



Domestic Rabbits And Their Care

"Domestic rabbit" generally refers to tame rabbits maintained in cages, pens, or other enclosures. They are distinguished from closely related animals existing in the natural or wild state. All breeds and varieties of domestic rabbits were developed from the European rabbit (*Oxyctolagus cuniculus*). In some areas, European rabbits exist in the wild state, so the term "domestic rabbit" must refer to those maintained in close relation to man. The domestic rabbit is not native to the United States.

Rabbits and hares inhabit most of the temperate regions of the world. Some old classification systems had them related to the rodents. Like rodents, rabbits possess chisel-like or gnawing teeth that continue to grow if not worn by chewing. Rabbits, however, have two upper and two lower incisor teeth and two smaller pulp teeth behind the upper incisors. Rabbits have a total of six teeth rather than four, as is characteristic of rodents.

Hares differ from rabbits because they are born fully haired, with their eyes open and are able to run within a few minutes after birth. Their legs are longer than those of rabbits, and they take long leaps when running. Young are born in the open without a nest. In contrast, rabbits' young are born in a fur-lined nest, and are blind, helpless, and hairless at birth.

Breeds of modern domestic rabbits have developed since the 18th century. There are now several hundred varieties throughout the world, varying in size, color, type of hair coat, and other characteristics. In 1977, 38 breeds were recognized by the American Rabbit Breeders Association. Rabbits are produced for meat, research, wool, as pets, or for a hobby.

The New Zealand White and Californian breeds are marketed for meat. These are medium-weight breeds (8 to 12 pounds), providing a carcass size to which the retailers are accustomed. Skins or pelts find some use in industry. Blood and organs and tissues used as specimens for biological and medical research are important by-products from the large slaughtering units. Some slaughterhouse by-products are used in pet foods. Production of wool from Angora rabbits was popular at one time, but presently there is little commercial production of angora wool.

A growing phase of the rabbit industry is that of supply animals for laboratory or research use. Current usage for this is about 600,000 annually.

Official statistics are unavailable on the number of rabbits produced annually in the United States. It was estimated in 1977 that 10 to 12 million pounds of rabbit meat were consumed annually (some was imported). Approximately 6 to 8 million rabbits are produced annually for all purposes. Peak production in 1944 was estimated at about 24 million rabbits. In times of national emergency, production of rabbits traditionally increases.

Housing

Many types of housing for rabbits are used. The more popular ones are (1) suspended wire cages inside a shed or building and (2) individual weatherproof rabbit hutches raised above the ground. The size of

cages depends on the breed of rabbit and the objectives for tending them.

Common cage sizes are 30 inches × 30 inches, 30 inches × 36 inches, and 30 inches × 40 inches. These sizes can house a doe and her litter for dwarf, medium-sized, and giant rabbits, respectively.

Housing must keep the rabbits dry, without drafts, and must provide an environment with temperatures of at least 40°F and not more than 90°F.

Watering and feeding equipment ranges from cans and crocks to self-feeders and automatic waterers. The hobbyist with only a few rabbits can operate with homemade feeders and earthenware water bowls. The commercial producer with 20 or more breeding does will prefer large self-feeders and automatic drinking valves. Additional equipment includes wood or metal nest boxes.

One of the most important considerations for a rabbitry is adequate ventilation. Rabbits during warm weather must have a constant flow of fresh air. The minimum ventilation rate, regardless of season, must be ten total air changes every hour. If you smell ammonia fumes or see moisture condensing on rabbitry walls and windows, you must increase the ventilation rate. Avoid drafts, however, regardless of ventilation method.

Diet and Feed

The domestic rabbit is primarily herbivorous and consumes most types of grains, greens, and hay. Diet, whether homegrown or commercially prepared, consists almost entirely of ingredients from plant sources. Although a few producers still rely on homegrown feeds, a major portion of rabbit feed is commercial, pelleted feed. Since the rabbit can utilize a certain amount of forage, it has a place in food production by making use of some noncompetitive feeds.

Rabbits habitually practice coprophagy, sometimes referred to as pseudoruminantion. This refers to the production of two kinds of fecal matter, one hard and one soft, the latter consumed directly from the anus as it is excreted. This practice begins in rabbits shortly after they begin eating solid feed at about 3 to 4 weeks of age, but it is not practiced by germ-free rabbits. Fermentation in the large intestine and the practice of coprophagy probably provide the necessary amounts of most B vitamins, provide some bacterially synthesized protein, and permit further digestion of some nutrients by multiple passage through the digestive tract. The high digestibility of forage protein in rabbits may be due partially to coprophagy.

Observation of rabbits indicates they prefer a pelleted diet to one in a meal form. They adjust to a meal diet and accept it satisfactorily, but during the adjustment period, intake may be low and feed spillage excessive. Some may refuse to consume a nonpelleted diet. Unless fat or molasses is added to a diet, dustiness may be a problem with meal-type feeds.

Physical form and particle size of feed ingredients may be factors to consider in rabbit diets. The particle size of alfalfa may influence the occurrence of enteritis. Fine grinding (more than 25 percent passing a .25-mm screen and 90 percent passing a 1-mm screen) tends to promote diarrhea; coarse ground material does not. The presence of undigestible fiber of large particle size may be necessary for normal function of the rabbit digestive tract.

Acceptability of certain feeds by rabbits is a nutritional problem. Adult rabbits show a preference for barley-based diets with sugar. They prefer plant proteins, (soybean meal and cottonseed meal) over meat meal and fish meal. Diets with 5 percent corn oil are preferred over similar diets without corn oil.

The feeds used should be determined by relative costs and availability. Green feeds are widely fed to rabbits, especially by small producers. They are generally succulent and highly palatable. However, the cost per unit of nutrients is too high for the commercial producer, and the high water content renders them bulky and too low in energy for efficient meat production and for lactating females.

Salt requirements are unknown for rabbits. Addition of .5 percent salt to the diet or provision of salt blocks (free-choice) is adequate. Disadvantages of salt blocks include greater cost, greater labor, and cage corrosion in moist climates.

Health Care

In general, antibiotics have not shown consistent beneficial effects on growth, but in some cases they have aided in the control of enteritis. Sulfonamides help control coccidiosis, and nitrofurans have limited effect on enteritis. At present only two drugs are permitted by the Food and Drug Administration (FDA) in rabbit feeds.

Oxtetracycline (Terramycin) at a level of 10 grams per ton is permitted as an aid in stimulating growth and improving feed efficiency.

Sulfaquinoxaline at .025 percent fed continuously for 30 days, or intermittently for two days per week,

or .1 percent for two weeks may be included as an aid in controlling coccidiosis.

Research shows that chlortetracycline (Aureomycin) and oxytetracycline reduce the incidence of enteritis and mortality but have no effect on young after enteritis appears.

Zinc bacitracin has no effect on growth but reduces the severity of enteritis.

Virginiamycin has produced a growth response.

Sulfamethazine, sulfamerazine, and sulfaquinoxaline control liver coccidiosis. Intestinal coccidiosis is successfully treated with sulfamonomethoxine and sulfadimethoxine.

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