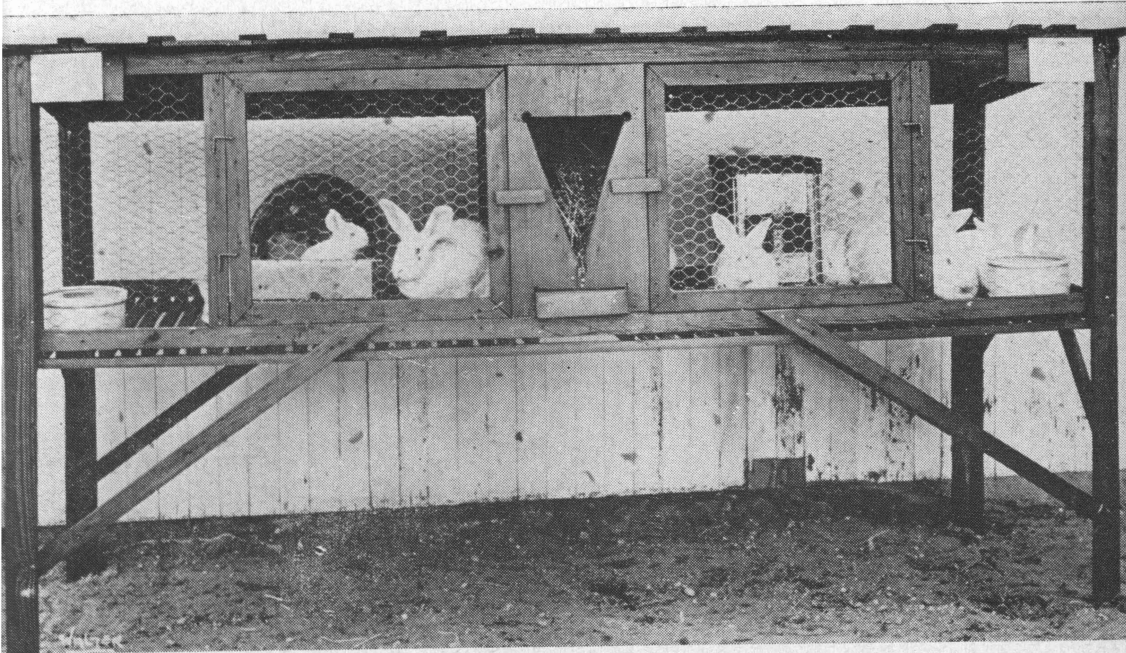


RABBIT RAISING



(Photo Courtesy U. S. Department of the Interior)

Fig. 1. Two Compartment Rabbit Hutch.

Issued by
The Extension Service
Agricultural and Mechanical College of Texas and
The United States Department of Agriculture
Ide P. Trotter, Director, College Station, Texas

Acknowledgment

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Rabbit Raising

By

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Introduction

Rabbits are raised for meat and fur. Little space and inexpensive equipment are required to produce them. Rabbits can be raised on the back lot where space is limited or they may be raised out on the farm. With the large meat breeds it is possible under good management for one rabbit doe to produce three good litters per year or a total of 35 to 40 pounds of dressed fryers.

With the use of home grown grain, properly balanced with a protein supplement, the cost of production can be reduced. Cost per pound for this fine meat compares favorably with that of other meats.

Selecting a Breed

For the production of meat for home use or for market, confine the breed to one of the medium weight or larger types. There are fifty-one recognized breeds of rabbits. The various breeds range in size from six pounds for adult rabbits with some of the fur breeds to 9 pounds and up to 16 pounds for some of the giant meat breeds. The heavier breeds are most popular for the production of meat.

New Zealand Whites, New Zealand Reds, Flemish Giants and Chinchillas are among the breeds suitable for the produc-

tion of meat and fur. Breeding stock can be secured from reliable breeders in Texas and other states. Texas A. and M. College has no rabbits for distribution.

The table on page 4 showing standard recognized data on several of the breeds may assist in making a selection. There are many other good breeds which one may select. The best breed for any individual may be that breed "liked" best.

Selecting the Foundation Stock

Mature animals or young rabbits, just weaned, may be used as a start. The beginner may start with one young male and two or three young females or the start may be made with one or two bred does.

