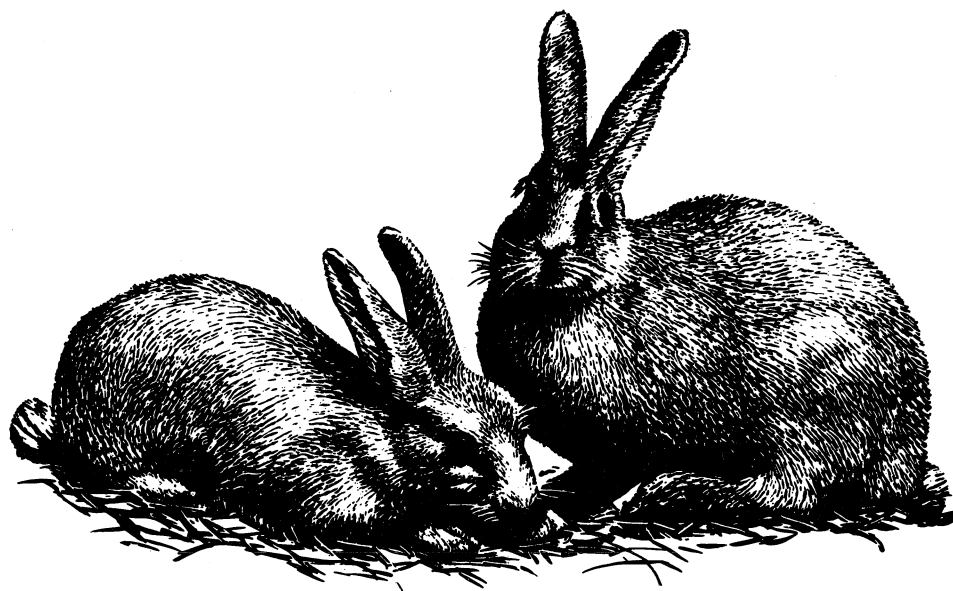


Raising Rabbits



COOPERATIVE EXTENSION SERVICE
DIVISION OF AGRICULTURE
OKLAHOMA STATE UNIVERSITY
Circular E-822

50¢



Well Constructed Back Yard Hutch

Contents

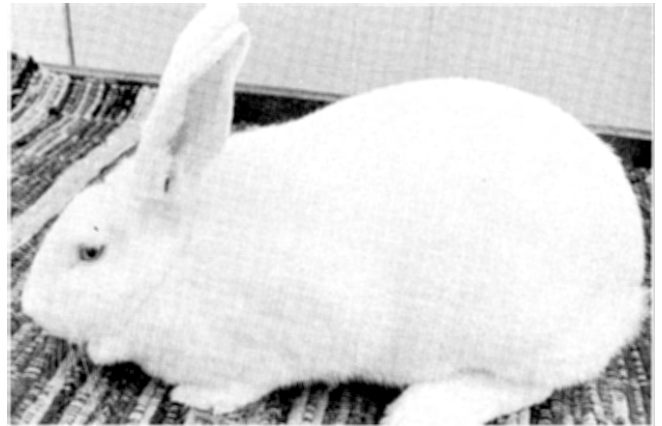
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Rabbits are raised for show, fur, home or commercial meat production, laboratory animals, and breeding stock. The number of working does will vary from one to several hundred at a single location.

The space requirements for raising rabbits are minimal. For this reason, people living in urban or suburban areas or on small acreages often consider raising rabbits as an auxiliary to their main vocation. Anyone considering rabbit production should check zoning laws and health requirements and find out if regulations would cause problems. Consideration should also be given to the fact that rabbits do require some amount of daily care so someone must be available for this duty throughout the entire year.

The raising of rabbits can be a satisfying and rewarding experience as well as adding to the family income. Rabbit meat can add variety to family meal planning. It is a highly nutritious meat, being high in protein and low in fat compared to other meats. In a young fryer the meat and cholesterol to bone ratio makes the cost per serving low.

reason for this is that the predominantly white pelts can easily be dyed a variety of colors by the fur processor.



New Zealand White

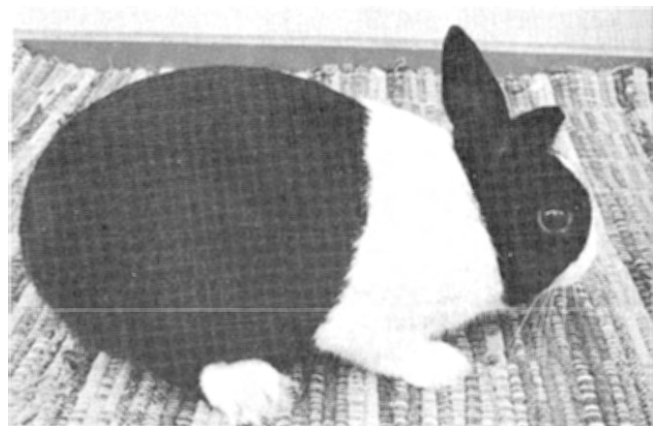
Choosing a Breed

The Standard of Perfection published by the American Rabbit Breeders Association lists some 31 breeds with approximately 100 different varieties. The breeds are differentiated by body type, while the varieties are designated according to color of the fur.

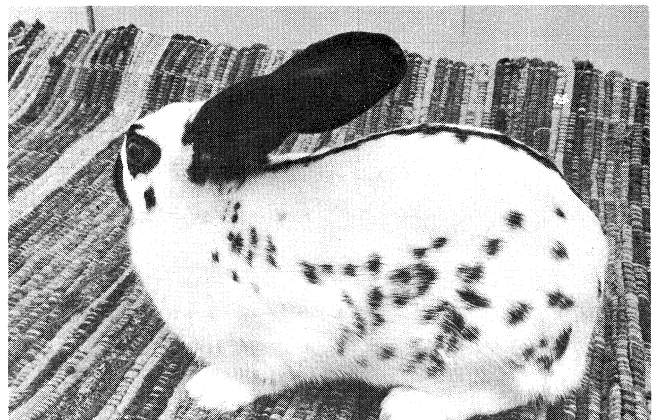
Mature body weight is often used as a means of classifying the different breeds. Generally classifications are the small or dwarf breeds which weigh 3-4 pounds, medium breeds weighing 9-12 pounds and large or giant breeds which weigh 14-16 pounds at maturity.

The dwarf or giant breeds are normally grown by individuals who are interested in participating in shows or who may be interested strictly in the hobby aspect of rabbit production. The medium sized breeds are most often grown for home or commercial meat production as more attention has been given to efficiency of production for these breeds. Don't overlook the fact that individual rabbits of the dwarf or giant breeds that are not of show quality can be processed for the family table. There are often individuals in the medium breeds of show quality for which there are classes in most rabbit shows.

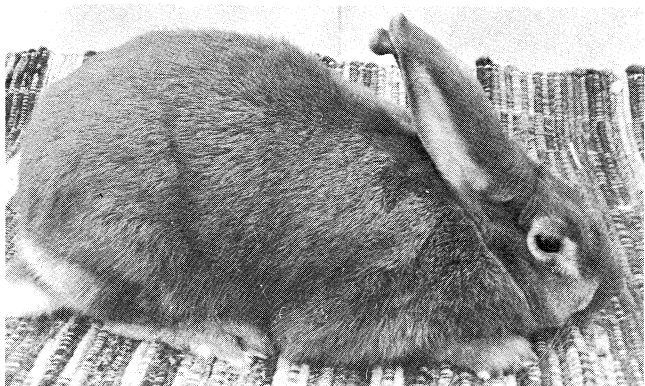
For home meat consumption, or for breeding stock production, choice of breed is up to the individual as any of the breeds will fit these purposes. For commercial production the main breeds used are the Californian and the New Zealand Whites. The



