If no written test is given, the judge may quiz you on your knowledge of the rabbit breed you are showing as well as on general information about rabbit husbandry. Also be well informed on general disqualifications, eliminations, and faults.

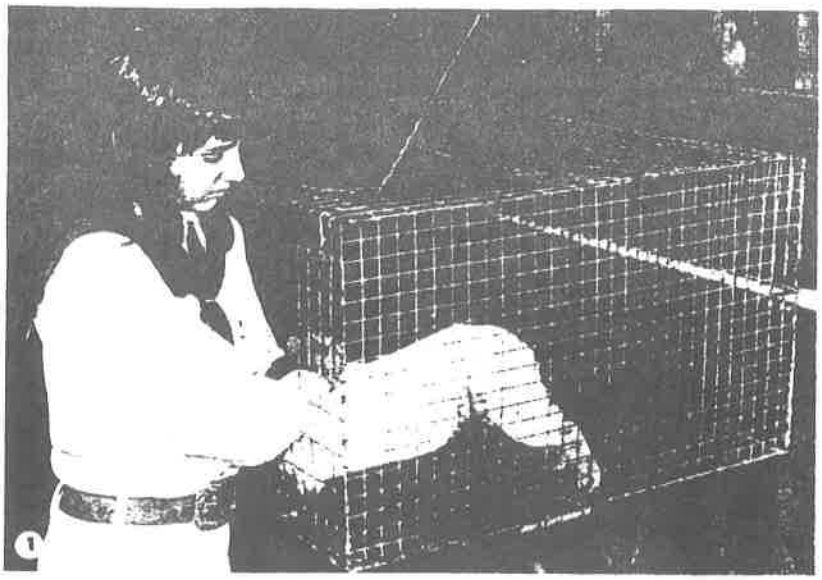


Figure 1. How to remove a rabbit from a cage. Grasp the rabbit over the ear and by the skin over the shoulder. Support the rabbit under the rump with the other hand and lift it out. Then tuck the rabbit under your arm and support it as shown in figure 2. Close the cage door.

Figure 2. Note how this 4-H'er holds the rabbit tucked under one arm while opening and closing the cage door.

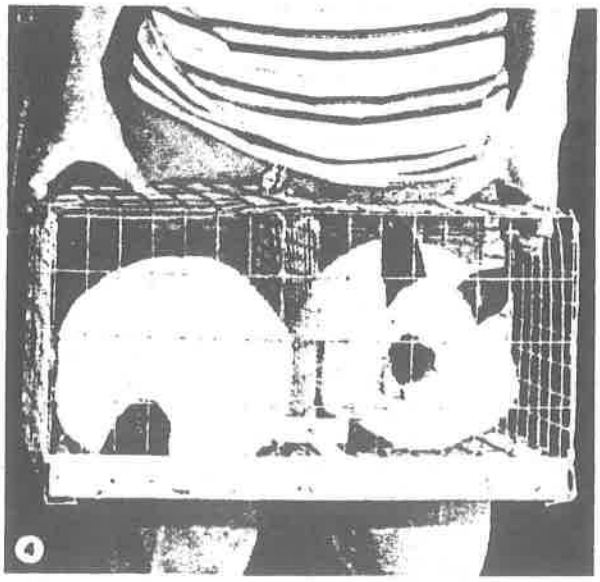
Figure 3. Carry a rabbit in the correct, tucked position.

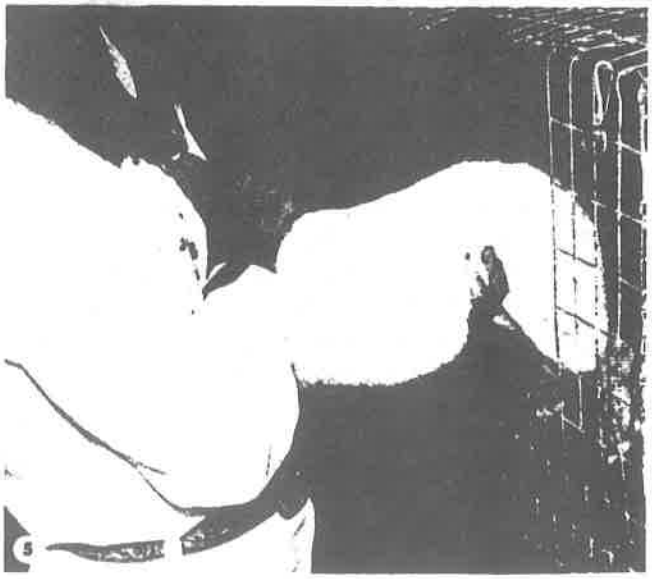
Figure 4. A two-hole (double) carrying case.

Figure 5. Return the rabbit to the cage, hindquarters first.

A slide set illustrating showmanship procedures can be obtained from your county 4-H office.

Learn the terms used by rabbit breeders and be able to identify the parts of a rabbit.





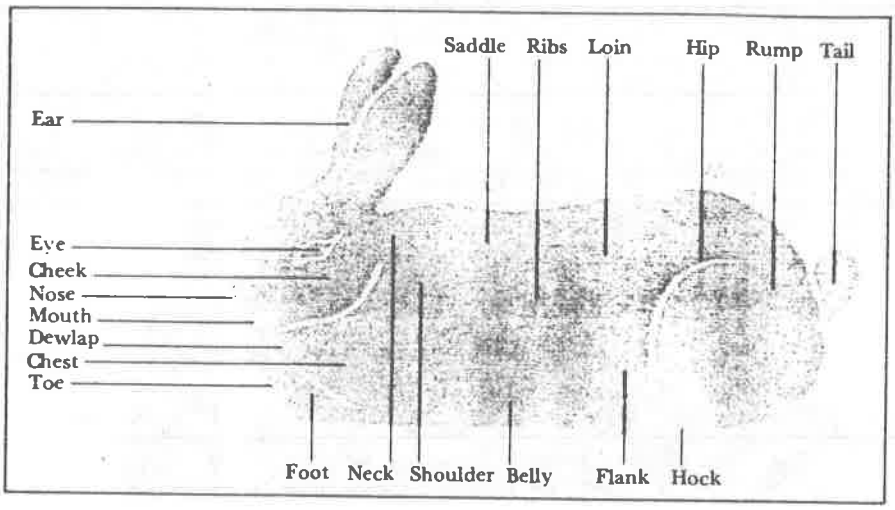


Figure 6.
Parts of a rabbit.

EDUCATIONAL EXPERIENCES

There are many opportunities for educational activities in the rabbit project. Decide what to do by your own interest, your club's needs and desires, and your nearness to the rabbit industry, its sources of supply, its market, and its research facilities.

By visiting rabbit raisers and breeders, you can learn about different management practices and their value. Rabbit processors can discuss and demonstrate: the killing and processing of rabbits; how a rabbit may be cut up, packaged, and frozen; the retailing of rabbit meat; and the care and processing of hides. A trip to a furrier may give information about tanning hides and the use of rabbit fur in making clothing and clothing accessories. Visiting a laboratory, university, or college is a good way to learn about the value and use of rabbits in research studies.

Feed stores or mills will often provide samples of feed ingredients, ration information, and information on feed handling and use. They may also take you through their milling facilities. In many cases, these organizations can provide speakers or films for club meetings.

Attend a rabbit show or participate in one to learn more about breeds, showmanship, and rabbit husbandry.

A restaurant that serves rabbit meat may show how they prepare and serve it.

A worm grower can give you information about the propagation and marketing of worms.

A veterinarian or the personnel at a diagnostic laboratory can inform you about diseases and drug use or give anatomy or dissection demonstrations.

All these activities require planning ahead for maximum learning experiences. Set a specific date and time for the activity. Provide your host with information on the numbers, ages, and experience levels of the members who will be participating. Discuss the types of information of interest to your group. Encourage attendance by promoting the event at a meeting shortly before the event is to be held. Ask members to think about the information they will obtain and the questions they want answered. If possible, arrange for the members to take pictures and colored slides so they can share the information with others.

Give pictures and stories about activities to local newspapers and radio and TV stations. Report on the activity to your club. Share what you have learned with other organizations. People enjoy hearing from young people who are interested in and enthusiastic about their projects.

Educational experiences are fun and stimulate interest and growth.

COOPERATIVE EXTENSION UNIVERSITY OF CALIFORNIA

Certificate of Achievement

THIS CERTIFIES THAT

_____

has completed the Rabbit Achievement Program in _____ county.

An Achievement Seal is awarded when a step in the level testing has been completed.

_____ _____

4-H Youth Advisor Date

Rabbit Explorer	Junior Rabbit Raiser	Senior Rabbit Raiser	Rabbit Leader	Rabbit Researcher
put seal here	put seal here	put seal here	put seal here	put seal here
_____ Date	_____ Date	_____ Date	_____ Date	_____ Date
_____ Leader signature	_____ Leader signature	_____ Leader signature	_____ Leader signature	_____ Leader signature

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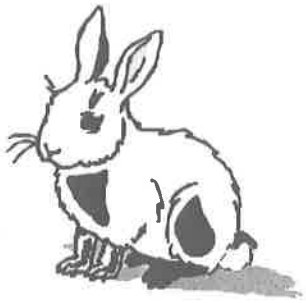
HOW TO PROPERLY CARE FOR YOUR RABBIT



Congratulations on your new rabbit! Rabbits are complicated animals and need proper care. They trust us and depend on us to survive. Rabbits are not toys. By understanding what your rabbit needs and what it can and cannot have, your relationship with your rabbit will be a strong and beneficial one for many years to come. A few topics of general care are:

- **Feeding/treats** Rabbits can be fed once a day in the evening (about dusk) during the time they are most active. Rabbits are fed alfalfa pellets that can be purchased at feed stores. When buying feed, check the ingredients and try to get the brand with the most fiber – fiber is very important in a rabbit's diet. Treats such as fresh (not canned in syrup) apples, pineapple, grapes, banana, peaches, papaya (fresh or dried), oats, cheerios, carrots, and celery are all adequate treats but must be fed **IN SMALL PORTIONS.** Never feed a rabbit cabbage or lettuce as it can cause excess body fluids.

- **Housing** The size of a rabbit's cage is crucial. If a cage is too large for the rabbit and it becomes scared and starts to run, it risks being injured. If a cage is too small, it is uncomfortable! Cage size is classified by the size of the individual rabbit (i.e. a 2 - 4½ lb. rabbit requires about an 18 x 24 inch cage) Avoid cages with paint coating on the wire because a rabbit is liable to ingest the paint substance and become sick. A cage with a lower catch pan that slides out is very important. Rabbits are clean animals and have to be separated from the bedding they defecate in so a catch pan tray is highly recommended. A good set up usually costs about $35 to $45. Rabbits should never be put together. Bucks as well as does fight with each other and can hurt each other.