The beginner should start on a small scale and grow into the enterprise. Stock can be secured from local breeders and state and national organizations will furnish names of reliable breeders. Only strong, vigorous animals with type and conformation should be used for breeders.

To insure against introducing diseases, new stock should be isolated in separate quarters for observation for a week or ten days before releasing into the rabbitry.

STANDARD MATURE*

Breed	Weight in Pounds		Primary Value
	Buck	Doe	
American (Blue and White)	9	9	Meat, fur, show
American Silver Fox..... (Black and Blue)..	9	10	Fur
Angora Woolers	6 and over	6 and over	Wool and show
Belgian Hare	8	8	Meat and show
Belgian Heavy Weight.....	9	10	Meat
Beveren, White	9	10	Fur
Checker Giant	11	12	Meat and show
Chinchilla	10	11	Meat and fur
Flemish Giants	13-14	15-16	Meat and fur
New Zealand (Red and White)..	9-10	10-11	Meat, fur, show

*As recognized by the American Rabbit and Cavy Breeders Association.

Housing and Equipment

The two-doe rabbit hutch, fig. 1, as shown on the cover page is recommended for back-yard rabbit production. Ten to fifteen square feet of floor space is required for each doe and her family. This will be adequate space for the doe and litter until the litter is weaned or ready as fryers (see fig. 4, pages 8 and 9 for details).

This type of hutch is easily cleaned and can be moved around under shade trees during hot weather. Five-eighths inch mesh hardware cloth may be used for floor instead of slats as illustrated. The hardware cloth floor is easier to keep clean and assists in preventing accumulation of

moisture on floor. However, the hardware cloth has a greater tendency to cause sore hocks. When wire cloth is used, place a 1"x12"x30" board inside for the rabbits to rest upon when not active in the hutch. Similar units can be added from time to time and a modification of this plan can be used in making doubledeck hutches where space is limited.

The feed rack for hay in the center will serve both compartments of the hutch. The shallow trough underneath the hay rack will prevent waste of hay and it may also be used for feeding grain. However, most rabbit producers prefer a separate feed crock or container. In addition

to the hutch proper, each compartment should be provided with crockery utensils for water, a crock or feed trough for grain and a nest box.

Care and Management

Breeding: Rabbits are ready for breeding upon reaching maturity. The age of maturity will range from around 6 months for the small breeds to 9 to 12 months for the giant breeds. 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.

With proper management, three good litters can be raised each year. Allow a short period of rest after weaning litter for conditioning before re-mating the doe. In mating, the doe should always be placed in the buck's hutch and as soon as mating occurs, she should be removed.

A test mating may be made again after 14 days as a proper check up. Records should be kept showing the date of mating as well as other desired data for reference.

Kindling: Kindling will occur on the average around 31 or 32 days after mating, sometimes a day or two under or over this time. For this reason, the nest box should be placed in the hutch on the 25th to 27th day after mating.

A small amount of straw for nesting material should be placed in the box. The doe should be left as quiet as possible a day or so before and after kindling. Does usually are nervous at this stage and any excitement may cause them to destroy their young. Should a doe destroy her young, give her another chance. If she does it habitually, use or sell her for meat as a "roaster" when fat.

Rabbits stomp their hind feet against the floor of the hutch when excited. The presence of stray dogs, cats, snakes or varmints during the night may cause the mother rabbit to become excited. In leaping into and out of the nest box and in giving her stomping distress signal, she sometimes flattens out her tiny young in the nest.

The Young: Six to 8 young to the litter are usual; however there may be as many as 10 to 12 to the litter. In such cases the litter should be reduced to 6 or 7 of the strongest, most vigorous prospects. The litter surplus may be given to another doe kindling too small a number around the same date. Only the strong vigorous young should be saved in any event.

Twenty-four hours after kindling, quietly inspect the nest to remove any improperly developed or dead young. Then leave the doe and litter undisturbed as much as possible for several days. The young should be left in the hutch with the doe until they are at least eight weeks old.

By this time they are weaned and on full feed with the regular ration. At eight weeks of age the fryers should be ready for use or for market and should be marketed or transferred to another hutch so as not to delay the breeding program.