Black Dutch Belted



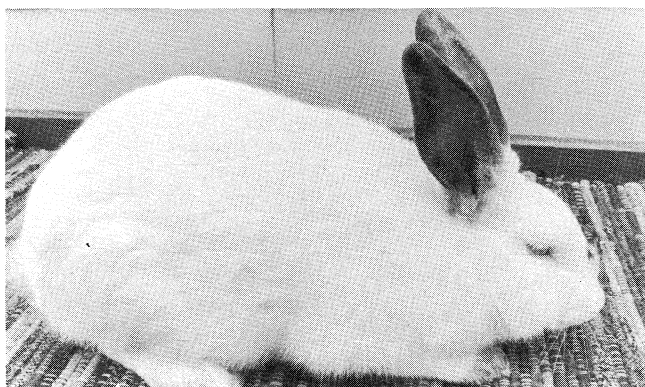
Black English Spot



New Zealand Red



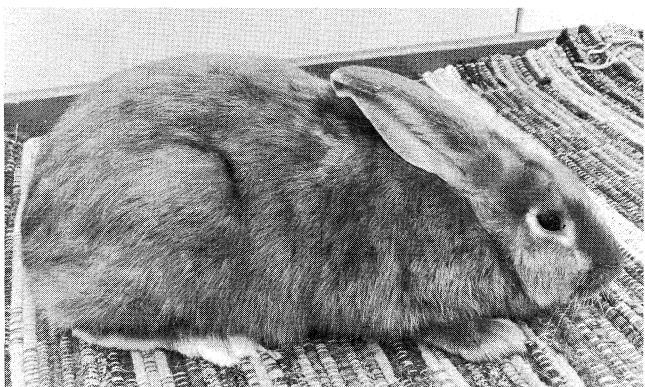
American Chinchilla



Californian



Champagne



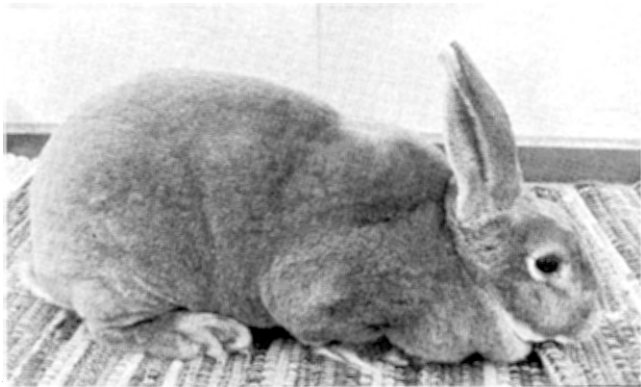
Red Satin



Black Silver Marten



Siamese Satin



Opel Rex

Rabbit Breeds

Breed and Variety	Weight Pounds
American—Blue, White—Bucks	8 to 10
American—Blue, White—Does	9 to 11
Angora—English—Bucks	5 1/2 to 7 1/2
Angora—English—Does	5 1/2 to 8
Angora—French—Bucks & Does	7 or over
Belgian Hare—Bucks & Does	6 to 9
Beveren—Bucks	8 to 10
Beveren—Does	9 to 11
Californian—Bucks	8 to 10
Californian—Does	8 1/2 to 10 1/2
Champagne D'Argent—Bucks	9 to 11
Champagne D'Argent—Does	9 1/2 to 12
Checkered Giant—Bucks	11 or over
Checkered Giant—Does	12 or over
Creme D'Argent—Bucks	8 to 10 1/2
Creme D'Argent—Does	8 1/2 to 11
Chinchilla Standard—Bucks	6 to 7 1/2
Chinchilla Standard—Does	6 1/4 to 8
Chinchilla American—Bucks	9 to 11
Chinchilla American—Does	10 to 12
Chinchilla Giant—Bucks	12 to 15
Chinchilla Giant—Does	13 to 16
Dutch—Bucks & Does	3 1/2 to 5 1/2
English Spot—Bucks & Does	5 to 8
Flemish Giant—Bucks	12 or over
Flemish Giant—Does	13 or over
Florida White—Bucks & Does	4 to 6
Havana—Bucks & Does	5 to 7
Harlequin—Bucks & Does	6 to 8
Himalayan—Bucks & Does	2 1/2 to 5
Lilac—Bucks	5 1/2 to 8 1/2
Lilac—Does	6 to 9
Lop—English & French—Bucks	9 or over
Lop—English & French—Does	10 or over
Netherland Dwarf—Bucks & Does	Not over 2 1/2
New Zealand—Bucks	9 to 11
New Zealand—Does	10 to 12
Palomino—Bucks	8 to 10
Palomino—Does	9 to 11
Polish—Bucks & Does	Not over 3 1/2
Rex—Bucks	7 or over
Rex—Does	8 or over
Sable—Bucks	7 or over
Sable—Does	8 or over
Satin—Bucks	8 1/2 to 10 1/2
Satin—Does	9 to 11
Siamese Sable—Bucks & Does	5 to 8
Silvers—Bucks & Does	4 to 7
Silver Fox—Bucks	8 to 11
Silver Fox—Does	9 to 12
Silver Marten—Bucks	6 1/2 to 8 1/2
Silver Marten—Does	7 1/2 to 9 1/2
Tan—Bucks	4 to 5 1/2
Tan—Does	4 to 6

Housing and Equipment

Although rabbits can be raised under a variety of conditions, they should be provided as comfortable an environment as possible. Outside hutches must have a watertight roof, as well as sides which can be in place during extreme cold weather and removed during hot periods of the year. For most breeds, the floors of the hutches can be welded wire construction but should be no more than 1/2 x 1 mesh to support the weight of the doe and litter. It is suggested that for some breeds such as the Rex and the Giant breeds at least part of the floor should be of wood construction because of a tendency for hock trouble to develop on all-wire floors. Wire floors make it easier to keep the hutch clean in that droppings and urine will fall through to the ground and there are fewer places for disease organisms to multiply.

Hutches must be constructed so that dogs and predatory animals cannot get to them. The hutches should be located so that the rabbits are not disturbed. There is a tendency for the doe to kill the young by trampling or eating, if they are frightened.

Rabbits, like all other animals, will not perform satisfactorily if they are crowded. Mature rabbits are usually kept in individual hutches. They should have at least one square foot of floor space for each pound of body weight. An 8-10 pound rabbit needs 7 1/2-10 square feet of floor space. For working or breeding does with litters, a floor space of at least 10 square feet is desirable; however, many experienced commercial operations use a hutch 3 x 2 1/2 feet.

The hutch should be no more than 30 inches deep for the greatest ease of caring for the rabbits. The width should be 48 inches to provide ample space when water crocks and feeders are inside the hutch. A satisfactory height of the hutch for most breeds will be 18 inches, although some of the large or Giant breeds will do better with a 24 inch height. The floor of the hutch should be constructed of 1/2 x 1 inch welded wire. The sides and tops are often constructed of 1 x 2 inch wire. Avoid any rough spots or loose ends of wire to prevent injury to the rabbit.

Each hutch must be provided with feeding and watering equipment. Individual glazed masonry feeders and waterers are used. These are satisfactory but they require considerable labor to keep clean. Some rabbitry supply companies now sell metal self-feeders which attach to the outside of the hutches, and automatic waterers, as well as creep feeders for the younger bunnies, all of which aid considerably in the sanitation program. It might appear that these items of equipment are only for the larger or commercial producers but even the single hutch

operation can easily adapt these automatic devices to their program.

Any rabbit producer must have nest boxes available for the doe at the time of kindling. An example of a nest box is shown on page 23. These boxes should have dimensions as shown in the sketch, and may be homemade from wood or wire. Many rabbit producers prefer wire nest boxes with a liner which can be destroyed after each use as another aid in sanitation. With wood boxes there must be a means of ventilating during extremely hot weather and with the wire construction there must be a way to insulate them during cold weather. If the hutches are in a building in which the temperature can be maintained within reasonable limits, the type of construction of the nest boxes is not as critical.

Breeding

Rabbits are ready for breeding upon reaching maturity. The age of maturity will range from 5 months for the small breeds to 9 to 12 months for the giant breeds. The medium sized commercial breeds are usually bred when 5 to 6 months old. One buck to each ten does is suggested as a maximum in mating, with four or five matings per week for the buck under limited use, and two or three matings a week with continuous use. The breeding program should be carried on throughout the year.

Many of the rabbit producers who follow a year around breeding program experience difficulty during extremes of temperature, particularly in the summertime. The adult rabbits and especially the bucks must be kept in a relatively temperate environment in order to maintain normal breeding condition. This may necessitate a well insulated house and even provision for supplemental heat during extremely cold weather. Fogging devices or even a partially environmentally controlled house may be necessary for best summer production. Large commercial rabbitries are constructing houses which are completely ventilation controlled as a means of maintaining uniform production throughout the year.

Environmental control may be accomplished by one of two methods. The most expensive, but in many areas the best, is refrigerated air-conditioning. A large rabbitry might want to consider evaporative type cooling. Most places which install this type of cooling will have large exhaust fans in one end of the building, with a section of the entire wall on a side of the building away from the fans fixed for the installation of the excelsior-like pad. Any producer who contemplates such an installation should work closely with the individual or company that is going

to construct the building in order that the installation be adequately engineered.

Artificial insemination in the rabbit herd is a relatively simple operation. Two people with a little practice can inseminate a large number of does in a relatively short time. There are several advantages which can be realized in the rabbitry by this practice: (1) A small number of bucks would need to be maintained; instead of the usual 1 to 10 ratio, a 1 to 20 ratio would be sufficient for satisfactory fertility; (2) Semen from several bucks may be pooled and thus alleviate the problem of temporary sterility which in turn could cause rebreeding to be necessary; (3) Kindling can be planned and spaced to market demands as well as to a more efficient use of labor availability; (4) The problem of hard-to-breed or shy does is eliminated since acceptance of the buck is not necessary.

The equipment and procedure for artificial insemination is relatively simple. The equipment needed is an artificial vagina, a cabinet for keeping the semen warm between collection and insemination, some physiological saline to be used as a diluent, an inseminating tube or syringe, and a syringe with some hormone for stimulating release of ova from the ovary. Detailed information on this procedure is shown in the appendix to this publication.

Proper management can produce five litters a year from each doe. The doe may be bred when the young are 6 weeks old and left with the litter until they are sold or weaned at 8 or 9 weeks of age. This allows 1 to 2 weeks resting period for the doe between litters.