- **Cleaning** Wood shavings are commonly used as bedding for rabbits. Shavings can be obtained from feed stores or other facilities that produce wood shavings. A caution pertaining to shavings is to **NEVER USE CEDAR.** Cedar shavings or chew toys are unhealthy for your rabbit despite the nice smell. Cedar can be fatal to rabbits if eaten. Once it enters the intestine, cedar tends to splinter inside the body and cause gastrointestinal problems or even failure. Pine, fir, or fruit woods are acceptable woods for bedding. Pine is the most common, easiest to obtain and best smelling wood for bedding. With the proper set up (using a catch pan system) when the tray needs to be cleaned (about every other day with smaller rabbits) simply remove the tray from the underside of the cage and transfer the dirty shavings or bedding to a trash can or plastic bag. Some gardeners like to use some of the used rabbit shavings and feces in their gardens because they are a good source of organic material.

- **Tools** Good tools for grooming and upkeep include animal brushes that you can purchase at feed stores or pet stores. Be sure to purchase nice brushes that have thin wire teeth. This way the grooming process will not be uncomfortable to the rabbit. If the rabbit enjoys grooming, it is easier and more enjoyable for both of you. More important tools are: toenail clippers, food cups or clip-on dishes, water bottles, and resting mats. Mats should be thin slabs of **PINE** wood (**NOT** plywood due to the harmful glue) so that the rabbit's feet do not become irritated or sore.

- **Toys** A few toys for rabbits include pine chew toys (avoid color treated blocks), empty soda cans, and pine cones. **NO PLASTIC TOYS!** Try to stay within the toys listed – anything else may not be suitable for your rabbit.

- **Transportation** Travel cages can be purchased online (same for housing cages) or from other sources that carry equipment for rabbits.

- **Illnesses** Rabbits are susceptible to many illnesses. Most problems occur from accidents while feeding or poor cleaning habits. A few common illnesses are:

  Hairballs - Signs are not eating or drinking, and stools containing hair particles. Feed the rabbit something with citric acid such as papaya or pineapple.

  Diarrhea – Signs are mushy stools. Give your rabbit some water and some foliage such as Timothy, oat, or alfalfa hay. Keep an eye on your rabbit to see if the symptoms worsen.

- **Hydration** If a rabbit isn't getting enough water or none at all, it could be **DEAD IN 36 HOURS.** Always make sure your rabbits have lots of water and that their water bottles are not clogged with any fur or other substance. The water has to be fresh and clean.

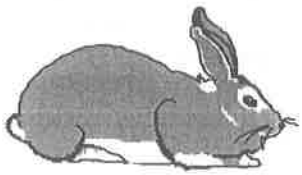
- **Handling** When handling your rabbit, use caution when moving the animal from one place to another. To transport your rabbit short distances, simply tuck its head under your arm and support the hindquarters with your hand. When a rabbit needs to be flipped over, with the rabbit facing you take your right hand and grab the ears and a section of scruff underneath the ears. Don't worry, this doesn't hurt the rabbit when the scruff is grabbed as long as it's held in a gentle manner. Once the ears are stable, use the left hand to scoop the hindquarters towards you. Hold the rabbit by the ears and scruff while it is upside down. When handling your rabbit, be careful with its back. The rabbit's **SPINE IS EXTREMLY FRAGILE** and can break easily with a simple accident so must be handled with care.

*** Web sites**

Rabbit information: www.arba.net

Supplies for sale: www.kwcages.com & www.klubertanz.com

*These are listed for your convenience. No endorsement or promotion of these products is intended.



Have fun and we hope you have many wonderful years with your new pet!

This handout was written and distributed by the Tuolumne County 4-H Rabbit projects. For more information about the 4-H Youth Development Program, go to www.ca4h.org or call your local University of California Cooperative Extension Office. April, 2004

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SUBURBAN RANCHER

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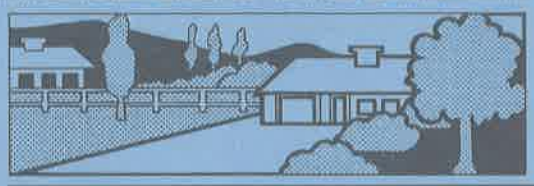

RABBIT REPRODUCTION

Number 8

In a clean, stable environment, a well-fed rabbit has a low incidence of diseases and reproduces easily. Optimum production can reach seven litters per doe a year, totalling 56 weanlings with good breeding/production records and proper selection of breeding stock.

Sexual Maturity

The medium-sized doe reaches sexual maturity at three to six months of age. Many young does will breed one or two months before they are capable of becoming pregnant. The buck reaches puberty at six or seven months of age, one or two months later than the doe. He may have live sperm at four months but is not a consistently good breeder until seven or eight months of age. The smaller breeds of rabbits mature at three or four months of age and large, giant breeds mature at nine to twelve months of age.

A good breeding doe will produce for one to three years. Litter size usually decreases after three years. Most breeders base their culling program on litter weanling weight and weanling number. After two successive poor litters, the doe should be culled from the breeding colony. Most good breeding bucks will be productive for five or six years. Normally, one buck is used for 8 to 12 does and is used for breeding two to three times a week.

Fertility

Most domestic rabbits are fertile all year with the lowest fertility for one or two months in the fall. The litter sizes, live births and numbers weaned may decrease in the spring and fall due to the various effects of irregular seasonal weather.

The major factor in low production is the failure of 20 to 25% of the does to ovulate after copulation. Poor breeding techniques, hereditary factors, cogenital defects and inadequate nutrition also contribute. The most common diseases causing productive failure are vent disease (rabbit syphilis), mastitis (blue breast, caked udder), uterine infections (metritis), bacterial infections (pasturellosis) and pregnancy toxemia.

Life Span

Both the doe and buck have an average life span of five or six years, although some rabbits live to 13 years of age.

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Breeding

The doe should be rested for seven days after each weaning before she is rebred. Fourteen days after being bred, she should be examined for pregnancy. Rebreed her at 18 days if she is not pregnant.

Always take the doe to the buck's cage. He will quickly mount her and after 8 to 12 very rapid copulatory movements fall over backwards from the doe. The buck often rebreeds within minutes. It is a good practice to return the doe to the buck in four to six hours. A doe may refuse to mate with a buck, but will readily accept another buck or she may accept the buck one time but refuse him the second time. A few does will have a slightly moist purplish-colored vulva and show increased restlessness, chin rubbing and increased attention to rabbits in adjacent cages during their period of full sexual receptivity which occurs about every 18 days.

Ovulation and Conception

The rabbit does not ovulate spontaneously. The doe is an induced or reflex ovulator (mechanical stimulation of mounting and/or vaginal stimulation, or an orgasm induced by contact with other females, is required before eggs are released from the ovary) and ovulates 10 to 13 hours after breeding. She fails to ovulate after 20 to 25% of her breedings. Within six hours after ovulation, the egg has a mucin covering and can no longer be fertilized. The sperm needs four to six hours inside the female reproductive tract to complete its development (capacitation), with optimum sperm fertilizing capacity lasting up to 36 hours after breeding.

Gestation

The gestation period (time from conception to birth) for the domestic rabbit averages 31 days but ranges from 30 to 35 days.

Pregnancy Diagnosis

If the doe refuses the buck at a test mating 18 days after the initial breeding, she is usually pregnant, although a few does will accept service when pregnant and others may refuse when not pregnant. With careful practice, you can gently grasp the abdomen of a pregnant doe between the hind legs and in front of the pelvis with your fingers and feel the difference between a fecal pellet in the large intestine and the marble-sized fetuses in the uterus as they slip between the fingers 12 to 14 days after breeding. The mammary (milk) glands start to slowly increase in thickness 14 days after breeding, but most of the breast development is in the last few days of pregnancy. The doe will reduce her food intake and start to make up her nest two or three days before birth.

Pseudopregnancy (False Pregnancy)

If a doe starts pulling fur from her abdomen and making a nest 16 to 22 days after mating instead of pursuing normal nest making activity at 28 to 30 days, she is having a false pregnancy. Pseudopregnancies can be reduced by always housing the breeding does by themselves 16 days prior to breeding. This prevents any mounting resulting in the reflex ovulation stimulation of rabbits. A few does have false pregnancies from mounting activity of their own litters prior to weaning.

Nest Boxes

The doe needs a wooden box in her cage three to five days before kindling. This gives her adequate time to accept the box. Nest boxes vary in size but average 18 to 22 inches long, 11 to 12 inches wide, 12 inches high at the back and sides and 9 inches high in front. These boxes are needed for the comfort and seclusion of the doe and protection for her young. An open box works well in warm climates; a partially covered nest box is best in cold climates. Boxes must have several small holes bored in the bottom and top to provide drainage and to prevent condensation inside the box. Wooden boxes with metal trimmed edges to prevent chewing and any sharp projections or splinters offer the most warmth.

To help keep the nest boxes dry and clean, a two-inch layer of non-edible, clean, absorbent bedding may be added to the bottom of the nest box. Most kinds of clean straw, excelsior, shredded paper or wood shavings are suitable types of bedding surface for the nest box. The doe will pluck hair from her abdomen, dewlap and the inside of her legs, creating a warm fur-lined nest inside the box.

Nest boxes should be quitely inspected every day to be sure that the young are clean, dry and doing well. If a doe is not producing milk, the young will die within two to three days.

Remove the nest box when the young start leaving it to eat on their own at about three weeks of age. Try to select does that keep a clean nest box. Some does spend a lot of time in their nest box with excessive urination and defecation inside the box creating a dirty environment and increased incidence of disease.

Parturition

Parturition (giving birth) is called kindling and usually occurs during the early morning hours. The normal birth takes less than 30 minutes. A few does will deliver their litter over a one to three day period. If there are no births within three days after the due date, the fetuses (babies) will die inside the uterus. Consult your veterinarian for any fetuses retained beyond 35 days which, if not expelled, will prevent future pregnancies.

Litter Size

Litter size ranges from 1 to 13 young, varying with the season of year, age of doe, number of litters and strain of rabbit. The number born alive is usually greatest in the second and third litters, declines in fourth and fifth litters and is smallest in the first litter. The total litter size and numbers born alive in the litter are highest in the cooler months and lowest in the hot months. The average litter size is eight young; since most does have eight functional nipples, larger litters should be reduced to eight young to insure adequate milk for good growth.

On the day of kindling, after the doe has quieted down, the young should be examined. The dead, runts and deformed young should be removed. Litter size can be regulated by transferring young from the larger litters to does with small litters. This transfer works best if it is done within the first few days of birth. Litters born as far apart as three days may be mixed, but it is best to mix litters of the same age.

Newborn

The young are born deaf, blind and hairless. Hair starts to grow at five days of age. The ears open at eight days and the eyes open at nine or ten days.

Nursing

The doe normally feeds her young for only five minutes every 24 hours. Rabbit milk is richer than cow and goat milk. It is yellower and more viscous and contains more protein, minerals, fat and sugar. The doe reaches her maximum milk production during the second week and starts to decline during the fourth week of her six- to eight-week lactation period.

The amount of milk produced and the duration of lactating depend on the diet, number of suckling young and genetic selection. High milk yield, number and weight of young should be considered when selecting does for breeding stock. The weight of the litter at three weeks is often used as a good indication of milk production. At six to eight weeks, most of the young rabbits' intake is solid foods, so the weaning weight is less related to milk yield.