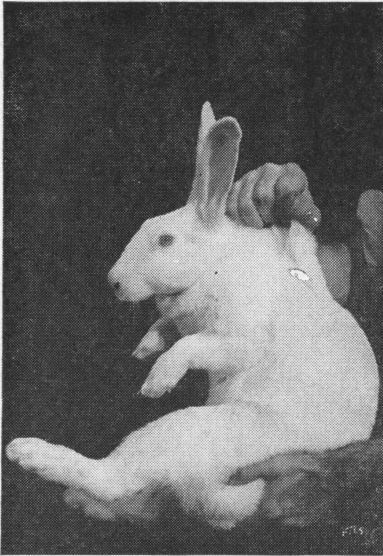


Fig. 2. Proper way to lift a medium weight rabbit.

(Photo Courtesy U. S. Department of the Interior)

Handling Rabbits: Rabbits should be handled with care. See figures 2 and 3 which show the proper ways to carry rabbits to insure against injury. Rabbits should not be carried or held by the ears.

Feeding

Rabbits can be fed a variety of home grown grains and legume hays. Rabbits prefer whole grain in the following

order: oats, wheat, grain sorghums, barley, and rye.

Whole corn is not recommended as the rabbits are inclined to eat only the kernels and waste the rest of the grain. If corn is used, it should be fed in the form of meal. Where grains in the mixture are fed in ground form, the meal should be slightly dampened to facilitate feeding and prevent waste. Grains may be mixed pound per pound and interchanged.

A good legume hay should be kept before the rabbits in the hay manger of the hutch at all times. For many sections of Texas this practically means alfalfa hay. Alfalfa hay is one of the best hays to feed; however, sweet clover, lespedeza, cowpea, vetch and peanut hays are good. With legume hays, the green colored, leafy and fine stemmed hay is best. It should be free of any mold.

Chop the hay into short lengths to prevent waste. The mixture of grain and alfalfa feed may be supplemented with root and vegetable crops, such as the roots and tops of turnips, carrots, radishes, and sweet potatoes. Tender green lawn clippings are often fed. The vegetables should be sound and fresh; otherwise do not use them for feed. Vegetable crops should not be allowed to accumulate in the hutch and become moldy.

Exercise care in feeding the green crops. Start gradually and feed as a supplement to

and not to replace the regular grain and legume hay ration; if this is not done gradually, digestive disturbances may occur.

Dry Does and Herd Bucks:

Keep legume hay before them. Feed at regular intervals the quantity of grain they will consume in approximately 30 minutes. The frequency of feedings will be dependent on the condition of rabbits.



Fig. 3. Proper way to lift and carry a heavy rabbit.
(Photo Courtesy U. S. Department of the Interior)

Doe and Litter: Keep feed, both grain and legume hay, before them at all times. Feed the amount of grain and protein supplement that will be consumed and cleaned up daily. Avoid an accumulated carry-over of the grain mixture to insure against contamination.

Roasters: Adult rabbits may be fed out and finished as roasters or for barbecue. The surplus adult does and herd bucks, which are culled out from time to time, may be put on full feed and quickly finished for the table or market.

Fryers: Young rabbits may be kept in the hutch with the doe until ready to slaughter. In this way there is no let down caused by any change. However, should the fryers be separated from the doe, they should be kept on full feed, same ration until ready for use.

Water: An adequate supply of clean water should be kept before the rabbits at all times. Clean water means clean containers as well.

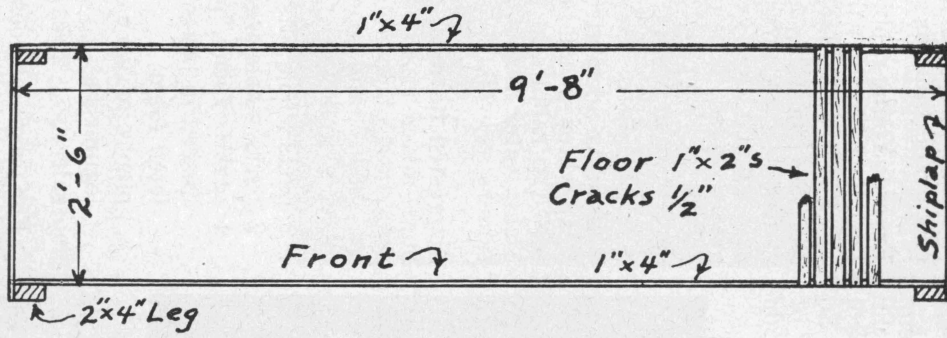
Suggested Rations: A good home-mixed ration for dry does, herd bucks and developing bucks and does can be mixed as follows:

