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4-H GUINEA PIG PROJECT



OREGON STATE UNIVERSITY EXTENSION SERVICE

Contents

4-H Guinea Pig Project	3
History and Uses	3
Description and Type	3
Behavior	7
Beginning the 4-H Project	8
Selecting a Guinea Pig	8
Housing and Accessories	8
Colonies	10
Feeding	11
Breeding Guinea Pigs	11
Selecting a Mate	11
Pregnancy	11
Parturition	12
Caring for a New Family	12
Cavy Genetics	12
Ailments and Diseases	14
4-H and the Guinea Pig	18
Cavy Showmanship	18
Judging Contests	18
Oral Presentations	18
State Fair	20
Records	20
Glossary	25
Bibliography	27

4-H Guinea Pig Project

Guinea pigs are delightful animals. Although timid, they generously give affection for a small amount of care. They are large enough for small hands to hold safely but can present a challenging genetic project for the more advanced 4-H'er. Equally comfortable in a city apartment or on a farm, this little rodent makes an excellent urban or rural project.

Your 4-H Guinea Pig Project is an animal project in miniature, teaching responsibility, patience, animal behavior, genetics, and record keeping. It is an excellent companion to the 4-H Rabbit Project. These animals require the same food, equipment, showmanship techniques, and records. They share the same national organization and can be found together at many 4-H and open shows.

This project also gives you an opportunity to belong to a 4-H Club, make new friends, learn new skills, and participate in 4-H activities.

You might want to supplement this project book with the Cavy Advancement Program, which is arranged in five steps according to difficulty. Practice the skills you learn from this project at club meetings and by yourself. An ideal way to participate is by owning your own guinea pig, although ownership is not required. Read this project manual and keep it handy for reference.

The guinea pig is popular as a pet because of its docile, gentle manner and attractive, roly-poly appearance. Its cleanliness and adaptability to a human environment make it easy to have in the home. Its ability to live easily in an apartment in the city makes it attractive to urban families. It is an ideal first pet.

The guinea pig has earned its place in society as a pet and as a laboratory and show animal. The student of this project will reap many rewards including the wonderful companionship of the animal itself.

History and Uses

There is some confusion over the origin of the name "guinea pig." This rodent is not from Guinea in Africa, as the name implies, but is a native of Peru in South America. The label "guinea" may be a confusion with the name "Guiana," a port on the coast of South America, or cavyies may have been sold by British sailors for one guinea (an old English coin). The name "pig" may be because of the way it grunts or squeals or from the idea that cooked cavy tastes a little like pork. Europeans and Americans rarely use the guinea pig as a source of food. However, Peace Corps volunteers in Peru report that it is considered a delicacy there and say that it has a bland taste.

The Incas of ancient Peru raised guinea pigs as a major source of protein and even used them in sacrifices to their gods. Cavyies were kept in their homes, fed on kitchen scraps to fatten, then cooked and eaten. They were raised in large numbers in separate color groupings, which helped to establish the many color varieties we have today.

Spanish conquerors of Peru were the first to import the guinea pig to Europe during the middle of the 16th century. They have been kept by Europeans as pets ever since. During the early 1900's, people in England and the United States started using guinea pigs as show animals. There are many local, state, and national guinea pig shows held each year, usually in conjunction with a rabbit association. "Breeders," people who specialize in breeding guinea pigs, concentrate on certain

breeds or varieties. They work with genetics to perfect these animals in order to "place" at the shows.

Although the general public, and even some scientists, refer to this docile mammal as a guinea pig, it is known to breeders as a cavy. The terms are interchangeable. The name "cavy" is derived from its scientific name *Cavia porcellus*—porcellus is the Latin name for "little pig." They are more closely related to chinchillas and porcupines than to rats, mice, or squirrels. In South America there are about 20 species of wild cavyies that resemble their domesticated relatives but are larger.

Guinea pigs have been used since 1870 by eminent scientists like Louis Pasteur. The guinea pigs' requirements are similar to those of humans, so they are useful for studying the causes and possible cures of a variety of diseases. Reportedly, some 3 million guinea pigs are required annually in medical research in the United States in areas such as nutrition, pharmacology, allergies, radiology, immunology, serology, and genetics. The term "guinea pig" has come to mean "a subject of scientific research."

Description and Type

The guinea pig is a short-legged, stocky, "cobby" mammal with no visible tail. It has four toes on each front foot and three on each back foot. An adult cavy is from 10 to 14 inches long and weighs between 2 and 3 pounds.