Some breeders feel that does should not be bred until they wean their young. Basically it depends on the condition of the individual rabbit. A doe with a small litter will likely get fat if allowed to wean her young before re-breeding while a heavy milking doe with a large litter may need to wean the litter before being re-bred. If a litter is lost at kindling the doe should be re-bred in about 3 days if she appears to be eating well and acting normal.

It is good practice to breed several does on the same day. Then you can equalize the size of the litters by adding to some and taking away from those does which might kindle too many. It is best to leave no more than 8 or 9 bunnies with a young doe. A good doe may be able to raise 10 to 12 but the producer can only know this through experience. Usually a doe will accept bunnies added to her litter at the time of kindling with no trouble. A good practice is to sprinkle a small amount of talcum powder on the doe's nose as well as on the young bunnies. By the time the doe has regained her

normal sense of smell the additions have picked up the nest scent and acceptance is assured.

The rabbit is unique in that it does not exhibit an estrus cycle as do other mammals. Ovulation occurs only after copulation. Ovulation will occur approximately 10 hours after copulation or hormonal injection. Many successful rabbit growers like to use an 8 hour rebreeding program. The doe is taken to the buck's pen for breeding in the evening and again the following morning. They feel that this improves conception, particularly during periods of unusual weather when the does are apt to be nervous or tense. It may be desirable to place the doe in a pen next to the buck if she appears to be shy or offer resistance to the buck. This practice often will make her more receptive. The doe should always be taken to the buck's pen for breeding and should be removed as soon as mating occurs.

Determining Pregnancy

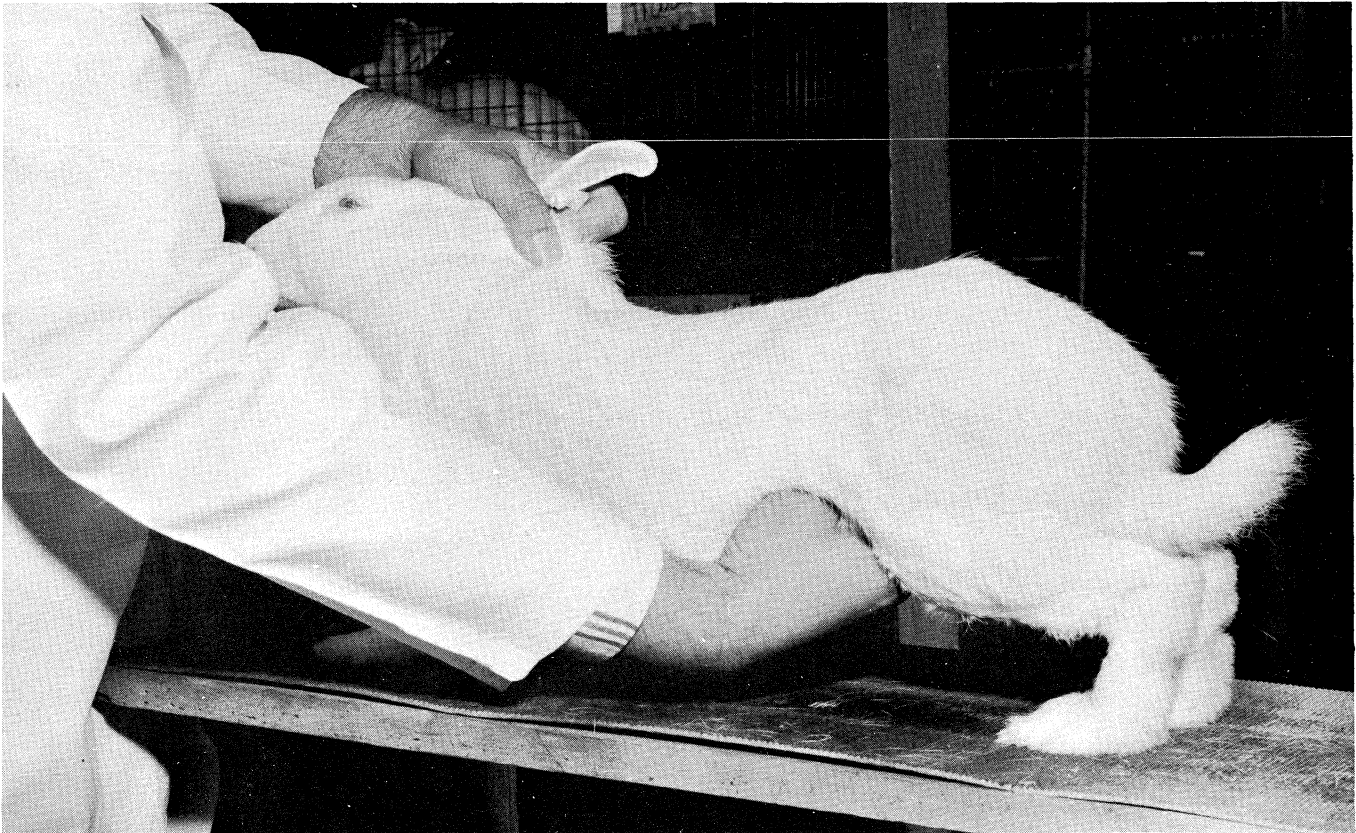
Two methods are used to determine that conception has occurred. The first is called "test mating." The doe is returned to the buck's cage 14 to 18 days after the first mating. If she refuses the male, it is usually assumed that she is pregnant; however, this is not a fool-proof method. Some does will

accept service when pregnant and others will refuse service when not pregnant. Diagnosing pregnancy by the development of the abdominal region and the gain in flesh is not reliable until late in the pregnancy period.

The best method is that of palpation. Through experience a good rabbitry manager can often determine pregnancy as soon as 12-14 days, but certainly no more than 17 days after mating. If pregnancy has not occurred, rebreeding can be accomplished with a minimum of disruption to the production schedule. In the process of palpation, the ears and fold of skin over the shoulder should be grasped by the right hand, while the left hand carefully feels the abdominal area between the hind legs slightly in front of the pelvis. If the doe is pregnant, the young embryos should be distinguishable as small marble-shaped forms as they slip between the thumb and fingers. The doe should be handled gently and only light pressure used so that the young embryos will not be injured.

Accurate determination of pregnancy by palpation takes practice and you should start learning the "feel" by first palpating late in the gestation period. Succeeding palpations can be earlier and earlier in the gestation period so that proficiency of pregnancy determination is gained.

Determining Pregnancy by Palpation



Kindling

The average gestation period (time from breeding until birth of young) is 31 or 32 days. Since this may vary a day or two either way, the nest boxes should be placed in the hutch between the 27th and 29th day after breeding. This will allow the doe an opportunity to become familiar with the box prior to kindling. These nest boxes must be completely sanitized before placing in the hutch to prevent the spread of disease. Many rabbit growers use a flame to remove all traces of fur from previous kindlings. Wire nest boxes with a disposable paper lining are excellent from a sanitation standpoint.

Since the young rabbits are born completely devoid of fur, adequate provision for warmth within the nest box must be made. In cold weather provide 6 to 8 inches of nesting material, such as oat or wheat straw or grass hay (no legumes). Small pieces of shredded sugar cane or shredded newspaper should be put in the nest box when it is placed in the hutch. In hot weather 2 or 3 inches of nesting material will be sufficient. Just prior to kindling, the doe will pull hair to line the nest for the young bunnies. The doe must be watched to see that she accepts the nest box and indeed makes her nest in it. Does having their first litter may attempt to make a nest on the hutch floor. If this happens, the pulled hair should be carefully placed in the nest box and the doe encouraged to use the box as the young bunnies have a poor chance of survival on the hutch floor.

Care must be taken to keep unusual noises or disturbances away from the rabbitry when the does are kindling. The appearance of other animals, dogs, cats, possums, skunks, and the like, can easily cause the doe to eat her young. This is her means of protection if she feels her family is being endangered.

The doe should not be disturbed immediately after kindling. However, the litter should be examined within 24 hours to determine the number of young and the removal of any deformed or dead bunnies. Experience with particular does will be a determining factor on how soon this examination should be made. A record of kindling data for a doe can be quite useful in determining her future in the rabbitry.

The nest box should be removed from the hutch when the young bunnies are approximately 3 weeks old or when all the youngsters are spending all of the time outside the box. These boxes should be cleaned, disinfected, and air dried in the sun so they are ready for use.

Many rabbit growers, particularly commercial rabbitries, will put creep feeders in the hutches when

the young bunnies are about 2 weeks of age. These feeders allow the bunnies to eat but the holes are of such size that the doe cannot get to their feed. Among the reasons why this is a good practice are: (1) The young rabbit can supplement the doe's milk and lower the drain on her nutritional needs; (2) The young growing rabbit needs a high protein ration for most rapid and efficient growth; (3) It may be possible to wean the young rabbits at an earlier age and thus increase the number of litters raised per doe per year; (4) The young rabbit will have already made the adjustment to a pellet type feed prior to weaning.

If the rabbitry is on an accelerated breeding program the does are bred when the young rabbits are 4 to 6 weeks old. The young should be removed from the pen so the doe will have at least 2 weeks rest before the next kindling. The breeding schedule can best be determined by the condition of the individual rabbit. Many good does can maintain their body weight and condition while nursing the litter while others will need a longer rest period between litters for best performance.