Scattering and Cannibalism

A few does will kindle outside the nest box or remove the newborn from the nest box, scattering them around the cage. Outside of the protective fur nest, the hairless babies quickly die from exposure. Occasionally, the young are eaten by the doe. These conditions rarely occur after the babies are one to two days of age. Most scattering and cannibalism are with the doe's first litter. If there is a reoccurrence with the second litter, cull the doe. Environmental disturbances, nervousness, poor nutrition and heredity are factors influencing the incidence of scattering and cannibalism.

Weaning

The young start to eat solid food around three weeks of age and should be weaned at six to eight weeks (average 42 days and/or three to four pounds body weight for the New Zealand White).

Postpartum Breeding

Does will mate immediately up to twelve days after birth. Following that time, many does refuse the buck until the young are 50 to 60 days of age. If the young are removed, the doe will again become sexually active. This receptivity varies with the amount of lactation; as long as the doe's mammary glands are in "heavy milk," she will not be sexually active. Most breeders wait until six to eight weeks after kindling; rebreeding one week after the young are weaned. Earlier rebreedings will eventually decrease productivity.

The author is Dale L. Brooks, D.V.M., Director of Animal Resources, School of Veterinary Medicine, University of California, Davis.

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TWO-UNIT, ALL-WIRE RABBIT HUTCH

The authors are Ervin L. Bramhall, Farm Advisor, Ventura County; Robert A. Brendler, Farm Advisor, Ventura County; and Robert A. Parsons, Extension Agricultural Engineer, Davis.

This all-wire, two-compartment rabbit hutch is especially adapted for a small, backyard rabbitry. The hutch is comfortable for the rabbits, sanitary, easily cleaned, and durable.

MATERIALS FOR TWO UNITS 46" x 32" EACH

Floor:	One piece of welded, 16-gauge galvanized wire, 1" x ½" mesh, 36" wide and 96" long.
Top, sides, ends, partition, and doors:	One piece of welded, 14-gauge galvanized wire, 1" x 2" mesh, 6' wide and 12' long.
Door latch:	Three feet of 9-gauge galvanized wire.
Supports:	Two 4" x 4" redwood posts, 8' long, and one 1" x 6" board, 8' long.
Shade and rain protection:	Sixty square feet of 3/8" plywood roofing; four 2 x 4's, 10' long, and one 2 x 4, 12' long.
Fasteners:	250 chicken cage clips (special pliers are needed to apply these).

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CONSTRUCTION

Floor: Place the ½" spaced wires up so that there will be a maximum of bearing surface for the rabbits' feet. Bend up the edges of the 1" x ½" mesh wire to form a 2" vertical rim all the way around. Clamp wire between two 2 x 4's and hammer wire to bend and form rim.

Top and sides: Lay the 1" x 2" mesh wire on a flat surface and cut at 92". Make a 60° bend 22" above one edge to make a flat cage front and to form the rounded roof.

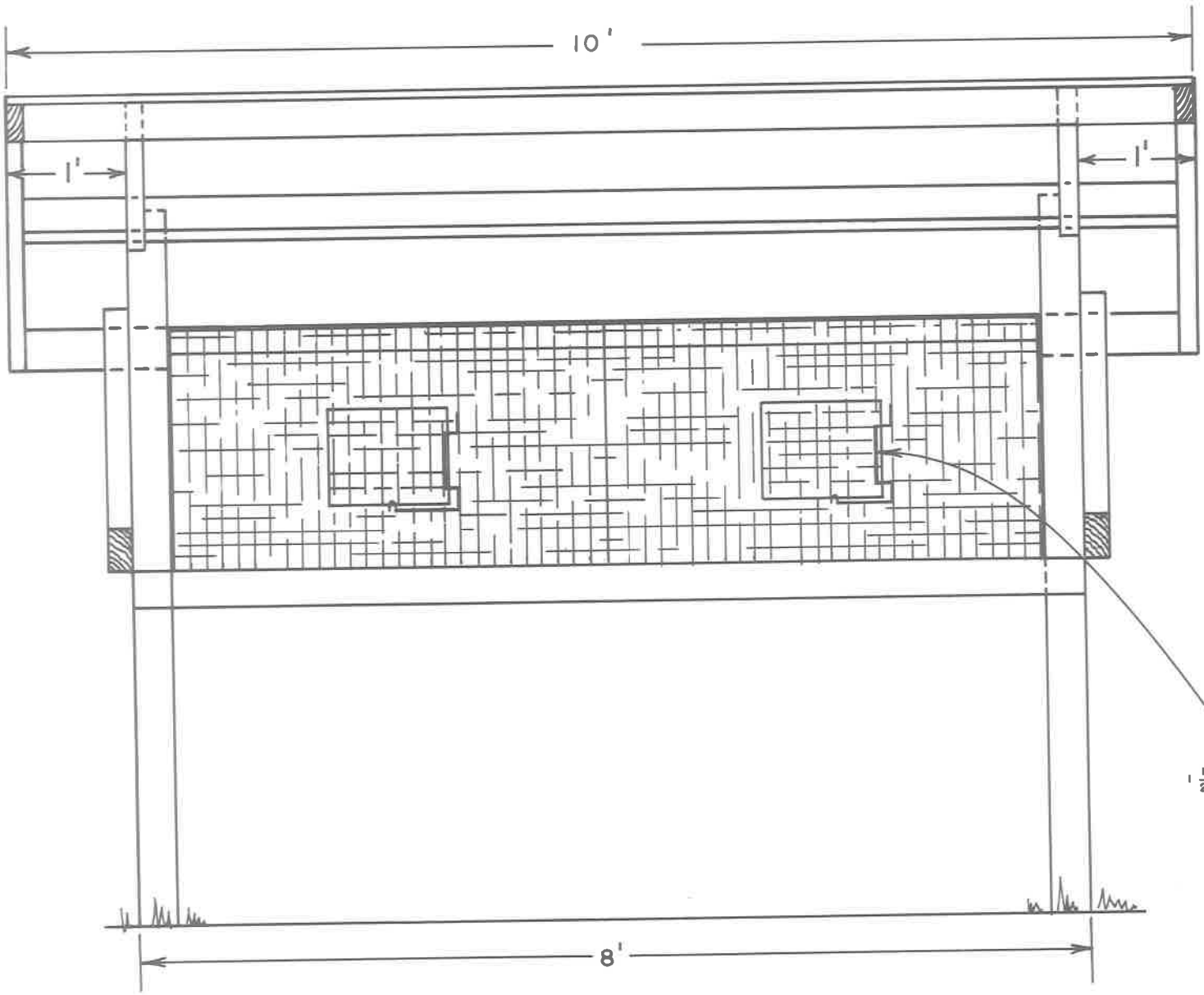
Partition and ends: The partition and ends are cut from 24" x 32" sections of the 1" x 2" mesh wire. Assemble unit with chicken cage clips 2" apart. Be sure to install center partition before the floor is fully attached.

Doors: After assembling the unit, cut an opening (17" horizontal and 14" vertical) in the horizontal center of each hutch. Make the bottom of each opening 4" from the floor. Doors for these openings are 15" x 18" and hinged at one vertical edge with chicken cage clips.

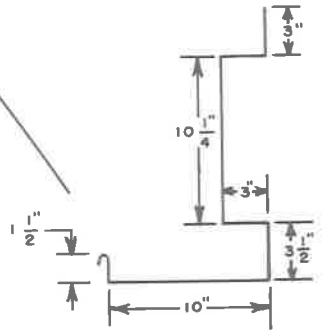
Supports: Each pair of hutches is supported at the ends by two 4" x 4" redwood posts placed at least 24" in the ground and a 1" x 6" floor support nailed to the posts. Bevel the top of the floor support to eliminate accumulation of rabbit manure.

Weather protection: Unless these hutches can be placed inside a building or shed, it is advisable to attach a plywood or metal shed roof to the supporting posts as shown in the diagram. Because rabbits need protection from disturbing activities of cats, dogs, and small wild animals, all hutches should be in an enclosure of poultry netting or lath. If the enclosure is incorporated with the shed roof, it can be closed overhead as well as on the sides. Construction of the enclosure is simplified if it is against a wall or in a corner formed by walls or buildings.

Door latch: Each door is held closed by a wire latch as shown in the diagram. All short sections of the wire door latch are 3" between right-angle bends. The handle is 14" long and the wire holding the door closed is 10" long. The handle serves as a spring when hooked under the cage wire.