- 2 parts whole oats or barley
- 2 parts whole wheat
- 1 part soybean, peanut, or linseed in pea-size or pelleted form
- plenty of good quality legume hay
- salt

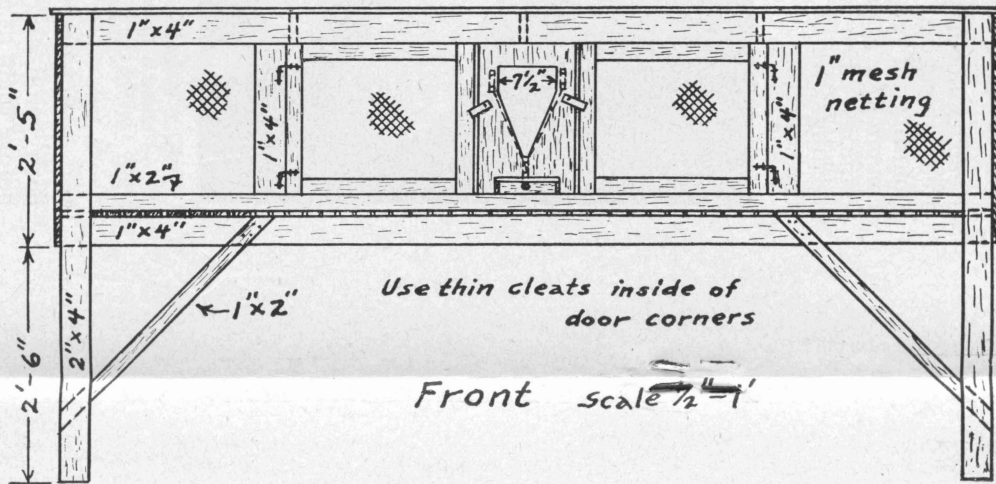
For pregnant does and does with litters, increase the protein supplement in the above ration to two parts of soybeans, peanut or linseed.

- Another good ration:
- 100 lbs. whole oats
 - 100 lbs. milo
 - 100 lbs. soybean pellets

TWO DOE RABBIT HUTCH



Floor framing and legs

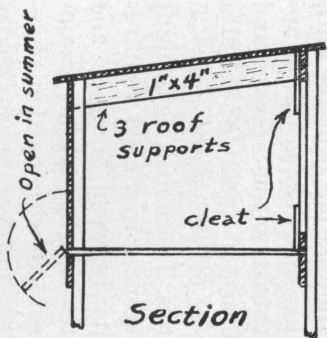


Use thin cleats inside of door corners

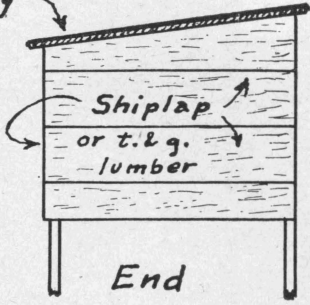
Front scale 1/2" = 1'

Fig. 4

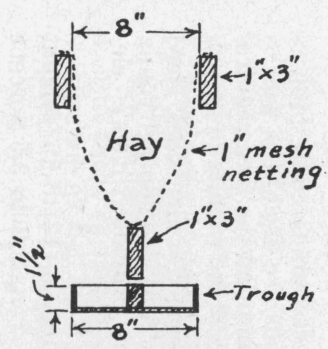
Roof - Shiplap 10' long, covered with roll roofing or sheet iron.