Feeding and Watering Schedules

An adequate supply of clean fresh water and feed needs to be available to the rabbits at all times. Whether the watering system used is of the automatic type or uses a crock, trough, or other hand-filled equipment the water should be fresh each day.

The feeding schedule is one item which must be tailored to the individual rabbit. The condition of the doe, buck, or litter of young bunnies will determine how much feed should be given at each feeding. Although self-feeders may be used all the feed should be eaten between feedings. This makes for easier cleaning of the feeding equipment as well as making certain that clean, fresh feed is available. Many rabbit growers use small scoops for putting the feed in the feeders and use some type of mark on each cage to keep track of how many scoops to give the individual rabbit. Feeding in this manner also permits the producer to use a medicated feed if necessary.

The feed given should be weighed and recorded. The average, medium-sized doe should consume 4-6 ounces of rabbit pellets per day. This is only an average of feed amounts. Fat does may do well on only 2 or 3 ounces of feed while thin does may need as much as 8 ounces.

Nutrition and Nutrient Requirements

The rabbit is a herbivorous animal; it subsists entirely on plants or materials of plant origin. Wild rabbits eat both the fresh and dried portions of a wide variety of plants. The domestic rabbit must get all of its nutrient requirements from the food you place in the hutch. Usually the entire nutritional requirement will be met by the commercial rabbit pellets.

The use of hay is a questionable practice today as most of the pellets sold contain varying amounts of dried or dehydrated alfalfa and additional hay may alter the nutrient intake enough that the rabbit will not grow adequately. Experienced rabbit growers often use hay for conditioning show rabbits or to overcome some types of digestive problems. Use a high quality legume hay such as alfalfa or clover. This hay should be placed in a specially designed rack so the rabbits cannot walk on it or foul it with urine and fecal material.

The exact nutritional requirements for the rabbit have not been worked out as accurately as for other meat animals but two items are quite evident; (1) for best results the ration must be complete and balanced, (2) dietary requirements will vary with the sex and stage of development of the individual rabbit.

A complete ration means one that includes sufficient protein. It must contain a balance of amino acids for optimum growth, carbohydrates and fats to provide energy, minerals for bone growth and general body functions, and vitamins to aid in the efficient utilization of the other elements of the ration.

One of the easiest elements for the rabbit raiser to determine is the crude protein content of the particular pellets under consideration. This will be on the tag or printed directly on the bag. Table one

shows four groupings of the rabbits for which separate protein requirements have been determined.

For those does and bucks being held in a maintenance condition a 12 percent protein ration appears to be sufficient. A feeding program for this group of animals could include a high percentage of good alfalfa hay and a minimum of pellets. This program might be followed during hot summer months when conventional breeding methods are not too successful, or after the return of rabbits from a show when it is desirable to give them a chance to settle down from the activity attendant to the show and travel.

TABLE 2. Examples of Adequate Diets for Commercial Production*

Kind of Animal	Ingredients	% of Total Diet ^a
Growth, 0.5 to 4 kg	Alfalfa hay	50
	Corn, grain	23.5
	Barley, grain	11
	Wheat bran	5
	Soybean meal	10
	Salt	0.5
Maintenance, does and bucks, avg. 4.5 kg	Clover hay	70
	Oats, grain	29.5
	Salt	0.5
Pregnant does, avg. 4.5 kg	Alfalfa hay	50
	Oats, grain	45.5
	Soybean meal	4
	Salt	0.5
Lactating does, avg. 4.5 kg	Alfalfa hay	40
	Wheat, grain	25
	Sorghum, grain	22.5
	Soybean meal	12
	Salt	0.5

^aComposition given on an as-fed basis.

*Nutrient Requirements of Rabbits, Publication ISBN 0-309-02607-5, Committee on Animal Nutrition, National Academy of Sciences-National Research Council.

TABLE 1. NUTRIENT REQUIREMENTS OF RABBITS^a

Nutrient	Growth	Maintenance	Gestation	Lactation
Crude protein (%)	16	12	15	17
Digestible energy (kcal)	2500	2100	2500	2500
TDN (%)	65	55	58	70
Crude fiber (%)	10-12 ^b	14 ^b	10-12 ^b	10-12 ^b
Fat (%)	2 ^b	2 ^b	2 ^b	2 ^b
Calcium (%)	0.4	-c	0.45 ^b	0.75 ^b
Phosphorous (%)	0.22	-c	0.37 ^b	0.5

^aConsult publication listed at the bottom of Table 2 for requirements for other nutrients.

^bMay not be minimum but known to be adequate.

^cQuantitation requirement not determined, but dietary need demonstrated.

Prior to use in the breeding pens both does and bucks should be placed on at least a 15 percent protein ration. This ration should not be supplemented with hay as the digestibility and vitamin level needs to be as high as possible for best results in the breeding pen. This 15 percent ration should be continued with the bucks as long as they are in the breeding pens and with the does throughout the entire period of pregnancy.

Even though it might appear the doe should have a higher protein ration, her increased daily intake will be sufficient to maintain her condition as well as to develop the fetuses within her body. The increase in total daily intake will assure increased protein intake for her increased body needs. Particular attention needs to be given to the ration for does and bucks in the breeding pens with respect to vitamin content. Any ration fed should contain higher than usual amounts of vitamins A, D, E, and K for best results. If the same ration is fed to the breeding rabbits as is used for normal growth, or a special breeder ration is not available, it is often advantageous to supplement the ration with a vitamin mixture.

Probably the most important ration used by the successful rabbit grower is the one given to the lactating or nursing doe. Because she must not only maintain her own body conditions but also provide a tremendous amount of nutrition for her litter, her nutrient requirements during this period are considerable. The protein must be increased to 17 percent. The ration needs to be highly digestible with a minimum amount of fiber. She should increase her total daily intake enough to compensate for the increased body activity. Quite often a high protein, high vitamin, high mineral concentrate is used at the rate of one tablespoon per day to supplement the ration. It will assist the doe by providing a concentrated source of many of the nutrients needed by the young bunnies.

For most efficient production or where rapid growth of the young bunnies is desirable, the use of a creep feeder and a creep feed ration is a necessity. As soon as the bunnies start coming out of the nest box, a creep feeder should be located below the regular feeder. A creep feed, high in protein, as much as 20 percent, will supplement the doe's milk and lessen the drain on her body. It will also begin the transition for the young bunnies to normal fattening and growing ration. For those bunnies being readied for market, the ration should be as high in energy as possible. The ration should not go below 16 percent protein during this rapid growth phase and the fat and carbohydrate portion of the ration should be increased, particularly during the last week or two prior to market.

Medicated Feed

Most rabbit growers have access to rabbit pellets to which some type of medication has been added. Utmost care must be exercised in the use of such feed. Some of the additives in these medicated feeds are quite specific in the conditions for which they are a treatment; others are quite broad in their effect. Most of them will have a withdrawal time on the tag, that is there will be a specified number of days prior to slaughter when the feeding of the medicated feed must be stopped. Failure to observe this withdrawal time, and subsequent detection in the rabbit meat can cause condemnation and loss of money. Attendant publicity can hurt the entire rabbit meat industry. Failure to comply with these withdrawal times, even for rabbits consumed at home, can create health problems among the people eating the meat.

Medicated feeds are no substitute for adequate sanitation and proper management within the rabbitry. The major claim for the use of medicated feed is to overcome stress or to combat a disease which is often associated with unclean hutches. Adequate ventilation, protection from too hot or too cold temperatures, and thorough cleaning of hutches and equipment will prevent the stress before it occurs. There may be one condition under which the use of medicated feed can be advantageous. For those growers who plan on entering some of their rabbits in a show, feeding a medicated feed 5 days prior to and 5 days after the return from the show will tend to overcome the stress of the show and combat any diseases to which the rabbit may have been exposed. Study carefully what the medication is, what it is designed for, use it only for that purpose and strictly according to directions.

Salt

Salt spoons should be available in all hutches at all times. If the rabbitry is in a maintenance situation and using a high percentage of hay, iodized salt spoons may be necessary for the rabbits' health. Hay produced on iodine-poor soils will be low in this particular element and it must be in the rabbits' diet for best results.

Records

As a part of the management program, some form of record keeping is necessary for a successful operation. In order to keep accurate records, a means of identification is necessary. Tattooing numbers in the ears is a method often used as a means of permanent identification. This will not

BUCK BREEDING RECORD

Buck No. _____

Breed _____

Sire _____

Date born _____

Dam _____

Doe	Location	Date Bred	Result of breeding					
			Kindled		Passed Date	Weaned		
			Alive	Dead		Number	Weight	

Figure 2—Sample of buck breeding record.

BREED _____ SEX _____

SIRE	Reg. No.	Wt.		Reg. No.	Wt.
	Reg. No.	Wt.		Reg. No.	Wt.
NAME	Reg. No.	Wt.		Reg. No.	Wt.
DAM	Reg. No.	Wt.		Reg. No.	Wt.
BORN	Reg. No.	Wt.		Reg. No.	Wt.
WEANED	Reg. No.	Wt.		Reg. No.	Wt.