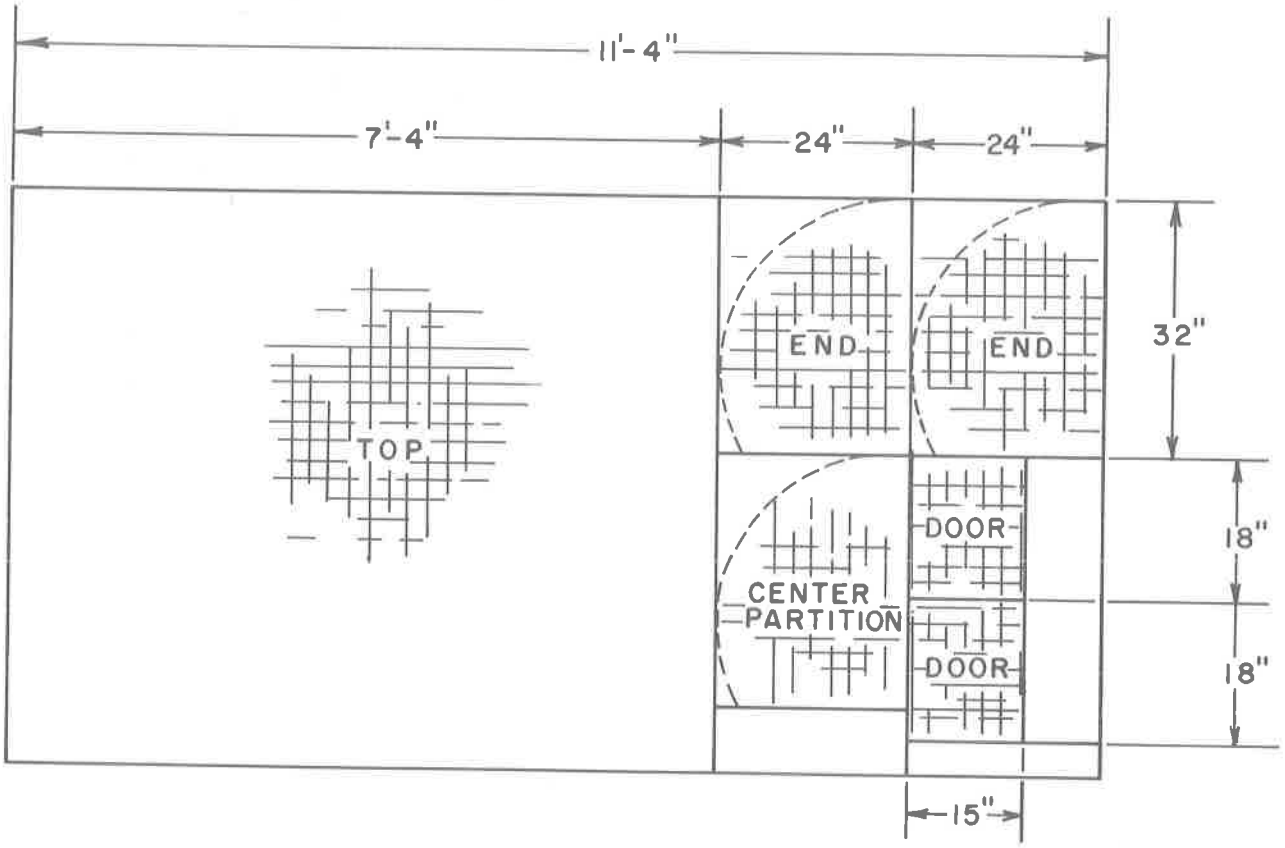


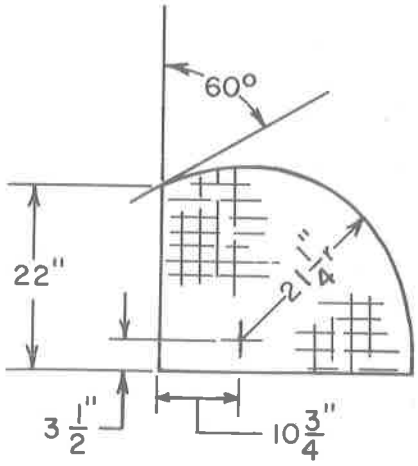
NOTCH 4'x4' POSTS



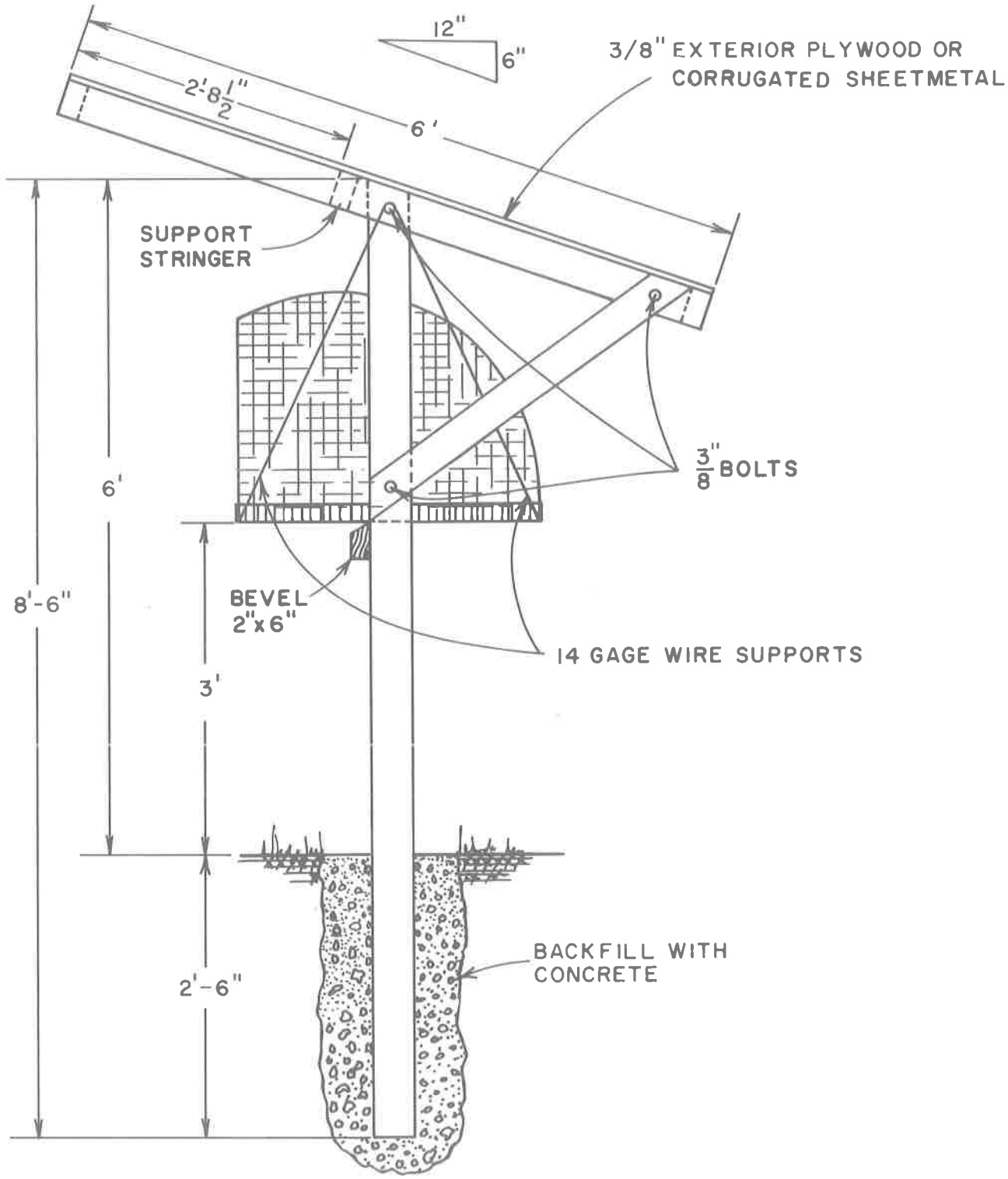
LATCH DETAIL

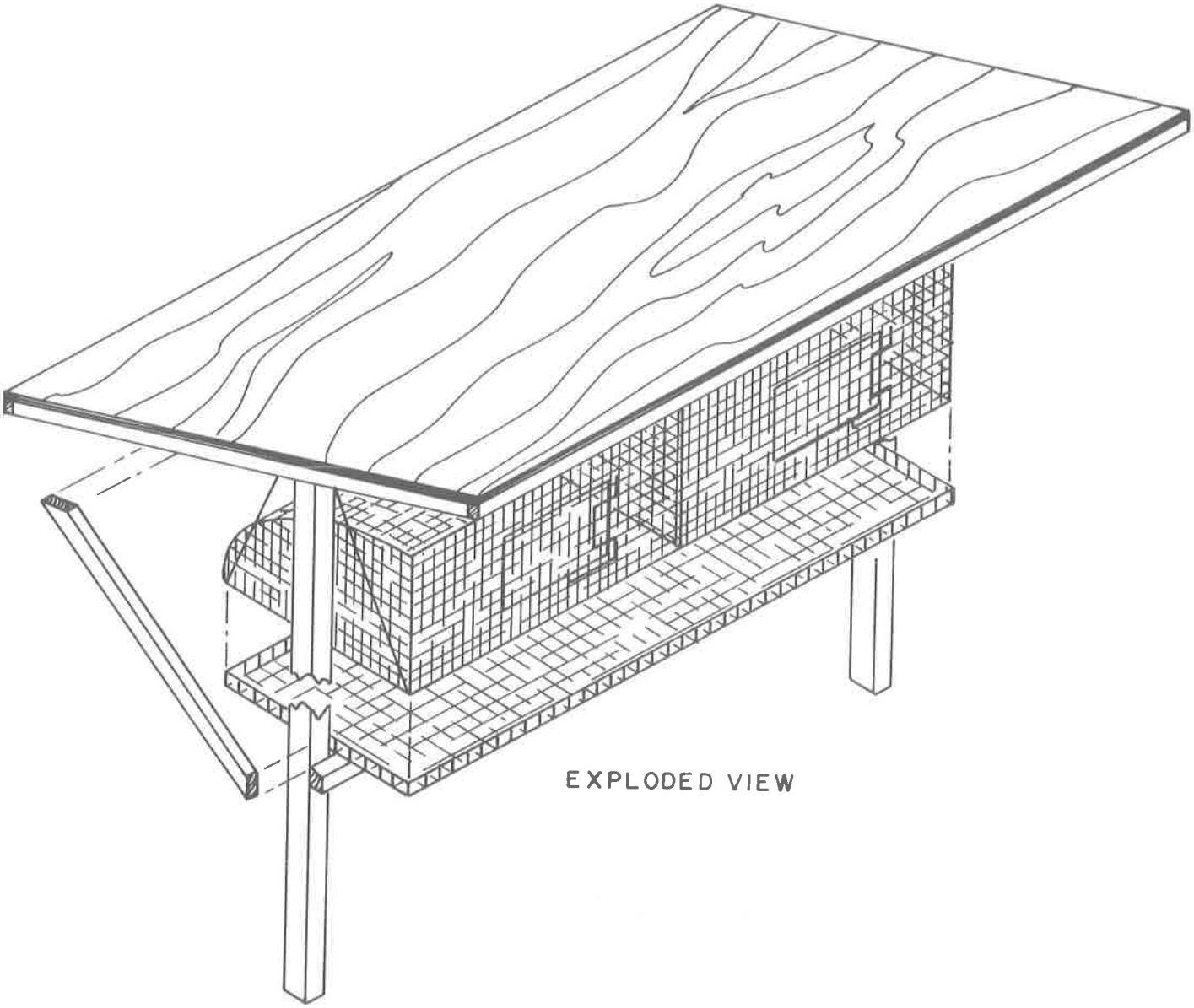
WIRE MESH CUTTING DIAGRAM





PATTERN FOR SIDE OF CAGE AND CENTER PARTITION


12"
6"
3/8" EXTERIOR PLYWOOD OR
CORRUGATED SHEETMETAL
2'-8 1/2"
6'
SUPPORT
STRINGER
3/8" BOLTS
6'
8'-6"
BEVEL
2"x6"
14 GAGE WIRE SUPPORTS
3'
BACKFILL WITH
CONCRETE
2'-6"



EXPLODED VIEW

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Coöperative Extension work in Agriculture and Home Economics, College of Agriculture, University of California, and United States Department of Agriculture coöperating.
Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914.
J. Earl Coke, Director, California Agricultural Extension Service.

You, Too, Can Dress Rabbits

R. A. BRENDLER

Agricultural Extension Service
College of Agriculture
University of California

You, Too, Can Dress Rabbits

Frank Peterson had a fine 4-H rabbit project of 15 good New Zealand white and California does. He made a nice profit last year, but during the past few months the cost of feed had risen. After Frank paid his monthly feed bill out of his income from fryers there was not much money left. When he did some careful figuring he found there was only enough to allow himself 35 cents an hour for the time he put in on his rabbit project.

Frank knew this was poor business. He could make twice that much by working for someone else, and he wouldn't have to worry about sore hocks, bloat, breeding troubles and a lot of other details that bother a young man in the rabbit business. But he liked rabbits. He liked being in business for himself. He enjoyed the compliments and encouragement from his parents and his 4-H leaders.

Frank was doing a good job. He studied all the literature on rabbits he could find. He owned good rabbits and knew they were doing well. His records showed that the average production per doe per year was 110 pounds of live-weight 4-pound fryers. He was selling a pound of live-weight rabbit for every 4½ pounds of feed he bought. He knew he was already doing better than most rabbit breeders.

