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Rabbit Care and Husbandry **By Dr. Beth Rhyne**

Domesticated rabbits have been classified as the third most popular pet species. Although numerous breeds and sizes exist, the most common are the dwarf breeds (average 2-4 pounds) and the mini breeds (average 4-8 pounds). Standard/utility breeds average 8-12 pounds and the giant breeds range between 12-25 pounds. Although the average life expectancy for pet rabbits is 7-8 years, some can reach 15 years of age or more. Male rabbits will reach sexual maturity at 6-10 months of age, and females at 5-9 months. Both sexes benefit from surgical neutering for both behavioral and health reasons, such as easier temperament and preventing reproductive cancer. The rabbit's pregnancy cycle averages 31 days with a litter size of 4-10 baby bunnies. The mother may only nurse one or two times a day, and the babies are typically weaned at 4-6 weeks of age. Because rabbits are considered prey species (like most exotics), they will tend to hide symptoms of illness for days to weeks. Therefore any changes observed by the owner should never be taken lightly and warrants a trip to the vet as soon as possible.

NUTRITION

As a "hind-gut fermenter", rabbits digest the majority of their food in the cecum (comprising nearly 40% of the GI tract) and large intestine using a variety of bacteria and protozoa. To properly maintain this population and normal motility, rabbits should be fed a consistent balance of free-choice hay, measured pellets, and fresh vegetables. For years pellets have been offered to rabbits as a sole or primary source of food. Originally formulated to "fatten" and rapidly grow rabbits for the meat and fur industry, pellets contain far more calories, protein, and calcium than necessary for a typical pet, and too little fiber. The consequence is that the majority of domestic rabbits become obese, and numerous health problems may result. The best type of pellet to feed adults is made of timothy hay--NOT alfalfa, which is far more common and inexpensive. The timothy-based pellet provides not only a higher amount of fiber for a healthy GI tract (ideally 17-25% minimum), but also a more balanced amount of protein and calcium, which in excess can lead to disorders such as urinary stones or obesity. In general, a normal adult rabbit should be fed ¼ to ½ cup of pellets per 5 pounds (or 2.3 kilograms) of body weight A DAY. More or less may be needed depending on concurrent health issues, such as obesity, pregnancy, lactation, or illness. Only fresh pellets that have been purchased within two months should be fed to avoid molds, mildews, and decreased nutrient content.

For normal digestion to occur, rabbits should always have access to a fresh supply of high quality grass hay. Due to the lower protein and calcium content, grass hay, such as timothy, oat, orchard, or brome, is far preferable to legume hay, such as alfalfa, clover, peanut, or pea. As with alfalfa pellets, an excess of protein and/or calcium in hay can lead to urinary stones or obesity. Legume hay (such as alfalfa) can be fed the first six months of life while growing, fed in combination with timothy hay, and then stopped altogether after six months.

In addition to pellets and hay, rabbits should also be offered a small amount of vegetables on a daily basis. As a general rule, about 1 cup of veggies should be given per 4 pounds of body weight A DAY. Vegetables appropriate for rabbits include red leaf, romaine, or buttercrunch lettuce, cilantro, kale, parsley, broccoli tops, carrot tops, collards, beet greens, cabbage, spinach, alfalfa sprouts, and carrots. The selection of fresh veggies should change regularly as some will contain higher amounts of minerals, such as calcium, and therefore could be dangerous if fed in high amounts. These veggies should always be thoroughly washed and offered in small pieces. Fruits, such as peaches, bananas, and apples can be given in much smaller amounts as a treat. Uneaten fresh foods should be removed after several hours to prevent molds and spoilage.

Rabbits should also have access to water that is offered from either a sipper bottle or heavy ceramic bowl. The water should be changed daily and the container cleaned. Since rabbits cannot survive longer than 24 hours without water (and possibly less if the weather is hot), water availability should be checked once to twice a day.

Dietary supplements for rabbits are questionably necessary, especially if all other aspects of the diet are balanced and enough fiber is consumed. All of these supplements are given in hopes of preventing intestinal disorders such as stasis (or slowed down GI tract), or obstructions. However to date none have been proven to truly work. The most commonly used supplements include papaya or pineapple enzymes, pancreatic enzymes, laxatives for hairballs, and yogurt cultures. Papaya and pineapple contain an enzyme, papain, which is reported to digest protein. If given orally, the enzyme may help digest hair and decrease the incidence of hairball formation. One papaya tablet or one tablespoon of fresh or frozen pineapple can be given per 5 pounds of rabbit twice a week. An easy method to prepare the pineapple involves pureeing a whole fresh pineapple in the blender and then freezing into ice cube trays. One cube can then be thawed when a dose is needed. Pancreatic enzymes are given in the form of powder crystals added to pellets to assist in the breakdown of many proteins. Hairball laxatives (usually flavored for cats) are also occasionally given orally to aid in lubrication and movement of material in the stomach and intestines. In addition, fruit flavored yogurt with live cultures can be fed once a week to help maintain a healthy bacterial population in the intestinal tract for digestion.