Figure 3—Pedigree Record

Diseases

The control of diseases in the rabbitry should be a matter of prevention rather than cure. It is better economics to have an actively planned preventive program, with secondary programs or cures ready, than to rely on the "cure" procedure entirely. In many cases, by the time the problem is discovered and diagnosed, losses have resulted which require considerable time, effort, and money to overcome.

Start by establishing these basic animal health guidelines. Strict adherence to these will create an atmosphere in which a minimum of problems will develop.

1. Buy healthy foundation stock only from reputable individuals. If you are planning on raising show or breeding stock, or participating in a 4-H project, contact a person who has shown successfully in the past. If you are planning the rabbitry as a commercial venture, the purchase of stock from a

commercial rabbitry is desirable. Both of these sources of stock will have records of performance and progress. This can save you time and money. Purchase of either type of stock from someone liquidating an entire rabbitry should be investigated very carefully. There may have been reasons for their going out of the rabbit business which, when "inherited" by the prospective buyer could be disappointing.

2. Follow the feeding program outlined by the manufacturer of the feed purchased. Feed formulation is a science and each feed manufacturer develops the various formulas to fit a complete feeding schedule. The exact formula may vary with ingredient availability and cost but it will provide complete nutrition and will fit into the overall feeding program which has been developed by that company.
3. Provide an environment for the rabbits which will keep stress at a minimum. This must include protection from extreme heat or cold and provision for adequate ventilation within the rabbitry. The higher the density or concentration of animals within an enclosed area the greater the importance of ventilation. Removal of ammonia fumes is a necessity and adequate ventilation without drafts can retard the spread of a contagious disease through the rabbitry.
4. Develop and actively enforce a sanitation program. All hutches and equipment should be

thoroughly cleaned and disinfected at regular, periodic intervals. All visitors, dogs, cats, birds, or wild animals must be kept away from the productive portion of the rabbitry. Rats and mice should be kept away from both rabbits and feed supplies at all times. A part of the sanitation program should include an isolation area where sick rabbits, rabbits which have been off the premises, or new additions to the rabbitry can be kept and observed for a period of time.

It must be realized that in spite of the best sanitation and prevention program, the possibility of a disease, parasite, or health outbreak can occur in the rabbitry. Some medicants, such as vitamins or antibiotics which can be stored for periods of time without losing their potential should be kept on hand at all times. The quicker a health problem is treated the shorter the time the affected rabbits will be out of effective production. The producer should also realize that an accurate diagnosis of the problem is necessary for effective treatment. Experience will often tell what the problem is and treatment can be started immediately. In many cases, however, the services of a qualified diagnostician, such as a veterinarian or a laboratory will be needed to isolate the causative agent.

The disease chart which follows can be used as a guide by the producer. A word of caution though, the symptoms for many disease problems are quite similar. Be sure you have a corrected diagnosis before beginning treatment.

Disease Chart

Symptom	Description	Cause	Treatment
Abcess (on any part of body)	Localized collection of pus under the skin	Bacterial infection usually a streptococcus	Clip the fur around the area, lance, remove pus, and apply an approved antibiotic powder or ointment, for a day or two, until infection is cleared. Disinfect pen and equipment thoroughly.
Breathing Difficulty	A warning of many ailments:		
	1. May be heat prostration; Pregnant does will be affected first.	Extremely high temperature in rabbitry.	Move the air with fans. Install foggers or spray water on the roof. Put wet burlap in windows.
	2. May be pneumonia; head is held high and tilted backward.	Temperature stress combined with bacterial infection of the lungs.	Eliminate the source of stress. May need to inject the rabbits with an approved antibiotic. If the individual becomes extremely emaciated, it may be necessary to destroy it to prevent spread of disease to the rest of the rabbitry.
	3. May be "Snuffles." Sneezing and nasal discharge accompanies respiratory symptom. Animal tends to rub nose with front feet.	Bacterial infection of Pasteurella or Streptococcus families.	For accurate treatment the organism needs to be cultured and identified. Broad spectrum antibiotics and chlorination of the drinking water may help stop the transmission to the other rabbits, "Snuffles is quite contagious and may cause considerable loss if not handled promptly and properly.

Symptom	Description	Cause	Treatment
Buck Teeth	Upper and lower front teeth are very long and do not meet.	Usually an inherited condition, due to recessive genes.	Temporarily the front teeth can be cut back with pliers. Individuals with buck teeth must not be used in the breeding program.
Cannibalism	The doe kills or eats her young usually while still in the nest box.	Usually caused by external noise or apparent danger. This is the doe's protective reaction when dogs, predators, or unusual noises occur in the rabbitry.	During kindling and for a few days afterward be sure that the does are not disturbed by unusual events. No visitors of any kind should be allowed around the kindling area.
Conjunctivitis (or watery eye)	One or both eyes water runs down the cheek, may be swelling and get bad enough that hair is matted or falls out. Young rabbits just coming out of the nest box may have the eye lids crusted shut.	Infection or irritation due to dust, ammonia fumes or unsanitary conditions.	Remove source of irritation by ventilation. Treat individual rabbits by cleaning eyes with a 2% boric acid solution.
Diarrhea	<p>Loose bowels, a warning of many intestinal disorders:</p> <p>1. Coccidiosis; a parasitic disease which probably has more economic impact on the rabbit industry than any other one disease.</p> <p>a. May be liver type in which the liver is spotted with white nodules.</p> <p>b. May be intestinal type —can only be diagnosed by a pathologist.</p> <p>2. Enteritis</p> <p>a. Bacterial; feces are sometimes dark in color and strong in odor.</p> <p>b. Mucoïd; usually indicated by a grinding of teeth and the passing of large quantities of a thick gelatinous mucus from the intestine.</p> <p>c. Non-specific; droppings are poorly formed and often stick to the wire floors.</p>	<p>Coccidiosis is caused by a protozoan. There are five types which normally affect rabbits.</p> <p>The protozoan Eimeria Stiedae</p> <p>Any one of four other families of protozoan</p> <p>An invasion of the digestive tract by one or more of the many bacteria.</p> <p>The causative agent is unknown but often develops when rabbits are in a weakened condition from coccidiosis or temperature stress.</p> <p>The very name of non-specific indicates a variety or combination of causes.</p>	<p>Coccidiosis is spread by ingestion of sporulated oocysts. This occurs when the animal has access to droppings from infected rabbits. Wire floors or frequent cleaning will aid in the control of the disease. Rabbits which survive an attack may not be affected again, but they are carriers of the disease.</p> <p>The liver type can be treated with the feeding of a medicated ration. Use according to the manufacturers recommendations.</p> <p>Does not respond very well to drug treatment. Sanitation to break the cycle will help control the incidence of the disease.</p> <p>Disinfect hutches and equipment thoroughly at regular intervals to kill bacteria. Reduce feeding of pellets and substitute good clean alfalfa hay. The pellets given should be medicated. Antibiotics in the drinking water will also be helpful.</p> <p>Same treatment as for bacterial enteritis may be of some value. The best control is to eliminate all affected rabbits and obtain breeding stock from rabbitries that are free from mucoïd enteritis.</p> <p>Sanitation, medicated or vitamin fortified feeds can be helpful. Keep the animals comfortable and encourage feed consumption to overcome the morbidity effects of the condition.</p>
Hard or Caked Mammary Glands	<p>Mastitis is defined as an inflammation of the mammary glands.</p> <p>1. Caked Breast; one or more of the teat areas may be hard to the touch but usually there is no discoloration of the surrounding tissue.</p>	<p>Caked breast develops when the milk is not drawn out as fast as it is formed. Reasons for this include; extremely high milk production, the doe refusing the young access to the teat because of injury, or weaning the young too early.</p>	<p>Breast massage with camphor oil to break up the cake and removal of the milk by stripping. Usually 3 to 5 days treatment will suffice, however, treatment should be continued as long as necessary to alleviate the condition. If lancing becomes necessary all the gland must be removed.</p>

Symptom	Description	Cause	Treatment
	2. Blue Breast; It does not develop from caked breast. Blue breast develops rapidly and can cause the death of a doe in 2 or 3 days. The first symptoms are a reddened swollen mammary gland, which darkens and streaks of dark blue coloring often appear.	Bacterial infection either of the Staphylococcus or Streptococcus families.	Inject an approved antibiotic intramuscularly twice a day for 3 to 5 days. NEVER transfer the litter from a doe with Blue Breast to another doe. This will infect the second doe and both does will be lost.
Sore Hocks	The undersurface of the hind feet and/or the pad and toes of the fore feet become inflamed and may become covered with ulcers.	May be environmental because of the floors being inadequate for weight support. e.g. too wide crack between boards, wires too widely spaced; collection of filth and urine on the floor; rough surfaces on floor or burs on the wire. May be genetic because of long, thin fur on foot pad or tendency for nervous temperment resulting in increasing activity and stamping of rear feet.	Eliminate the source of infection, treatment of sores with iodine, peroxide or other disinfecting material can prove helpful. Eliminate families which tend to have sore hocks from the breeding pens and select breeding stock from those with good foot-pad thickness.
Vent or anus lesions and sores, Sex organs may also be affected	Can be one of two causes both will appear quite similar in appearance. Inflammation of external sex organs and anus. Area may form crusty scabs and bleed. If severely infected, pus will be produced.		
	1. Urine-hutch burn	A bacterial infection	Keep hutch floors clean and dry. Pay particular attention to corners where animals urinate. Daily applications of lanolin on the affected area may be of benefit.
	2. Syphillis—can be transmitted by mating	A spirochete	Inject intramuscularly an approved antibiotic. Do not breed until lesions disappear. Usually heal within 10-14 days and then breeding can be resumed without danger of infection. Do NOT loan bucks as this is a common source of infection.