The ideal "type" or conformation of a cavy includes: a broad head with a short, Roman nose; large, bright, bold eyes; drooping, petal-shaped ears; a high, full crown with medium body length; firm flesh; and high shoulders. One popular description of the cavy states that it should look like a brick with the edges rounded off.

Breeds

A national standard for cavies has been set by the American Cavy Breeders' Association, a specialty club of the American Rabbit Breeders' Association. 4-H uses the same standards in order to classify cavies for their shows. These standards represent the goals of the cavy breeder: if your animal is not "perfect," this does not mean that it is less worthy of your love, care, and affection. Use these standards to help you select, breed, and show your animals.

Our domestic cavies are divided into breeds according to differences in the hair of their coats. Such distinctions are genetic and will pass from one generation to the next. Currently, there are seven acknowledged breeds, which can be divided into three categories: smooth coats, novelty coats, and long coats.

Smooth coats. The most popular and best-known breed is the American. It has short, smooth, silky hair and best displays the preferred "type" in cavies. It is the cavy used in laboratory work and most commonly found in pet stores.

The Crested is very similar to the American with the same short, smooth coat. It has, however, a single rosette centered on its forehead between the eyes and ears. The rosette consists of hairs radiating out from a center point. Although Cresteds of many color varieties are pets and 4-H projects, the only Crested allowed as a breed in U.S. open shows is the White Crested. The rosette or crest must be white and is the only white allowed on the body.

The American Satin also has a short, smooth coat. Its hair has a hollow shaft that causes the coat, particularly in the lighter colors, to appear "pearlized" like satin.

Novelty coats. The Abyssinian has short, wiry hair arranged into a specific pattern of rosettes divided into ridges. The rosettes should be deep, complete, and well defined. Four saddle rosettes, two hip, two rump, and two shoulder rosettes are preferred, with stiff, straight hairs forming the ridges between rosettes.

The Teddy's coat is short and dense, and the hair is wiry and kinky. Two strains have been developed: the soft, plush coat and the harsh, rough coat. Both are judged on resiliency.

Long coats. The two breeds of cavy that fall into this classification are the Silkie and the Peruvian. They are

judged primarily on the length, density, and texture of their coats. Breeders of show animals encourage the growth of sweeps, or sections of hair, by rolling them. An 18-inch show coat is not uncommon! Since the coats on these animals grow about 1 inch a month, they require special care and should be trimmed regularly to prevent matting if not kept in show coat.

The Peruvian has four major "sweeps": two on the sides, one at the rear and a frontal sweep also called "head furnishings." It has two major rosettes on its hips which cause the long hair to fall forward. When combed for presentation, the hair is parted down its back. It is almost impossible to tell which is the front.

The Silkie has a smooth, silky coat that grows straight back in a "cape look" or teardrop formation. Its facial hair is short and smooth and the hair of its crown grows down its back, merging into the long side and rear sweeps.

The Ridgeback cavy has a ridge of medium-length hair down the middle of its back, much like an Abyssinian, but has no rosettes. The rest of its body has short, smooth hair like an American.

A breed currently of great interest is the Coronet. It looks like the long-haired Silkie with a crest or rosette on its forehead. The crest can be of any color.

Some breeds have not yet received national standards at this time; however, they are being developed extensively in the U.S.

Cavy breeders have liked the satiny effect of the hollow hair so much that they have developed this feature in all other known breeds, thus developing new breeds from the old familiar ones.

Many cavies are crosses between two or more recognized breeds. These animals may have characteristics of several breeds—a short coat with a single hip rosette, for example. Although they might not be eligible for an open show and probably will not place well in "breed" classes, they are perfectly suitable for 4-H showmanship. They make wonderful pets.

Color groups and varieties

The four basic color groups that are nationally recognized are listed below with the varieties that fall within each group. More specific descriptions of

the varieties may be found in the cavy section of the *Standard of Perfection*, published by the American Rabbit Breeders' Association.

Selfs. Beige, Blue, Cream, Red-eyed Orange, White, Black, Red, Lilac, Chocolate.

The Self cavy is entirely one color. The belly color tends to be slightly lighter in some varieties. Depth of color (from tip to base of hair) is important.

Agoutis. Dilute, Golden, Silver.

The Agouti cavy has a coat with two different colors of hair and a distinct belly color. Some of the hairs are banded, with a base color of beige, black, chocolate, or lilac and a tip color of cream, orange, red, or white. The other hair shafts, called "ticking," are entirely the same color as the base. The belly color is the same as the tip color.