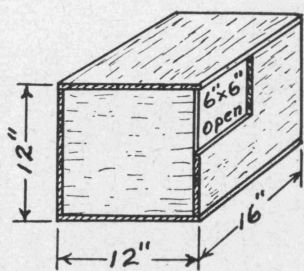
Section



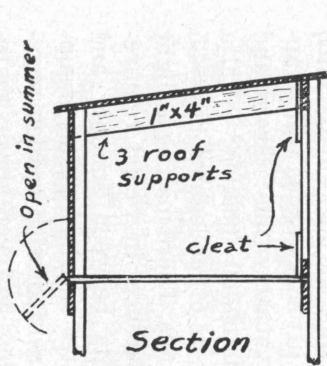
End



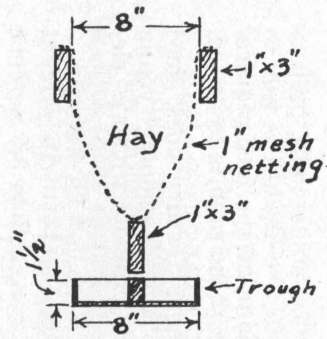
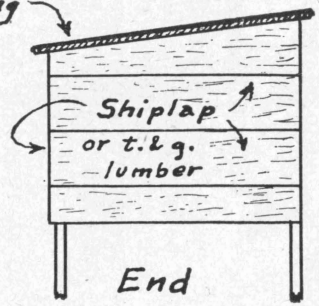
HAY RACK AND TROUGH SECTION Scale 1" = 1'



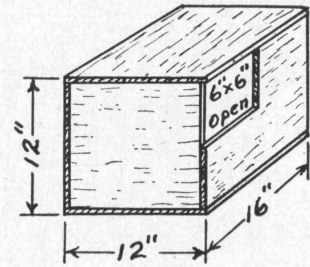
NEST BOX



Roof - Shiplap 10' long, covered with roll roofing or sheet iron.



HAY RACK AND TROUGH SECTION
Scale 1" = 1'



NEST BOX

300 lbs. alfalfa
salt

A protein in addition to grain is necessary to balance the diet properly. The pea-size oil cake and the protein supplement pellets are the easiest form to mix with the grain feed and in this case no moistening is required. Protein meals pressed into pellet form are commercially prepared and available through commercial mixed-feed channels. These are two types of commercially prepared pelleted rations on the market—the all-grain pellet to be fed with hay and the complete pellet (“green pellet”) which usually contains all food elements for a balanced ration. Pelleted feeds are easy to feed and require little storage space. However, they are usually more expensive than a ration composed of feeds in their natural form.

Where commercially prepared feeds are used, it is well to keep in mind the feed requirements of the rabbits to be fed.

Rations for dry does, herd bucks and developing young should provide these elements:

Protein.....12 to 15 percent
Fat.....2 to 3.5 percent
Fiber.....20 to 27 percent

Nitrogen-free
extract.....43 to 47 percent

Ash or
mineral.....5 to 6.5 percent

Rations for pregnant does and does with litters should

contain more protein as follows:

Protein.....16 to 20 percent
Fat.....3 to 5.5 percent
Fiber.....14 to 20 percent

Nitrogen-free
extract.....44 to 50 percent

Ash or
mineral....4.5 to 6.5 percent

For small herds of rabbits it may be impractical to feed two rations. In such cases the higher protein ration for pregnant does and does with litters can be fed to the entire herd.

A 10 to 12-pound doe and her litter of seven will consume during the sixth week about one and one-fourth pounds of the grain and protein ration daily, approximately six ounces for the doe and two ounces each for the young.

Feed requirements for the doe and litter of seven from the time the doe is mated until the litter is weaned will be approximately this: Grain and protein—50 pounds; alfalfa hay or other legume hay—35 pounds. There may be a slight difference in feed requirements between summer and winter or when ration is supplemented with garden vegetables; however, approximately two pounds of grain and protein mixture plus one and one-half pounds of feed will be required for each pound (live weight) of fryers produced up to weaning time.

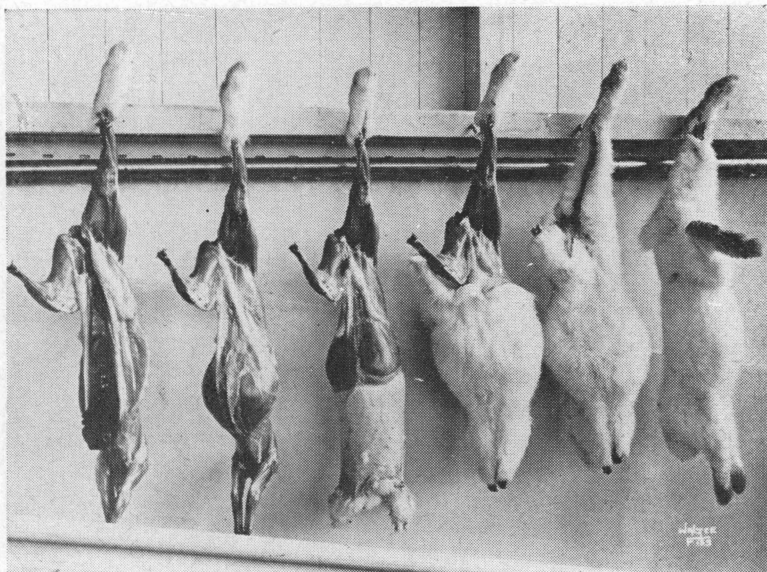


Fig. 5. Steps in slaughtering rabbits.
 (Photo Courtesy U. S. Department of the Interior)