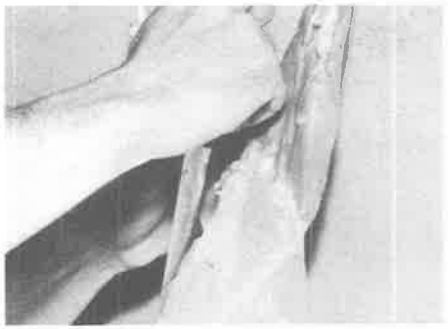
Frank had a real problem. A possible answer came when Mrs. James, who lived across the road, called him on the telephone. She wanted two dressed rabbit fryers for dinner Sunday. However, Frank had not learned to dress rabbits. His father had always dressed the few they had used at home, and selling rabbits live-weight to the pickup man was the easiest way for him to market his fryers. Before answering Mrs. James he hesitated a moment. He thought about the difference in the value of a dressed rabbit as compared with a live rabbit.

The author is farm advisor, Ventura County

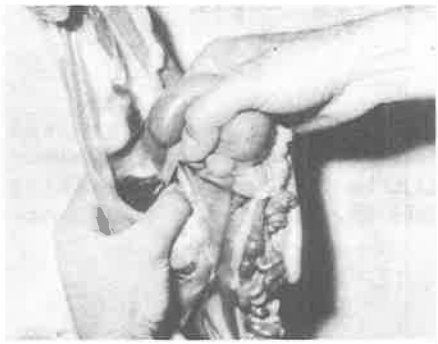
the neck he was able to do it quickly. He noticed that unless the head were cut off as soon as possible after breaking the neck, blood would clot around the neck. This was hard to wash off. He found, that in removing the intestines he could save tearing out the liver if he placed his left thumb over it as he pulled out the intestines and stomach with his right hand. Removing the gall bladder was tricky at first, but by studying just how it was attached, he was soon doing it quickly and neatly.

He found that his customers were more pleased with his fryers if they were properly molded or shaped after cooling. This he did by placing the rabbit in a natural resting position in a tray or basket that would allow drainage. Some of his customers wanted their rabbits cut up ready for the frying pan. He learned to do this and to pack the pieces in paper cartons.

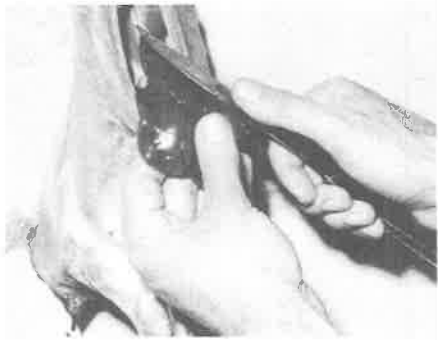
Frank made his rabbit project profitable, and he had the pleasure of learning several new skills, following Mrs. James' original order. Six months later



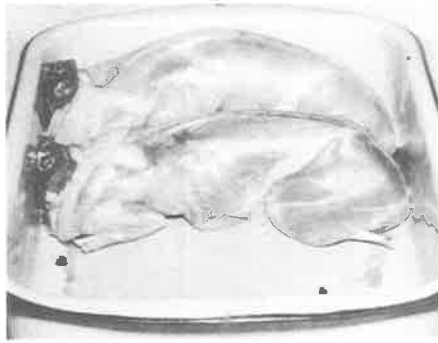
13. Slit down belly, taking care to avoid cutting bladder, intestines or stomach.



14. Pull out insides by grasping stomach and holding liver in place with thumb of other hand. Leave kidneys, liver, heart, and lungs in place.



15. Carefully remove gall bladder without cutting or breaking it. The green bile of the gall bladder is bitter. It must not be spilled on the meat.

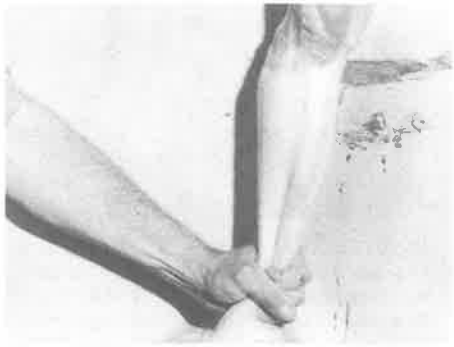


16. After washing in cold water place the carcass (killed rabbit) in a pan or wire basket in a natural position. The carcass may be left in cold water as long as 15 minutes for cooling.

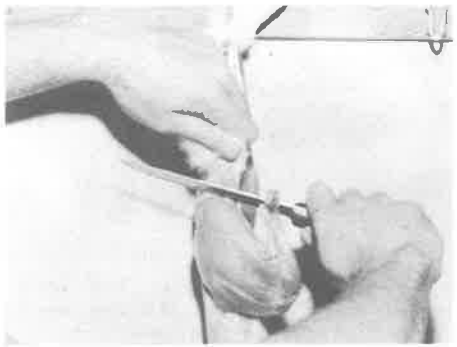
7. Tear hide from tail and vent by working fingers between hide and body ahead of tail and over rump.

8. Pull hide from free hind leg. First force fingers through between hide and body.

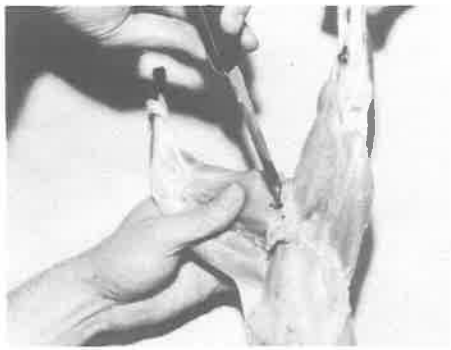
9. By cutting as shown at this stage of skinning, the fat of the flanks will be left on the rabbit and not on the pelt.



10. As soon as the whole pelt can be held with one hand, one strong pull will remove it. Place pelt on skin stretcher. Dry the skins indoors.



11. Cut off tail.



12. Cut bone between hind legs (pelvic bone) by inserting knife from above and prying out.

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It was some time later in the evening when he told his dad about the deal. Dad was proud of his son for taking advantage of the chance to make some extra money on his project; however, Dad was not proud of his own knowledge and skill in killing rabbits. He said, "Son, all the rabbits I have killed have been used right here at home. I'm not sure that I do a good enough job for a customer. People are pretty particular about buying food."

In the silence that followed, Frank thought of Farm Advisor Smith who had helped him when several bad cases of ear canker had him worried. He would phone the farm advisor tomorrow.

When Mr. Smith heard Frank's story he said: "Frank, you're lucky. Tomorrow morning the Cotton Hollow 4-H Club is having a project tour and I happen to know that Jim Lepus is going to demonstrate just the thing you want to know. Their club is not far from your place. I have seen Jim's demonstration and I know that if you will watch it and talk with him, you can go home and dress those fryers for Mrs. James." Frank felt better.

Jim Lepus was two years ahead of Frank in school. Frank had always wondered how Jim made so much money on his rabbit project. He said to himself: "Mrs. James' fryers will get me started dressing rabbits and then I can make as much money as Jim does."

That evening Frank looked up the market reports and found that a rabbit worth 90¢ alive was worth $1.20 dressed...30¢ extra per fryer. A doe produces 25 fryers per year...$7.50 extra income per doe per year. Frank almost forgot the pelts. They are worth about 5¢...another $1.25 per doe per year.

At the demonstration Saturday morning Frank was very careful to watch every move made. After the demonstration Jim said: "It was less than a year ago that I learned to kill and dress rabbits. And I started after seeing a demonstration like this one. Each of you can learn to dress your own rabbit fryers. Just to show you that you can learn, I want one of you to dress the fryer in that box. I'll help you along when you get into trouble." Frank was the first to volunteer.

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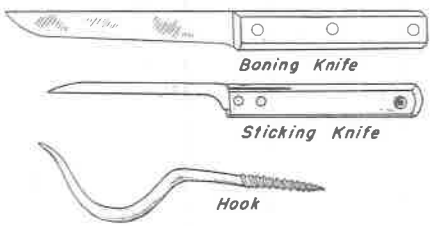

3 feet long stood near the hooks. On the table were two large buckets of clean cool water. One bucket was for washing blood from hands and knives, the other for washing and cooling the dressed rabbits. Several wire hide stretchers were hung ready. On the table was a coffee can of clothes pins for fastening the hides to the stretchers. Under the hooks was a washtub to catch the blood, insides, heads and feet. A simple carrying box held the fryers to be killed. It was made by placing a hinged welded wire cover over a fruit box. Two knives were used, one a chicken sticking knife and the other a boning knife. Frank noticed that they were kept very sharp.

Frank went to work on Jim's rabbit. Everything seemed very awkward to him, and much of the time he did not know what to do next. However, Jim was very helpful and as a part of the demonstration he had displayed a large chart showing the steps to be followed.

That afternoon Frank killed one fryer for use at home. Then he killed two for Mrs. James. She was well pleased.

During the next few weeks he found a market for more dressed fryers, and as he gained experience, the job became easier and faster. If you were to call on Frank today and ask to buy a fryer rabbit he could, in a few minutes, kill and dress one for you.

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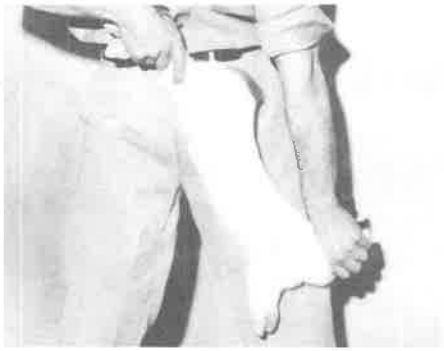

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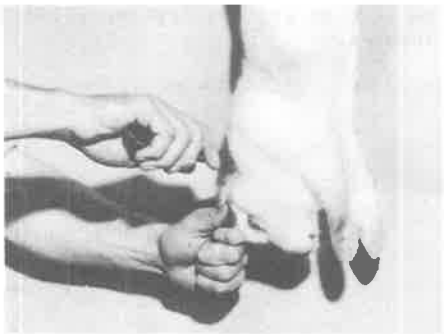
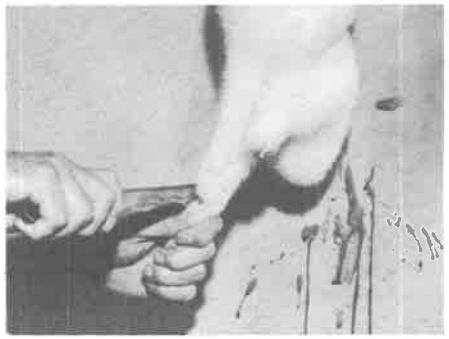
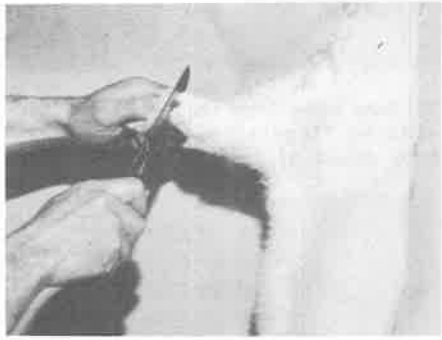


2. Hang the rabbit by the left hind leg, and cut off the head immediately. Any delay will cause blood to clot where the neck was broken. Cut close to the head and through the place where the head was broken away from the neck.