External Parasites

Symptom	Description	Cause	Treatment
Crust inside of Ears	Ear Canker, usually starts at the base of the ear on the inside. If not treated can become extreme and cover a large area of the inside of the ear. The rabbit will shake its head and attempt to scratch its ear with the hind foot.	A microscopic parasite which embeds itself in the skin. This causes leakage of serum and subsequent formation of a crust. The mite continues to feed, breed, and multiply under this crust.	Thorough rubbing with mineral oil or olive oil will eliminate the problem. Treatment must be continued even after all visible crust has been removed. Some mites may still remain and condition will return. As a precaution, rabbits in adjoining hutches should be treated, to eliminate the possibility they are infected, although it may not be visible at the moment.

Symptom	Description	Cause	Treatment
Loss of Hair in localized areas	Mange; the rabbit scratches to the point where the hair comes out and dry, yellowish-grey scabs form on the bare patches. It may give the appearance of dandruff without scab formation.	Mites burrowing under the skin causing an irritation and exuding of serum which hardens to form the scabs.	It can be treated with a mange dressing but because of the labor involved and the possibility of spreading the destruction of the affected animals is by far the most economical solution. The hutches must be thoroughly disinfected, preferably with blow torch.
Lice and Fleas	Infestation with these particular parasites is a possibility although remote. The lice and fleas can be seen moving about in the fur. The eggs may be seen sticking to the fur.	The parasites themselves	Repeated treatment with rotenone, pyrethrum, or other approved insecticide. It may be necessary to treat over a 2 or 3 week period for complete elimination. The hutches should also be disinfected to prevent reinfestation. These parasites must be controlled in a rabbitry as they often are the carriers of disease, such as tularemia, fatal to the rabbit and transmissible to the handlers of the rabbit.
Lumps on the neck which have small "blowholes"	Warbles—active larvae can be felt moving in the lump under the skin. The area around the "blowhole" will usually be quite wet at all times.	These are the maggots of a particular genus (Cuerebra) of fly. Fortunately this fly is not wide spread in the United States.	Put some chloroform on the larvae and remove. Antibiotic powder or ointment can be put on the wound to prevent infection. Fly control around the rabbitry.

Internal Parasites

Symptom	Description	Cause	Treatment
White streaks in the Liver	Tapeworms—usually not of economic importance, except that rabbits so infected are unacceptable under meat inspection regulations.	Tapeworm Larvae	NO treatment method is effective once the animal is infected. Tapeworms require an intermediate host in their life cycle. Dogs, cats, and other pets may be the intermediate host so they should be kept away from the feed storage.
Small roundworms in the droppings	Roundworms and/or pinworms. Unless the infestation becomes unusually severe will probably see no effect on the animal.	Roundworms in the stomach or pinworms in the cecum.	NONE. Usually this type of infestation is found where conditions are wet and unsanitary. Strict hygiene in the rabbitry usually controls such infestations.

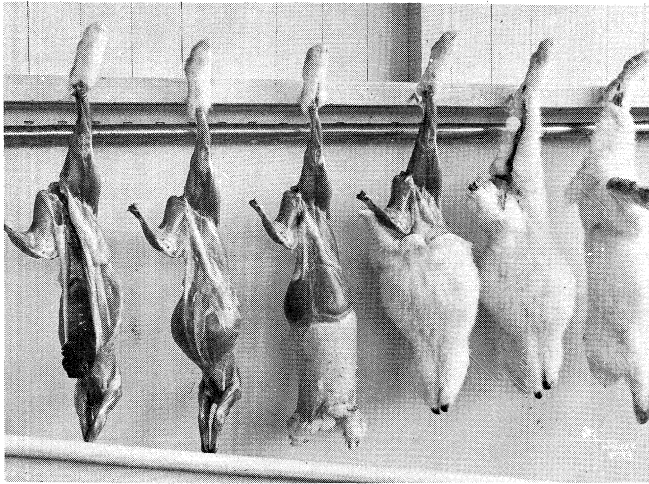
Home Processing

In slaughtering and dressing rabbits the following steps are suggested:

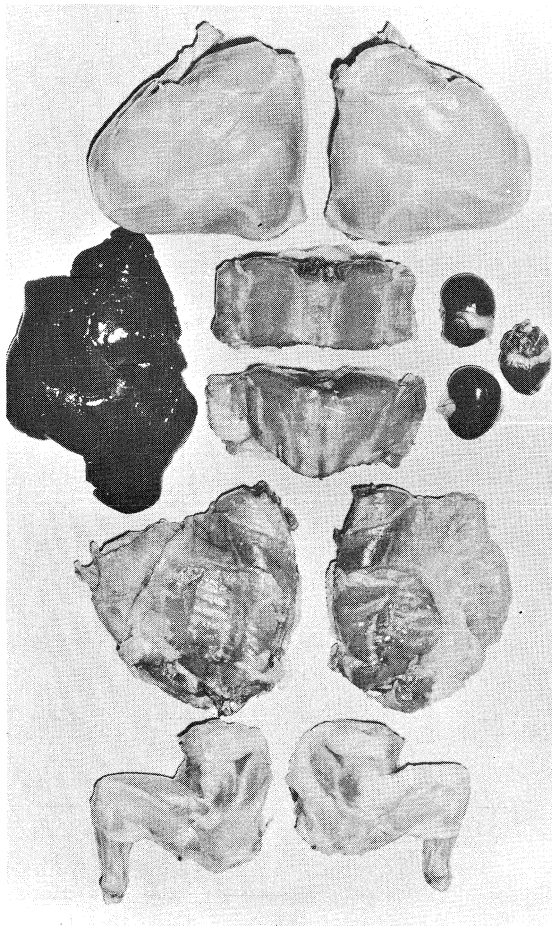
1. To kill, first stun the rabbit by lightly striking it behind the ears with a stick or edge of open hand while the rabbit is held up by both the hind legs.
2. Hang carcass on a hook by one leg, and remove head immediately to facilitate good bleeding. The hook is inserted between the tendon and the bone of the right hind leg.
3. Remove the tail and cut off the feet from the free legs at the hock and knee joints.
4. Slit the skin on inside of hind legs to the root of the tail and remove skin by slipping it off "wrong side out."
5. Remove entrails and the gall bladder but leave the liver in place.

6. Remove the other hind leg by severing at the hock.
7. Rinse and cool the carcass in cold water, not more than one hour.
8. Cut meat in pieces. Place meat in refrigerator or wrap in cellophane or other container for storage in cold storage locker until ready to use. The various cuts by one cutting method are shown on page 18.

Skins: Rabbit skins are valuable and where a sufficient number of skins are produced from the rabbitry, a ready market can often be found. The skins are used extensively in the manufacture of fur garments, gloves, slippers, collars, cuffs, and novelties as well as in the felt industry. Some of the highest quality men's hats are made from rabbit fur.



Steps in Dressing

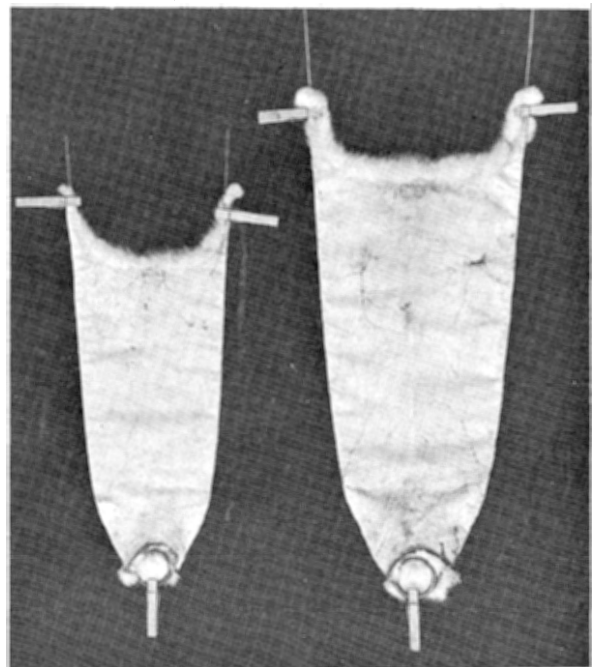


Cut Up Rabbit

Solid white rabbit furs lend themselves better than others to dyeing into the various colors in processing. They usually sell for 4 to 10 times the price of the colored skins. This is the reason a commercial rabbit processing plant pays more for white rabbits. This point should be remembered when one is making a breed selection.

As a by-product of meat production, the income from pelts will assist in defraying the cost of the whole rabbit enterprise. It will pay to remove the skins properly when dressing rabbits and preparing them for marketing.