HOUSING

Outdoor rabbits are prone to attacks from dogs and wildlife, as well as infections from maggots, fleas, cuterebras (large burrowing worms in the skin), mites, and other parasites. Therefore, rabbits are likely to remain healthier if housed exclusively indoors. An indoor cage should be large enough to allow for normal hopping (minimum of 2'X3'X2') with an area for sleeping and an area for being active. Half of the cage should be solid wood or plexiglass to prevent foot sores, and the other half mesh with 14 Gauge wire for feces/urine to easily fall through. Cages should be well ventilated and easily cleaned. Some rabbits may chew at the metal mesh so it's important the cage is not made of lead or zinc or coated with a toxic paint.

Since many rabbits will deposit urine and feces in the same place each time, they can be easily trained to a litter box. This is accomplished by spending several days with the rabbit and placing him/her in the box repeatedly, especially when beginning to lift the tail before urinating. The rabbit should then be kept in the box until he/she has used it and then allow him/her to hop away. It may help to place several fecal pellets into the box as well. It's also helpful to place the box in the area the rabbit tends to use most often in the cage, as well as be easily accessible from the outside. Safe litters include recycled newspaper pellets, Carefresh cardboard bedding, hay, and wheat litter. Clumping clay litters will work but not desired since rabbits will often eat the litter on occasion.

In addition to keeping rabbits healthier if living inside, they will also be much happier if given more personal attention while inside. Free roaming of the house is a great way to encourage exercise and socialization. It is important however to ensure the rabbit is never allowed unsupervised exercise.

Several precautions should also be taken to “rabbit proof” the house. Small tight areas should be eliminated and access to electrical and phone cords should be removed. All plants, chemicals and cleaners should also be out of reach. It is very common for rabbits to chew on wooden furniture or wall/door corners. Wooden toys inside of the cage can curb the desire for constant chewing when out of the cage. Many can be adapted to a leash or harness and taken outside to enjoy fresh air and fresh grasses.

HANDLING

Rabbits can truly be interactive pets that love socialization and affection from people. Since they are naturally prey animals, many are instinctually nervous when first acquired. All rabbits therefore should have a hiding box or house to retreat to during times of stress. An effort must be made to interact with the rabbit each day, including petting and holding as much as possible. There are several safe, humane ways to pick up a rabbit. The best would be to pick them up with two hands—one behind the front legs and one under the rear for support. The head can then be tucked under the elbow while carrying. An alternative method for picking up would use one hand to grab the rabbit’s large scuff, and another under the rear for weight support. If a rabbit does not feel well supported, he/she will be likely to jump or kick and can easily injure or break its legs or spine.

HEALTH CONCERNS

Any health problem that affects a rabbit could lead to a decreased appetite. Such bunnies should be seen as soon as possible because a low appetite can quickly lead to “GI stasis” or slowed intestinal tract. This is a serious condition that can result in death if not treated promptly.

Rabbits have an unusual need to eat certain fecal pellets called cecotrophs. They are droppings that come from a specific area of the intestines, are generally passed late in the night and consumed directly from the bottom. They look smaller than normal droppings and often covered in a mucus pack. These goodies are packed full of vitamin rich beneficial bacteria (probiotics!) and are needed for long term health. If rabbits are too obese to reach their bottoms, they may miss out on this major health benefit.

Rabbit teeth grow constantly, much like horses, and should be worn down with normal chewing. Occasionally genetics or an improper diet may cause the teeth to not line up properly so that the teeth do not wear correctly. This could lead to a rabbit that doesn’t eat as much as normal. Such rabbits may need to have these teeth filed under anesthesia, as well as the diet corrected and many wood pieces to chew on.

High protein pellets (like alfalfa) can lead to a high production of ammonia in the urine, which can irritate the respiratory tract when inhaled, and make a rabbit more susceptible to respiratory infections. Respiratory infections will often result in thick whitish yellow discharge from the nose, eyes, and/or ears. Antibiotics are often required as well as improved husbandry and a cleaner environment.

In addition to signs related to the above problems, rabbits should be seen for a yearly check up, just like any other pet. Changes in the weight, behavior, urine, stool size or consistency, skin irritation, excess scratching, or matted fur are all indications of a sick rabbit that needs vet attention.