3. Cut off both front feet using a boning knife.

Steps In Rabbit Dressing



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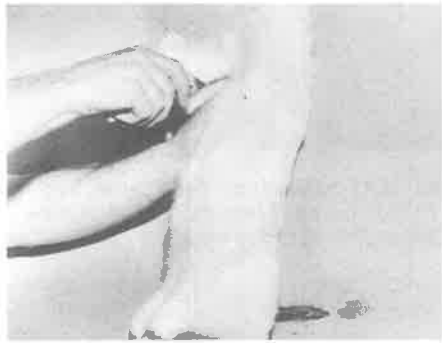

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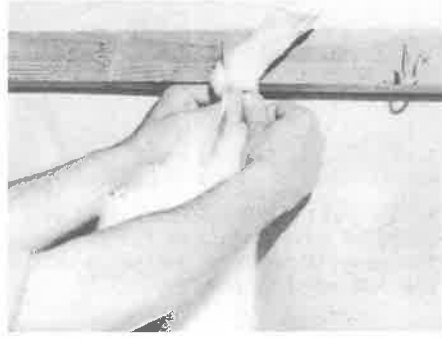

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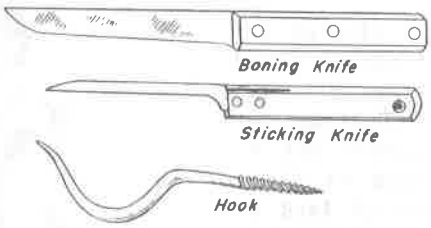

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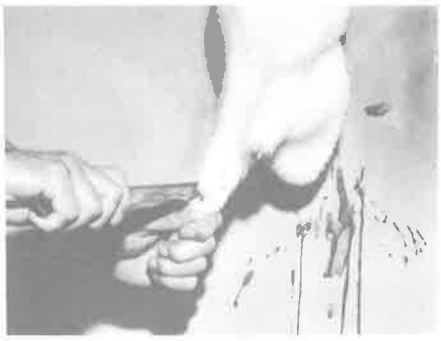

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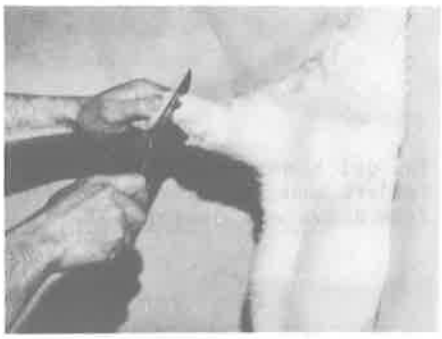

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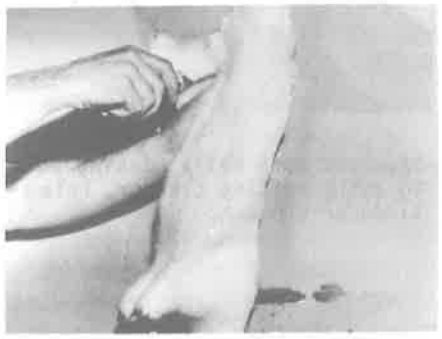

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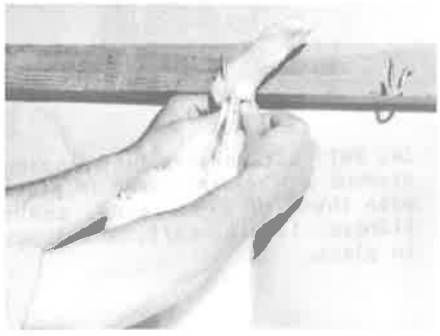

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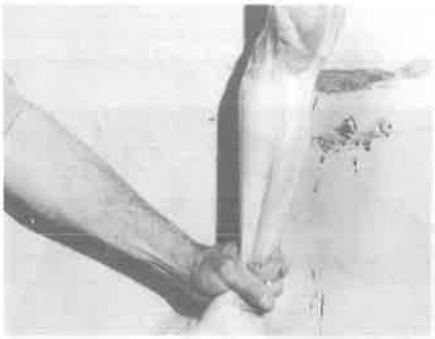

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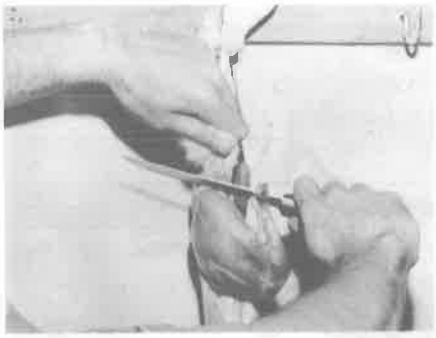

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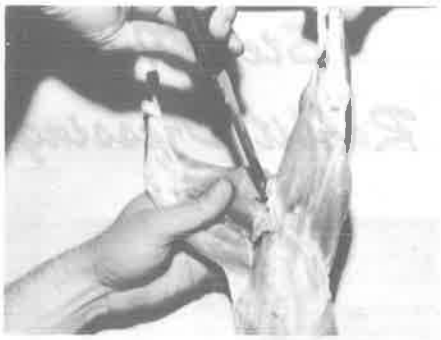

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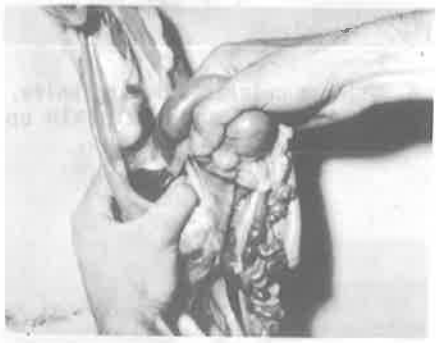

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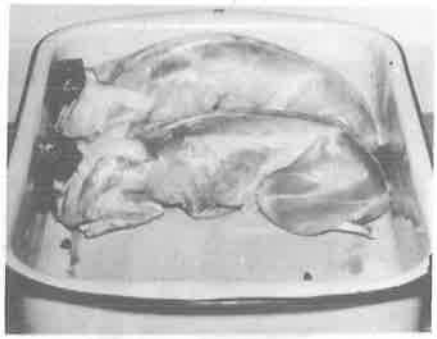

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YOUR 4-H Rabbit Project

In Your Rabbit Project You'll Want to Know

The author is farm advisor, Ventura County

Your 4-H RABBIT PROJECT

R. A. BRENDLER

From a rabbit meat production 4-H project, you can learn much about livestock in general, and you should make some money. You will do best if you will learn all you can about rabbits. Your success will depend on your doing things the right way and at the right time.

What Will It Cost?

Your rabbit project is an important business. You are going to have to invest some money. Where are you going to get it? If you can earn all of it—fine; but borrowing a part of it is also good business, and by borrowing you can start out with a larger project. You should pay interest on the borrowed money just like other businessmen and farmers.

Each good doe is going to cost you about five dollars. The hutch and equipment for her and her young will cost about eight dollars new. Do not use up all your money on stock and equipment. You are going to have to feed those rabbits for a while before you have any income. This will cost you $1.20 to $1.50 per doe per month.

How Many Make a Project ?

If you have never raised rabbits before, you have much to learn. Start with a project small enough so the mistakes you may make in learning will not cost you too much. If your project is too small, however, you are not going to make good use of your time. If you are 10 or 12 years old, a good-sized project is two does, and an arrangement whereby you can share a buck. If you are older, try four does and a buck.

In any case, make your project a growing one. As soon as your does have shown that they can produce good litters, start saving some of the best-looking young does for breeding stock. Save them from the best does only. When you make some money, consider investing it in a new hutch.

Adjust the final sizes of your project to the time and space you have for rabbits. If you have ten does, you would spend around three hours a week on them. Each doe will require about 20 square feet of yard space.

What Kind to Buy?

Breeds

Meat and hides are what you are going to sell. Rabbits that grow fast make the most meat from a sack of feed. The ability to produce meat rapidly is inherited. Ask the man from whom you buy your doe how many fryers her mother produced last year. Insist on a doe whose mother raised at least 25 fryers in a year.

New Zealand Whites and Californians are the two most popular breeds. They both have white pelts

(skins with fur on) and these sell for more than colored ones. These rabbits are of medium size and grow rapidly. Buy your breeding stock from a reliable breeder, one who is making money by producing rabbit meat. You will do well to start with junior does between two and six months of age.

Judging

Judging rabbits requires a lot of experience. As a beginner you will have to rely on your 4-H leader or the man from whom you buy your rabbits to tell you if you have a good one. But you can look for diseases, parasites, and defects. Look for ear canker, sore hocks, buck teeth, and woolly fur. Do not buy a rabbit having any of these troubles. Be sure that your breeding animals come from stock that does not produce woolly rabbits.

What Is a Good Doe?

Your best does should meet these requirements:

- Remain in perfect health
- Breed regularly throughout the year
- Take good care of their young
- Provide enough milk for rapid growth of nursing rabbits
- Produce meat and fur of a kind the market wants
- Continue high production through two or three years
- Raise at least 25 rabbits up to fryer size each year

Not many does will do all these things. Even under the best of care, only those that inherit the ability to meet these requirements have a chance to do so. Poor stock cannot do it. That is why you must start with good breeding stock. Then if you will save breeding stock from only your best does, your stock will improve.

Always have a few junior does ready to replace the does you cull out. In general, for each doe you keep, at least one junior will have to be raised each year. If you have good breeding stock, and you save only the best junior does from the best proven does, you may be able to sell some juniors for breeding stock.

Housing

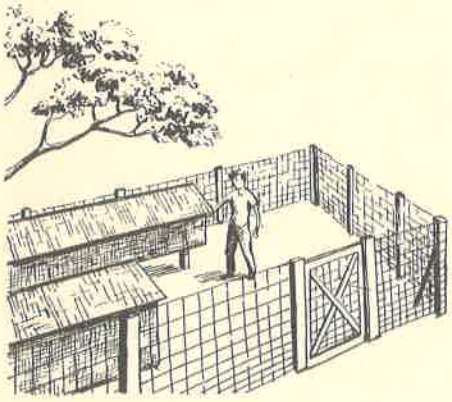
Your Hutch

A good rabbit hutch is self-cleaning and easy to maintain, yet economical to build. It is convenient for the rabbit raiser and comfortable for the rabbit. It will keep the rabbits in and protect them from dogs, cats, and wild animals as well as from rain, wind, heat, and cold. The floor should be of $\frac{5}{8}$ inch hardware cloth or 1 inch $\times$ $\frac{1}{2}$ inch welded wire. All other open areas should be of 1 inch $\times$ 2 inch or 1 inch $\times$ 1 inch welded galvanized wire. Chicken wire is not good. Protect all wood by wire or metal because rabbits eat wood.

Each hutch compartment should have a floor space of at least 9 square feet. The top of the hutch should be at least 18 inches above the floor in

front and 16 inches above the floor behind. Good hutches are taller than this.

Doors need to be large enough so that feeders and nest boxes can be easily taken in and out—no smaller than 20 inches wide and 16 inches high.



Build a fence around your hutches.

The floor of the hutch should be at the height of your waist. Support your hutches by as few legs as possible to make cleaning up easier. The use of posts set in the ground is good.