Shapers for skins can be made of No. 9 galvanized wire 4 feet to 5 feet long, depending on the size of the rabbits. A thin board shaper may also be used. This shaper should have dimensions as follows: For fryers—board 24" long and 7" wide at one end and tapering to 4" at the other end. For large rabbits weighing ten pounds or more, the dimensions of the shaper should be 30" long by 9" at base and 4" at narrow end. Place the skin on shaper while still warm. Have the flesh side out with the fore part over the narrow end of board. Remove all wrinkles but do not overly stretch the skin. Both front legs of the skin should be on one side. Fasten the skin of hind legs to wide end of shaper with clothespins. Hang up in shade until thoroughly dry. Do not dry in the sun or by artificial heat. If dried skins are to be stored, they should be sprinkled with naphtha flakes and packed in a tight box. Do not salt rabbit skins that are to be marketed. Directions for packaging and shipping skins will be given gladly by the pelt buyer or commercial concern making the purchase.



Stretching Pelts

Shows and Exhibiting

For many rabbit producers the exhibiting of rabbits in the various fairs and shows is initially an interesting adjunct to the overall project. Because of the contacts with individuals with a similar interest, the spirit of competition, and the opportunity to see good high quality stock, exhibiting in shows often becomes a way of life to the rabbit producer. The 4-H member, the hobbyist, the breeder, and the commercial rabbit raiser can, through entering their rabbits in fairs and shows, see how their rabbits compare with those from other producers. These shows will range from local or county fairs, to state fairs, to breed association shows and to the national shows sponsored by the American Rabbit Breeders Association.

A rabbit show is quite similar to a beauty contest. Breed and variety characteristics, condition of the fur, health of individual, and its ability to "show off" for the judge are qualities which are necessary for high placings in any show. The individual rabbit must exhibit breed type and variety markings according to the Standard of Perfection. For this reason the exhibitor must be quite selective in the animals he prepares for exhibition. Those rabbits that fit these breed specifications should be clean, tame, healthy, with fur and flesh in good condition or it is a waste of time and money to exhibit them in most shows.

Be sure to study the show premium list so that the rabbit is properly entered. Exhibiting out-of-class will often put the rabbit in competition that may cause a poor showing. Most fairs and shows have breed, age, and sex groupings. Rabbit producers who plan to

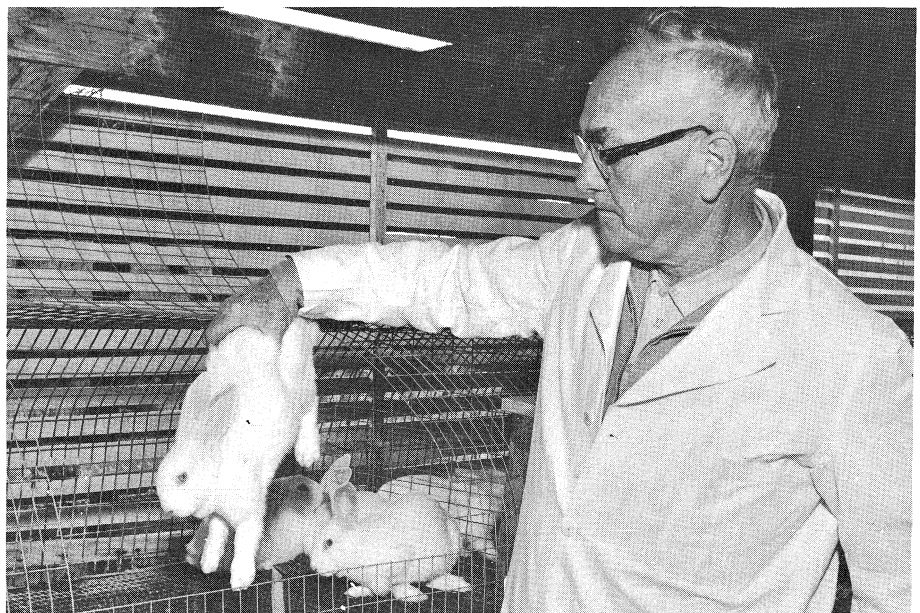
exhibit should identify their animals by tattooing. Not only does this serve as identification for age verification, but it also can alleviate ownership problems among animals of similar appearance. Ear notching, tags, or similar identification methods are not desirable as they detract from the rabbit's appearance on the show bench, and may cause the rabbit to be disqualified.

Some fairs and shows will have fryer or meat pen classes. In these, breed and variety characteristics are not as important as fleshing, condition, and uniformity within the entry. These classes are usually the only place where crossbred rabbits may be entered. If crossbred rabbits are entered in the purebred classes, the exhibitor is due for disappointment as they just will not show up well in the final placings.

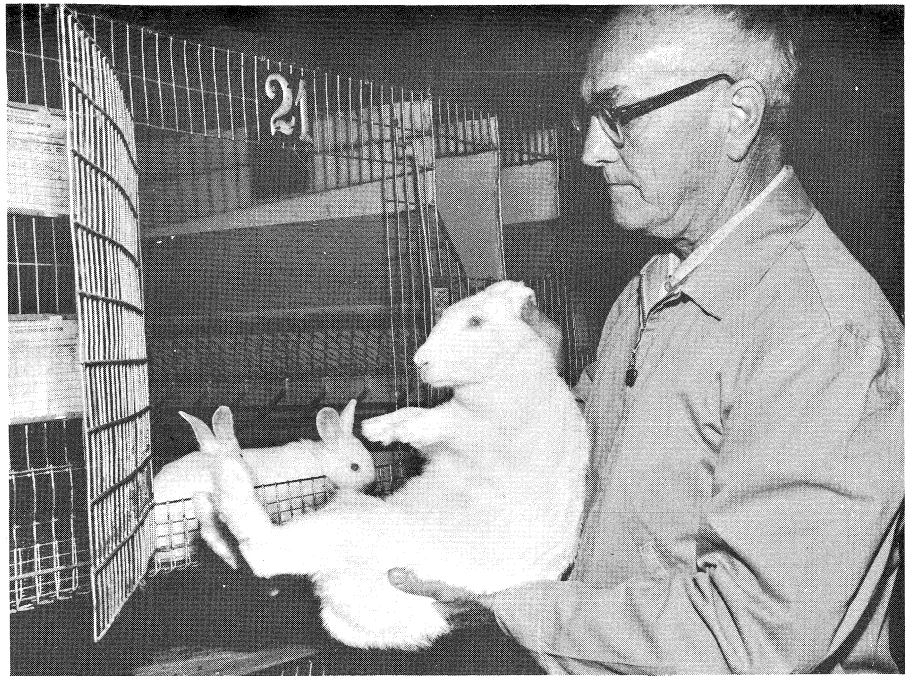
Rabbits which are to be shown should be handled frequently so that they will show off to advantage on the show bench. The judge must be able to pose the various rabbits for best comparison. A rabbit which is nervous will not receive maximum consideration in spite of adherence to breed characteristics.

Anyone who is going to exhibit rabbits must have crates or cages for shipping or transporting the rabbits to the shows. These can be homemade or purchased from commercial rabbit supply companies. Care should be exercised that the containers are large enough for the rabbit. Although only one rabbit should be in a cage, those cages for the dwarf breeds would certainly not be large enough for the standard size or giant size breeds. Also, if the cages are made at home, extreme care should be taken that nails, wires, screws, etc., do not project inside the cage to potentially damage the rabbit.

Proper Handling of Small Rabbits



Proper Handling of Large Rabbits



Regulations on shipping live animals by common carrier are changed from time to time. It is of necessity that the exhibitor check with the local office of the company before entering any show. Items which need to be answered in the inquiry include: time of delivery which can be reasonably expected at destination; should feeders & waterers, as well as feed & water, be sent with the animals; and what days will shipment be accepted. Before starting into this type of venture the exhibitor should check to see what type of service might be preferred. Air express is often faster than other types, but is usually more expensive and often has a minimum charge. Other exhibitors can be quite helpful in this area.

Tanning Rabbit Skins

Rabbit raisers who may process their own rabbits for sale might want to try finishing the pelts for their own use. The procedure is somewhat time-consuming and the finished product often lacks the appearance of commercial furs. Perseverance and experience can result in a beautiful product and the initiative of the operator can result in some beautiful accessories for the wardrobe.

After skinning the rabbit, the pelt should be stretched on a wire frame or smooth board skin side out for 24 to 36 hours in a relatively cool, dry place. A wire stretcher can be made from a length of number 9 wire bent in a U-shape. Care should be taken that the wire is well galvanized or rust may develop and stain the fur. If there is any fat or meat tissue adhering to the skin, it should be removed, being careful not to cut holes in the skin.

In a large crock mix the following: One gallon of water, one quart of salt and 1/2 ounce of sulfuric acid. This mixture may be doubled, tripled, etc., for larger quantities. Place fryer skins in this mixture for one day. Skins from older rabbits may be left in this mixture indefinitely. Remove skins from mixture, wash several times in soapy water, wring as dry as possible, and rub hard soap on fleshy side. Fold down middle of back and hang over wire with hair out. Allow to dry until hair is slightly damp and inside still slightly moist to touch. Lay on smooth, round board and scrape with edge of worn flat file or blunt, sharpened tablespoon. Scrape until inner layer is removed and skin becomes nearly white. Stretch, rub and twist with your hands until very dry. If parts of the skin are still hard and stiff, the soaping, drying and stretching process must be repeated until entire skin is soft. Fresh butter or other animal fat worked into the skin while it is warm, and then worked out again in dry hard-wood sawdust or extracted by a quick gasoline bath, increases the softness of the skin.