Slaughtering and Preparation

In slaughtering and dressing rabbits the following steps are suggested:

1. To kill, first stun the rabbit by striking it behind the ears with a stick or edge of open hand while the rabbit is held up by both hind legs.
2. Hang carcass on a hook by one leg, and remove head immediately to facilitate good bleeding. (see fig. 5) Note that 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 the entrails, but leave the liver in place.
6. Remove the other hind leg by severing at the hock.
7. Rinse the carcass in cold water, not more than a few minutes.
8. Cut meat in pieces as indicated in fig. 6. Place meat in refrigerator or wrap in cellophane or other container for storage in cold storage locker until ready to use.

Skins: Rabbit skins are valuable and where a sufficient number of skins are produced from the rabbitry, a ready market can be had. The skins are used extensively in the manufacture of furs, fur gar-

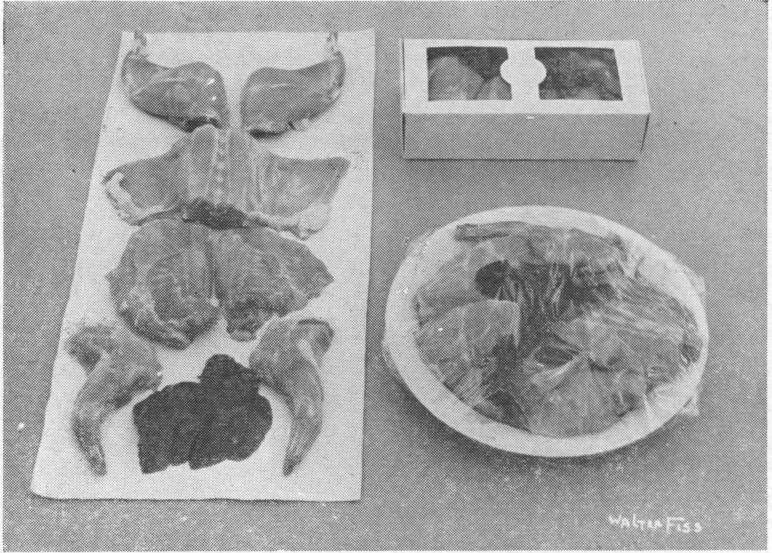


Fig. 6. Method of cutting up fryer rabbit and suitable containers for carcass.
 (Photo Courtesy U. S. Department of the Interior)

ments, as well as in the felting industry. Some of the highest quality men's hats are made from rabbit fur. Solid white rabbit furs lend themselves better than others to dyeing into the various colors in processing. They usually sell for more than the colored skins.

Rabbit furs are sold under 35 to 40 different names such as: Arctic Seal; Australian Seal; Baffin Seal; Baltic Black Fox; Bay Seal; Beaverette Bluerette; Buckskin Seal; Castorette; Coney; Coney Beaver; Coney Leopard; Coney Seal; Ermilene; French Mole and many others.

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 properly the skins when

dressing rabbits and prepare them for marketing.

Shapers for skins can be made of No. 9 galvanized wire four feet to five 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 seven inches wide at one end and tapering to four inches wide at the other end. For large rabbits weighing ten pounds or more, the dimensions of shaper should be 30 inches long x 9 inches at base by 4 inches wide at narrow end. Place the skin on shaper while still warm. Have the flesh side out with the fore part over 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 clothes pins. 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 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.

Diseases

The control of diseases among domestic rabbits is often more a matter of prevention than cure. With strong, healthy stock to begin with and with continuous strict sanitary precautions, little trouble should be had from diseases. The most common troubles such as diarrhea, sore hocks, sore eyes, mange or ear canker can be successfully treated. When such diseases as hemorrhagic septicaemia and coccidiosis infections occur, consult a veterinarian. Serious outbreaks of these diseases may necessitate destroying the affected stock, and thoroughly disinfecting the premises.