Protect Your Rabbits

Keep your rabbits out of the wind. A lattice fence 6 to 8 feet high makes a good windbreak. Buildings and hedges will also break the wind. An overhead lattice work or trees will help to protect your rabbits from the sun.

Dogs, cats, and wild animals, such as skunks, opossums, weasels, gopher snakes, and coyotes, also like rabbit meat. You will have to protect your rabbits from them. Rabbits are by nature timid and easily excited. Excitement will cause does to neglect their babies, and may cause any rabbit to injure itself. Your rabbits need protection against disturbance, as well as from direct harm. Try to put your rabbitry inside a good fence.

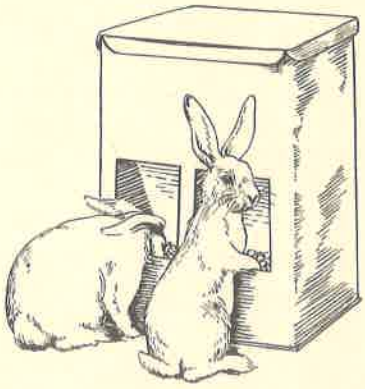
Protect Feed and Tools

You will need a clean, dry, well-ventilated place to store feed, hides, and equipment. Arrange your rabbit room, which may be only a corner of a garage or a tool shed, so that there is a place to put all of your equipment and your records.

Equipment

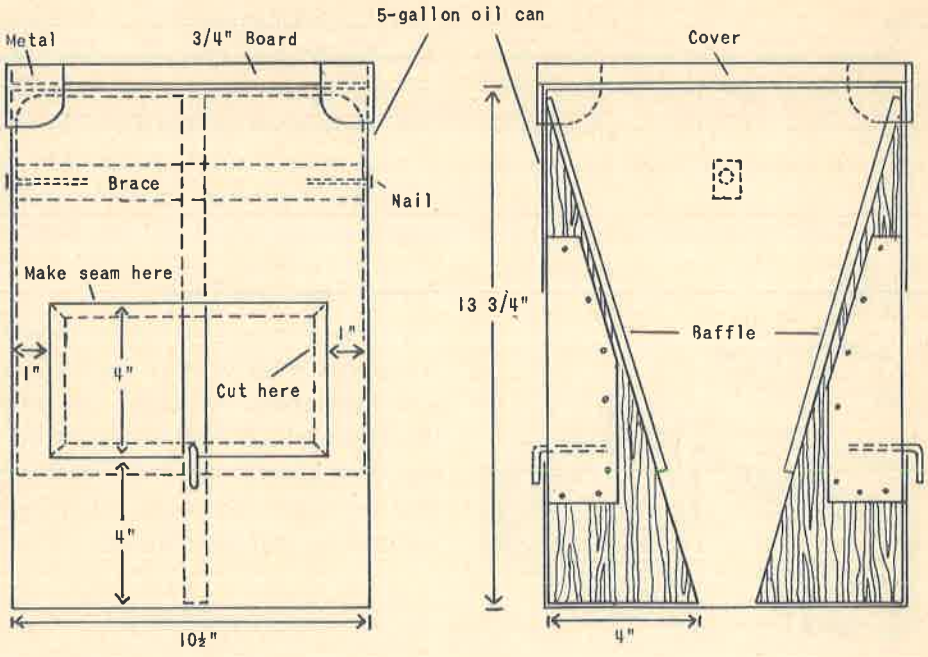
What You Need

For equipment, you first need feeders, waterers, and nest boxes. Later, you can buy or make tattooing boxes, cooling baskets, brushes for cleaning floors, rakes and shovels for handling manure, hand tools for building and repairing, tattooing equipment, carrying boxes, knives



Use a self-feeder for young rabbits.

MAKE YOUR OWN SELF-FEEDER



This self-feeder is made from a 5-gallon oblong oil can and is designed for feeding whole grain or pellets. It will hold about 15 pounds of feed, enough for the average doe and her litter one week, provided the rabbits have all the alfalfa hay they desire. The feeder was designed by the U.S.D.A. Rabbit Experiment Station at Fontana, California.

In making the hole in the side of the can, cut the metal along the dotted line in order to make a good seam around the edge of the opening.

Use the metal from the openings to cover the triangular pieces of wood which support the baffles.

The cover is a ¾" board; but other material may be used. If more than one kind of feed is being fed, partitions may be added.

One of these completed feeders is shown in the drawing on page 5.

for dressing, racks for dressing, skin stretchers, wire cutters for trimming buck teeth and toenails, scales, and perhaps a few other items.

Your Feeder

The simplest feeder is a coffee can nailed to a board to prevent tipping. A small crock is better.

These are ideal for those bucks and resting does which must be hand-fed a limited amount of feed daily. However, these do not serve well for feeding a doe and litter, or a pen of fryers. The small rabbits get into these simple feeders and waste feed by spilling it or getting it dirty with manure and urine. Rabbits do not enjoy such dirty feed; if they do eat it, they may get sick.

Three kinds of nest boxes—apple box, nail keg, and half-covered.

Use self-feeders for your does with litters and for your pens of fryers. You will find many kinds of self-feeders on the market. They should be large enough to hold about a week's feed supply for a big litter. The best feeder does not need to be filled often. It keeps the feed clean without allowing rabbits to spill it. Look at the ground under your feeders. The feed you see there is wasted. You have paid for it. It represents money lost, because you will have to use or sell that feed as manure—not as meat.

You can make a good self-feeder from a square five-gallon oil can.

Waterers

Crocks or a dewdrop system are best for watering rabbits. Tin cans are too often tipped over and too hard to keep clean. Crocks should be large enough so rabbits never run out of water. You will have to clean them and fill them daily. This task will be made easier if the water crocks can be cleaned and filled without opening the door.

A dewdrop type of water system will save you time, especially when you have as many as 10 does. The dewdrop valve should be installed 9 inches above the floor and close to one of the walls. The float tank should be located about 18 inches above the valves.

Nest Boxes

A baby rabbit is without hair, is blind, and unable to run around. It needs the protection of a good nest box. Whether it lives and makes you money or dies at your expense may depend on the kind of nest box and nesting material you provide.

A good nest box will keep the babies warm, allow drainage of moisture, allow ventilation, and keep the young ones in the nest box until they are large enough to get back in by themselves. It will also be large enough for the doe's comfort. In hot weather a simple uncovered box with sides at least 6 inches high is good and so is an apple box with an opening in one corner for the doe to enter. In the cooler part of the year, use a box which is at least half covered.

Place your nest box in the hutch, or build it there, so that the lowest part is toward the rear. If the front or open end is low, the babies are likely to make their nest right at the opening rather than in the more protected part of the box. For all types of nest boxes, make the edge of the opening 6 inches above the floor and cover all exposed edges with strips of metal.

Tattooing box and carrying box. You will need these as your rabbitry gets bigger.

Tattooing Tools

A tattooing box is useful not only for tattooing, but also for treating rabbits for ear canker.

For tattooing you may use a regular set with tattooing pliers, but you can also do very well with a home-made needle, a tennis ball and a supply of rubbing alcohol, absorbent cotton and India ink. Make your tattooing needle by grinding the eye end of a large needle back to where two points are made. Then wind fine thread through and around the eye so as to allow the points to stick out about $\frac{1}{32}$ of an inch.

Skin Stretchers

Skin stretchers can be made from number 8 galvanized wire or be purchased at feed stores. Allow 5 feet of wire for each stretcher.

Cooling Basket

A cooling basket can be made of $\frac{1}{4}$ inch hardware cloth. Use it during hot weather—do not leave baby rabbits in the basket for longer than six hours. The basket is 15″ long, 6″ wide, and 6″ deep.

Plans

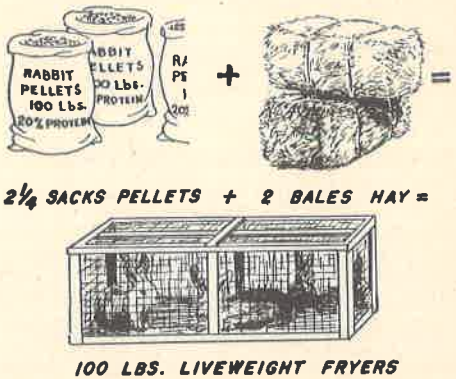
Plans for rabbit equipment are in a U.S.D.A. Farmers' Bulletin on rabbit production. You can obtain a copy from your farm advisor.

Feeds and Feeding

Feeding Pellets and Hay

Home-grown green feed and hay are your cheapest feeds. However, in order to get the fast gains necessary for profit, you will have to feed some concentrates such as whole grain and pellets. Feeding hay and green feed is highly recommended, but you can raise rabbits on green pellets alone.

If you grow your own green feed and hay, give does with litters and all growing fryers all the hay and pellets they want. A pellet containing no alfalfa and 20% protein may also be fed with hay. Look at the tag on the feed sack for the percentage



Feed requirements.

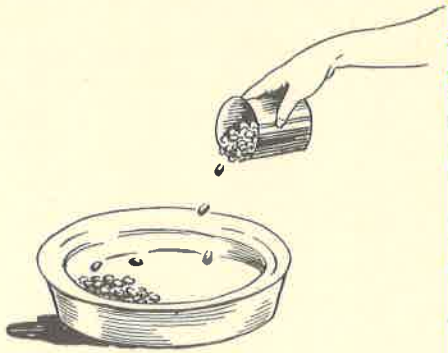
of protein. As much green feed as the rabbits will eat in 20 minutes once a day is advisable but not essential. When feeding pellets containing no alfalfa, hay must also be fed.

How Much to Feed

Your resting does, juniors over four months old, and all bucks must not be allowed to eat all of the grain or pellets they want. They will get too fat, and then they will not breed. They should receive only enough grain or pellets to keep them from getting too thin. Many resting does and mature bucks will do well on good alfalfa hay and green feed with no grain or pellets. Junior does and junior bucks (weaned rabbits under six months of age) should be fed all the hay they want and only as much of the pellets as they will eat in 15 minutes once a day.

Feeding Pellets Only

If you have no home-grown or low-cost alfalfa hay, use green pellets which are about 50 per cent alfalfa and at least 16 per cent protein. Feed nursing does and growing fryers all they want. When hay is not being fed, the amount of green pellets to feed is a real problem. A mature rabbit should have from four to six ounces once a day. You will have to decide the amount to feed. Consider the size and the condition of the rabbit. For those rabbits that are not nursing, feed crocks should be empty most of the time. Find yourself a small can that will hold about two ounces of feed. Use it to measure



Measure feed for resting does and bucks.

feed for each rabbit being fed a limited amount of feed.

Hay

Hay for rabbits should be fine-stemmed and of green color. If hay is grown on the ranch where you live, try to pick out the very best for your rabbits. Alfalfa is easy to grow. A small patch well irrigated and cut for hay and green feed will be good for your rabbits and save you money.

Green Feed

Green feed, when used, should be fed daily but in small amounts—what the rabbit will eat in about 15 minutes. Never feed large quantities of green feed at one time. Use a manger; do not throw green feed on the floor of the hutch.