"Patience is indeed golden" when tanning your own skins. Don't become discouraged if the first two or three aren't gems of perfection. With practice your skins will become professional looking.

For the above procedure, several cautions should be made. Since sulfuric is a strong acid, care should be taken to use a stone crock or glass container. Be sure to do this work in a well ventilated area as the fumes from the acid can be harmful. If gasoline is used for removal of the excess animal fat worked into the skin, extreme care must be taken that no fires are near.

Budgets For Commercial Rabbit Meat Production

Kenneth L. McReynolds, Area Extension Economist and Conall Addison, County Extension Agricultural Agent, Kansas State University

The following budgets show investments, income, expenses and returns for selected herd sizes. Use these data as guidelines in developing your own budgets.

LOW INVESTMENT (2 bucks and 10 does)

A. INCOME

1. Bunnies: 273 bunnies — 3 replacement does = 270 bunnies sold × 4 lb/bunny × 50¢/lb.	\$540.00
2. Culls: 2 does × 8 lb/doe × 20¢/lb	3.20
3. Manure: 12 breeders × 100 lb/breeder × \$3.00/cwt	36.00
TOTAL	\$579.20

B. INVESTMENT

1. Building—use an existing shed	
2. Equipment	
12 individual wire hutches	
30 × 36 × 18", @ \$14	\$168.00
12 individual metal feeders, @ \$2.50	30.00
12 individual metal waters, @ \$2.50	30.00
8 nest boxes (for kindling, @ \$1.50)	12.00
1 used fan (20-24")	20.00
Extra insulation	30.00
TOTAL	\$290.00

C. EXPENSES

1. Feed: (10 does × 4 litters/year × 7 bunnies/litter) — (1 litter or 7 bunnies due to mortality) = 273 bunnies × 16 lb/bunny × 12¢/lb	\$524.16
2. Variable Costs	124.50
3. Interest	
a. Equipment: $\frac{\$290.00}{2} \times 13\frac{1}{2}\%$	19.57
b. Breeding stock: 10 does × \$8.00 = \$80.00 + 2 bucks × \$10.00 = \$20.00; $\$100 \times 13\frac{1}{2}\%$	13.50
4. Repairs: 4% × \$290	11.60
TOTAL	\$693.33

D. Return to Labor and Management —\$114.13

MID INVESTMENT (8 bucks and 100 does)

A. INCOME

1. Bunnies: 3,094 bunnies — 33 replacement does = 3,061 bunnies sold × 4 lb/bunny × 54¢/lb.	\$6,611.76
2. Culls: 3 bucks + 25 does = 28 culls × 8 lb/cull × 20¢/lb	44.80
3. Manure: 108 breeders × 100 lb/breeder × \$3.00/cwt	324.00
TOTAL	\$6,980.56

B. INVESTMENT

1. Building—remodel existing shed	\$1,000.00
2. Equipment	
120 individual wire hutches	
30 × 36 × 18", @ \$14	\$1,680.00
120 individual metal feeders, @ \$2.50	300.00
Automatic water system, individual valve each hutch	320.00
100 nest boxes for kindling, @ \$1.50	150.00
1 electric fan	30.00
Insulation and wiring	185.00
TOTAL	\$3,665.00

C. EXPENSES

1. Feed: (100 does × 4.5 litters/year × 7 bunnies/litter) — (8 litters or 56 bunnies due to mortality) = 3,094 bunnies × 16 lb/bunny × 12¢/lb	\$5,940.48
2. Variable Costs	588.00
3. Interest	
a. Building: $\frac{\$1,000}{2} \times 13\frac{1}{2}\%$	67.50
b. Equipment: $\frac{\$2,635}{2} \times 13\frac{1}{2}\%$	177.86
c. Breeders: 100 does × \$8.00 = \$800.00 8 bucks × \$10.00 = 80.00 $880.00 \times 13\frac{1}{2}\%$	118.80
d. Variable Expenses $\frac{588}{2} \times 13\frac{1}{2}\%$	39.69
4. Repairs: 4% × \$3,665 (building & equip.)	146.60
5. Taxes and Insurance	59.00
TOTAL	\$7,137.93

D. Return to Labor and Management —\$157.37

HIGH INVESTMENT
(25 bucks and 200 does)

A. INCOME

1. Bunnies: 9,688 bunnies – 67 replacement does = 9,621 bunnies sold × 4 lb/bunny × 54¢/lb.	\$20,781.36
2. Culls: 8 bucks + 51 does = 59 culls × 8 lb/cull × 20¢/lb	94.40
3. Manure: 225 breeders × 100 lb/ breeder × \$3.00/cwt =	675.00
TOTAL	\$21,550.76

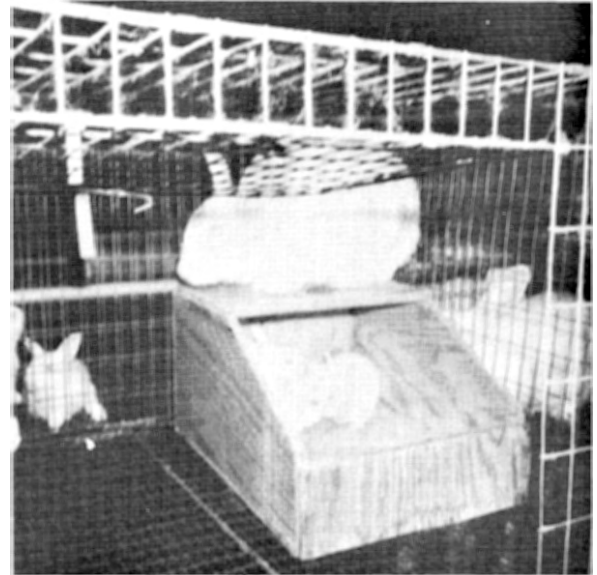
B. INVESTMENT

1. Building	
36 × 120' steel pole barn	\$12,000.00
Site preparation	840.00
Form materials	1,000.00
Concrete (25 yards @ \$40)	1,000.00
Electric wiring, equipment, etc.	1,300.00
Ventilation system	2,060.00
Insulation	2,400.00
Labor	3,700.00
TOTAL	\$24,300.00
2. Equipment	
336 individual pens, @ \$10	\$3,360.00
336 individual feeders, @ \$2.10	705.60
50 creep feeders, @ \$3.50	175.00
Watering system	600.00
TOTAL	\$4,840.60

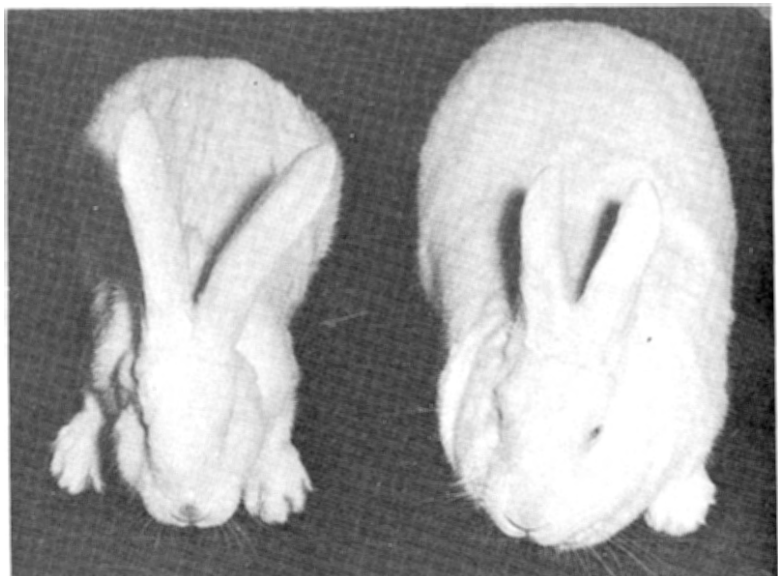
C. EXPENSES

1. Feed: (200 does × 7 litters/ doe/year × 7 bunnies/litter) – (16 litters or 112 bunnies due to mortality) = 9,688 bunnies × 16 lb/bunny × 12¢/lb	\$18,600.96
2. Variable Costs	1,620.00
3. Interest	
a. Building: $\frac{\$24,300}{2} \times 13\frac{1}{2}\%$	1,640.25
a. Equipment: $\frac{\$4,840}{2} \times 13\frac{1}{2}\%$	326.70
c. Breeders: 200 does × \$8.00 = \$1,600 25 bucks × \$10.00 = 250	
1,850 × 13½%	249.75
d. Variable Expenses $\frac{1,620}{2} \times 13\frac{1}{2}\%$	109.35
4. Repairs: 4% × \$29,140 (building & equip.)	1,165.60
5. Taxes and Insurance	345.05
TOTAL	\$24,057.66

D. Return to Labor and Management —2,506.90



Nest Box with Young Bunnies



Good and Poor Body Conformation for New Zealand Whites

Notes

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