Sanitation: Clean and disinfect hutches, water crocks and feed utensils at frequent, regular intervals. The nest box should be cleaned thoroughly and treated with disinfectant solution between litters. It may be necessary to clean nest box and replace with new nest material by the time the young rabbits have reached sufficient size to make a change. To clean utensils,

scour and wash in soapy water to which a disinfectant solution has been added. After washing in disinfectant solution, all vessels should be rinsed in clean water and sunned if possible. Chlorine and cresol solutions are often used as disinfectants. Ordinary lye water is economical. Take additional precautions in handling disinfectant solutions to protect other members of the family and visiting children. The rabbitry has quite an attraction for children of the neighborhood.

Diarrhea. Diarrhea in rabbits may occur with all ages. It is sometimes caused by infectious or parasitic diseases but is often caused by incorrect feeding. Any sudden change in the rations being fed will sometimes cause this disturbance.

Isolate sick animals, reduce the amount of feed, especially green feed, with small amounts at each feeding. Feed scalded milk or a mixture of bran, rolled oats or bread in scalded milk. A small dose of castor oil will often assist in clearing up the trouble. Bismuth subnitrate or bismuth subgallate in doses of three or four grains is recommended in acute cases of diarrhea.

Sore Hocks: Sore hocks often are the result of bruises caused by rabbits stomping their feet in wet filthy hutches. Heavy rabbits are more apt to have this trouble. The cause is usually a mechanical one and wire floors that sag or have rough spots should be replaced with a smooth floor until the trouble has disappeared. Smooth boards may be

placed over the wire floor temporarily. In extreme cases the rabbits may be placed in a pen or well drained clean sod to facilitate healing. Clean and disinfect hutches regularly and allow them to dry; soak affected parts in warm soapy water, remove crusts and dry thoroughly. Apply carbolated vaseline, zinc ointment or iodine ointment every other day.

Sore Eyes: Usually caused from infection in filthy hutches. Clean and disinfect hutches. Wash eyes with boric acid water. Apply a good ointment should sores occur.

Ear Mange or Ear Canker: Ear mange is caused by small mites which irritate the skin around the outer and in the inner parts of the ear. Crusts and scabs are often found inside the ear. First symptoms may be noted by excess moisture on the inner surface of the ear; nervousness and twitching of the head and neck (wry neck) may follow in advanced stages. Treatment for ear mange is simple and effective, if done in the early stages. Remove all scales and crusts as suggested under treatment for sore hocks and apply the following: One part iodoform ten parts of ether; 25 parts cottonseed or olive oil. Camphorated oil is recommended also.

Skin Mange: Skin mange is caused by mites similar to ear mange.

Symptoms—reddened, scaly skin, hair inclined to fall, and evidence of itching by scratching or biting. Yellowish crusts

of dried blood serum may be present.

Treatment—wash affected region with warm, soapy water, clip hair back to healthy skin, and apply mixture of one part flowers of sulphur and three of lard. Repeat treatment as required.

Prevention—clean and disinfect hutches and isolate affected animals so as not to contaminate others.

Ringworm: Ringworm is highly contagious. It is caused by a fungus or moldlike organism.

Symptoms—usually starts on head with patches of scaly skin with red, pinhead formations around base of hairs. May appear on hind feet or other parts of the body. Evidence of itching may occur in advanced stages.

Treatment—clip or shear one-half inch outside affected area. Wash with warm, soapy water, dry and apply tincture of iodine. Use gloves and clothing that can be boiled or destroyed after handling affected animals. Use care to avoid infection of hands or face. Isolate animals and disinfect hutches.

Mucoid Enteritis, or Bloat: Mucoid enteritis or bloat may affect rabbits of all ages regardless of sex, but it is more common among the young, during the first 16 months. Observations indicate that it is not infectious but the exact cause is not known at present.

Symptoms—lack of appetite; thirst; eyes squint; dull, rough fur coat; grinding of the teeth; abdomen often bloats.

Treatment — no effective treatment known. Remove all feed and water for approximately 48 hours. Then feed small quantities of green vegetables for several days. Allow only small quantities of water during this period to prevent over-drinking. After a week, start affected rabbits on limited rations of alfalfa hay at first, then gradually add grain mixture.