Rabbits like alfalfa, sudangrass, young grass of any kind, vegetable tops, root vegetables, and some weeds. Malva or cheeseweed is a weed that rabbits like very much and it is often plentiful in early spring. Avoid weeds that have milky sap, an unpleasant odor, an unpleasant feel, or weeds that have

Provide fresh water and salt.

berries on them, or weeds that other animals do not eat—they may be poisonous.

Salt

Spools of salt and fresh clean water should be where rabbits can get to them at any time.

Buying and Storing Feed

Buy pellets in 100-pound sacks. Store your feed in a covered barrel or garbage can. Feed stored at home in the sack likely will be wasted by rats, mice, or chickens; often the sack will be damaged. Store hay indoors and handle it carefully so as not to lose the leaves.

Store feed in barrel or garbage can.

Care and Handling

Even if you have the very best equipment, there will be work to do. Cleaning up, feeding, breeding, repairing hutches, preparing nest boxes, keeping records, and moving the rabbits are all things that you have to do correctly and at the right time. When and how you do these things will have a lot to do with how much money you make.

Sanitation

Keep things clean. Be particular about this. Manure or hay on the floor of a hutch should cause you to worry about possible sore hocks and diseases. A doe in an unclean hutch with dirty feeders and water crocks may not die right away, but she is not going to make you any money.

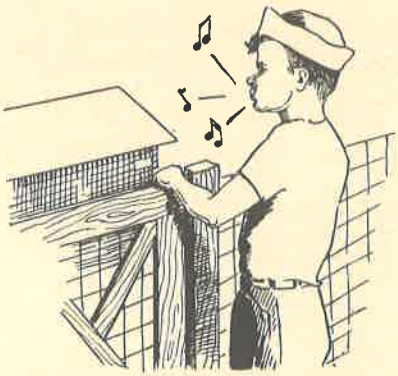
Handling

Rabbits are easily excited, and you are losing money when they are in such a condition. Learn to enter your rabbitry and work among your rabbits without exciting them. As you approach your rabbitry, whistle, speak to your rabbits, or knock on the door or gate to let them know you are coming. Otherwise you will excite them and they will thump and stampede. In the rabbitry, move slowly. Make no startling noises.

You will need to handle rabbits in order to examine them for diseases or injuries and to move them from

one hutch to another. Learn to do this so as not to injure or excite the rabbit. Learn to keep from getting scratched or bitten. Rabbit ears are not strong enough to use as handles. Pick up old rabbits by grasping the hide over the shoulders. If the rabbit is to be held for a moment, place the other hand under the rabbit's hindquarters to take the weight off its hide.

If you wish to carry the rabbit any distance or hold it for a while, place it under your arm. If fryers are picked up like we pick up old rabbits your fingers will bruise the meat.



Let them know you are coming.

Pick up fryers by placing your hand over the hindquarters and your thumb and fingers just forward of the hind legs.

HOW TO PICK UP AND CARRY RABBITS

Pick up mature rabbits by grasping skin over the shoulders.

Support weight of rabbit by placing one hand under hindquarters.

Pick up fryers by placing hand over back and closing thumb and fingers just forward of hind legs.

If the rabbit is to be held for some time place under arm. This leaves one hand free.

Cold Weather

Dry rabbits can stand a lot of cold weather, if strong drafts do not strike them. Drafts from under the rabbits are particularly bad. Protect baby rabbits from the cold with a good nest box and plenty of nesting material. Clean, soft shavings or clean straw make good nesting material. Make sure that the baby rabbits are not resting on the floor of the nest box, as it is cold there. Put some nesting material under them. Use a covered or half-covered nest box in cold weather.

Hot Weather

In hot weather, death losses are common and expensive. Shade the hutches if possible. Sprinkle water on the roof and on the ground around the hutches. If a rabbit looks weak and tired, place a wet sack in the hutch, or move it to a cooler location. Use open nest boxes. Let the breezes through. Be sure there is plenty of drinking water. Extreme heat is an emergency calling for your presence in the rabbitry.

Keep them dry.

Keep them cool.

Look After the Young

Provided with a good nest box, plenty of nesting material, and the protection of a good hutch, most does will take good care of their young. However, here are some things you must do faithfully:

- Place a good nest box with nesting material in the hutch 27 days after the doe is bred.
- Within 36 hours after the young are born (kindled) carefully count the babies an take out the dead ones.
- Reduce litter size to seven, eight, or nine according to age of doe and what you know about her ability as a mother. Eight is a good size.
- Examine nest box every two or three days for dead rabbits and condition of nest. In cold weather you may have to push extra nesting material under the rabbits.
- When babies are about four weeks old remove the nest box. Leave it longer in cold weather. Thoroughly clean the nest box and put it away for use with another litter.

Breed the doe at six to eight weeks after kindling. This will be at weaning time, or a week before weaning time.

Leave fryers with the doe until they reach fryer size and age—four pounds at eight weeks. Wean breeding stock at eight weeks of age. Weaning is done by simply removing the youngsters to another hutch.

Breeding

Unlike many animals which breed only at certain times, called heat periods, and unlike animals that will not breed while nursing, rabbits will breed at almost any time. You have almost complete control over the time of breeding. That is an important responsibility. Many 4-H projects have failed because members have neglected to breed their rabbits on time. Many litters have been lost because no record was made of the breeding, and the nest box was not ready at kindling time.

When a doe is to be bred, take her to the buck's hutch. Mating is usually over in a few minutes. Successful mating is finished when the buck falls off the doe. Unless this happens, consider the mating a failure, and try again in a day or so. Sometimes the doe will not allow the buck near her. When this happens try again in a day or so. When mating is completed, return the doe to her hutch immediately and mark the breeding date on the hutch card.

Does may be held so they will be forced to accept the buck. Although such forced matings result in babies less often than natural matings, it is a good thing to know and to use on some of your does.

The buck may be used two or three times a week. Keep one buck for every 10 does or less.

Gestation Period

The gestation period for rabbits—that is, the time between mating and birth of babies—is about 31 days. If a doe has not had babies within 34 days after breeding, have her bred again right away. You have already lost a month of time and the feed she ate. Allow no further delay.

When to Breed Young Does

Young does should be bred at six or seven months of age. Breeding too young may slow down their growth. If breeding is delayed beyond eight months, does may get too fat to breed readily.

Test Breeding and Palpating

Time and feed can be saved by test breeding or by palpating does to determine pregnancy at 10 to 15 days after mating. Test breeding is the simplest. Take the doe to a buck. If she objects to his attentions consider her pregnant—that is, she is going to have young. If she accepts him and mating takes place consider that she is not pregnant and add a new breeding date to her hutch card. This test is not 100% reliable; so place a nest box in the doe's hutch as though she were pregnant from the first mating. If she does not use it in a few days, remove it until babies from the second mating are about due.

You may be able to learn palpating to determine pregnancy by studying "Palpating Domestic Rabbits to Determine Pregnancy." Your farm advisor may have copies of this U.S.D.A. leaflet. You will likely do better to have someone demonstrate the technique to you—then it will take several months of practice before you will be sure of your determinations. Palpating means feeling, and in palpating to determine pregnancy you can actually feel swelling in the uterus caused by developing babies. Do not palpate after the 16th day. You may injure the babies. Palpating is more reliable than test breeding; learn it as soon as you can.

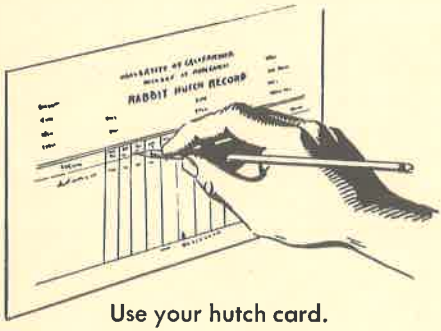
Some does will not breed and they should be butchered or sold without delay. During late winter, spring and summer, if pregnancy does not develop after three matings, get rid of the doe. In the fall, it is harder to have does become pregnant; but even then, get rid of them after four or five unsuccessful matings.

Inbreeding

Inbreeding is the mating of rabbits closely related. Some slow-growing and a few defective rabbits are expected from inbreeding. However, if you do not have a buck that is unrelated to the rest of your stock, it is better to use him than to leave does unbred. But, do not save breeding stock from such matings.

Junior Does

Junior does should be picked out at fryer age of eight weeks. Examine these young does to see that they have good teeth, straight legs, good size, and are free from diseases or blemishes of any kind. Save breeding stock only from does that have produced at least two good litters.



Use your hutch card.

Hutch Cards

Hutch cards are as much a part of your equipment as water crocks and feeders. Do not expect to succeed without them. Time and litters will be lost when hutch cards are not used faithfully. Make your own hutch cards or use those furnished by feed companies. Use a metal holder, or thumbtack the card to a board. If you do not always carry a pencil, keep one in your rabbitry.

Keep equipment and housing clean. (Note recommended height of floor.)

Woolly Rabbits

Woolly rabbits may be born in some families of rabbits that are otherwise very good. Woollies have longer than normal hair; they are difficult to skin and their pelts are almost worthless. If you find woollies in a litter of fryers, both the doe and buck have caused it, and unless you understand inheritance, get rid of the stock that produces woolly rabbits. If you have quite a number of rabbits and woollies appear, have your 4-H leader or farm advisor show you how to determine which animals are causing woollies, so you can save does and bucks that do not cause them.

Are They Does or Bucks?

You will soon need to know how to determine the sex of young rabbits. Have someone show you how, and then practice until you are sure of your own determinations.

Diseases and Parasites

Diseases and parasites are common and natural for all living things; so expect some in your rabbitry. Be vigilant in watching for diseases and keep equipment and housing clean to prevent them. Well-cared-for rabbits in clean, roomy hutches are the least likely to have diseases. Your farm advisor can supply you with information on rabbit diseases.

QUIZ YOURSELF

Have you learned about rabbits? The quiz on this page will tell you. Try to answer each question. Look up the answer in this leaflet, unless you're sure of it.

If you will cut out this page and paste it in your record book, your leader will know that you have studied this booklet.

1. White pelts are worth (more or less).....than colored pelts
2. A good doe will produce.....fryers weighing.....pounds each in a year.
3. A wire floor should be made of.....inch hardware cloth or .....inch by.....welded wire.
4. Which is best for a rabbit hutch, chicken wire or welded wire?.....
5. Each hutch compartment should have.....square feet of floor space.
6. The floor should be how high from the ground?.....
7. If resting does and mature bucks are given all the pellets they want, they will get too.....and will not.....
8. Rabbits should eat all their green feed in less than.....minutes.
9. Picking up fryers by grasping the hide over the shoulder will cause.....on the meat.
10. Fryers should weigh.....pounds at.....weeks of age.
11. Place the nest box in the doe's hutch.....days after breeding.
12. Breed each doe.....to.....weeks after kindling.
13. For breeding take the.....to the.....'s hutch.
14. Use a buck not more than.....times a week. Keep one buck for every.....does or less.
15. The birth of rabbits is called.....
16. The time between breeding and kindling is the .....period, and it is.....days for rabbits.
17. Young does should be first bred at.....to.....months of age.
18. After breeding, if a doe is going to have young, she is said to be.....
19. The hardest time to get rabbits bred is in the.....of the year.

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