Fur-Eating Habit: Rabbits sometimes eat their own fur or the fur of other rabbits in the hutch. Fur-eating is most apt to be caused by the ration being inadequate in quality or quantity. This sometimes may be caused by the protein content being too low. In such cases, increase the amount of legume hay and soybeans, peanuts or linseed to the ration.

Hemorrhagic Septicaemia: One of the most common evidences of this disease is the form of contagious nasal catarrh (snuffles). Do not confuse with ordinary colds which are more temporary. Isolate affected animals in clean, dry, well-ventilated quarters. Feed plenty of green feed. Apply with a medicine dropper a mixture of three drops of oil of eucalyptus added to one ounce of olive oil or liquid petroleum, to nostrils. There seems to be no highly successful remedy for this disease in any of its forms. All affected animals may have to be destroyed and the quarters thoroughly disinfected to obtain absolute control.

Long Teeth (Buck Teeth): Usually inherited, but sometimes the result of injury.

Symptoms— upper incisors curl back and lower ones protrude.

Treatment— none. Fryers may be carried through marketable size by trimming teeth with side cutting pliers. Save no breeding stock from rabbits showing long teeth.

Liver Coccidiosis: Caused by a microscopic one-celled animal parasite.

Symptoms— usually none, except white, circular spots on liver. In some cases the liver may be enlarged enough to be felt in living animal.

Treatment — none. Mild cases often clear up. Extreme cases are fatal. Use care in handling affected animals to prevent spread of the disease through the rabbitry.

Intestinal Coccidiosis: Caused by one of four common one-celled animal parasites which multiply in the lining of the intestine of domestic rabbits.

Symptoms—mild cases, none except on microscopic examination of droppings or intestinal contents of wall of intestine. More severe cases may show up with diarrhea, loss of flesh, hunched position, and little interest in food. "Pot belly" on recovery.

Treatment—usually none. If reinfection does not occur, the disease runs its course in four or five days up to 10 to 14 days. Resistance is often developed by the individual animal with no symptoms shown, even though the animal may contract the disease again. Drug control, though possible to some degree, is not considered practical.

Rabbit Manure Is Valuable

Rabbit manure is a good

fertilizer for flower beds, the vegetable garden and for the orchard. There will be little loss of chemicals and best results are obtained when the manure is applied immediately and directly into the soil. Where it is not convenient to do this from day to day, a compost heap is recommended.

A good compost heap can be made by placing alternate layers, 3 to 12 inches in thickness, of manure and refuse vegetation such as lawn and hedge clippings, and hay leaves. A covered bin or a pit should be provided for this

purpose. Water should be added occasionally sufficient to keep the heap moistened but not too wet. The heap should be packed down from time to time to exclude excess air. A thin layer of soil over the compost heap will aid in conserving the nitrogen and in keeping down objectionable odors. Should excess heat occur as evidenced by smoking, fork up the heap and add more water. It is best to provide a covered bin or pit for this heap as the full value of the fertilizer will be retained where it is not exposed to weather and where leaching is prevented.

Table 1
APPROXIMATE FERTILIZING CONSTITUENTS (IN PERCENTAGES) IN DIFFERENT ANIMAL MANURES

Kind	Water	Nitrogen	Phosphoric Acid	Potash
Horse	59	0.70	0.25	0.77
Dairy Cattle	79	0.57	0.23	0.62
Fattening Cattle.....	78	0.73	0.48	0.55
Sheep	64	1.44	0.50	1.21
Swine	74	0.49	0.34	0.47
Hen	55	1.00	0.80	0.39

Table 2
RABBITS THAT HAD BEEN FED A RATION COMPRISING CEREAL GRAINS, A PLANT PROTEIN SUPPLEMENT, GOOD QUALITY ALFALFA HAY, AND SUCCULENT GREEN FEED

*Samples of Rabbit Manure	Water	Organic Material	Nitrogen	Phosphoric Acid	Potash
No. 1—Clear, air-dried..	4.70	92.19	2.57	1.42	0.48
No. 2—Clear, air-dried..	6.49	90.49	2.30	1.36	0.71
No. 3—Mixed with waste, straw, alfalfa. Taken from a manure pit	35.01	40.72	1.81	Undetermined	Undetermined

*As reported by United States Rabbit Experiment Station.

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