Scientific Classification

Kingdom

Animal

Phylum

Chordata (animals with a spinal cord)

Subphylum

Vertebrates (animals with backbones)

Class

Mammalia (warm-blooded animals that have a hair coat and nourish their young with mammary glands)

Order

Rodentia (gnawing animals whose front incisors continuously grow)

Suborder

Hystricomorpha (chinchillas, porcupines, etc. They have a zygomatic arch in which the jugal bone forms a center block.)

Family

Caviidae (South American rodents with no visible tail, one pair of mammae, four toes on the forefoot, and three on the hindfoot)

Subfamily

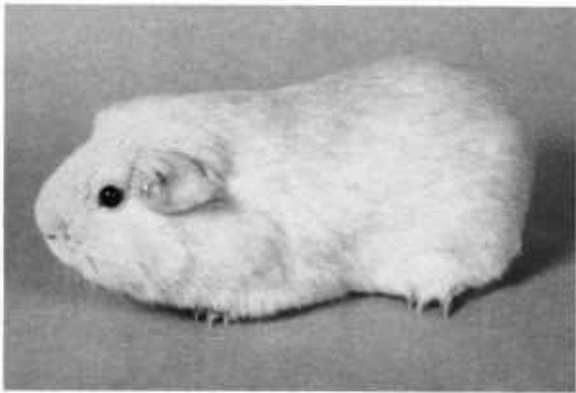
Caviinae

Genus

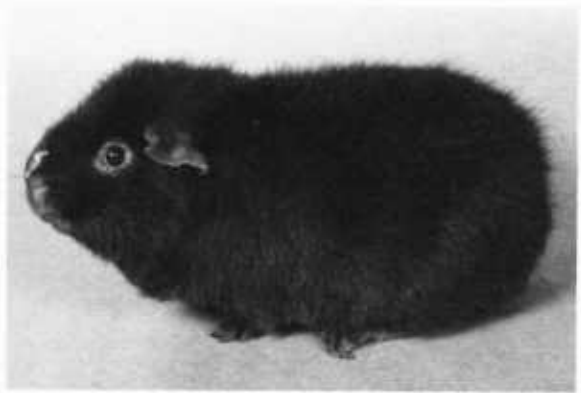
Cavia

Species

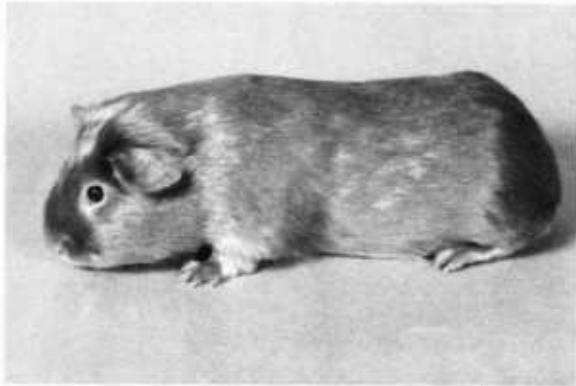
Cavia porcellus



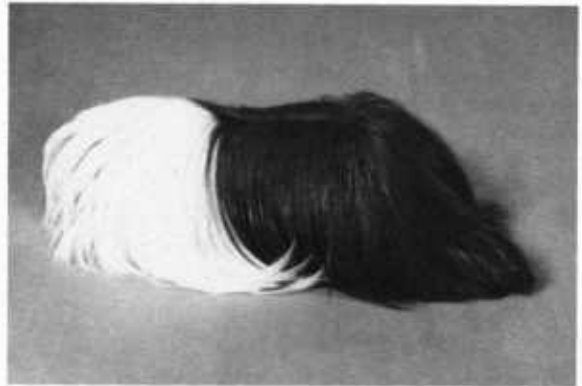
American



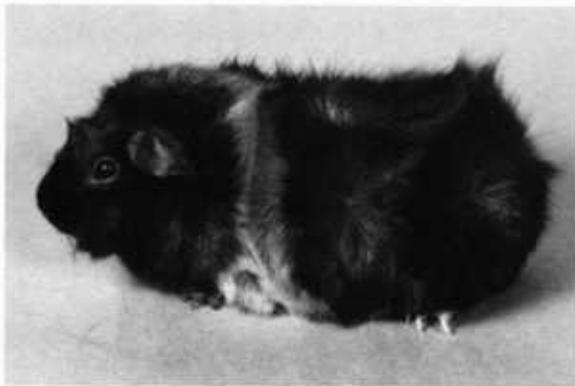
Teddy



Satin



Peruvian



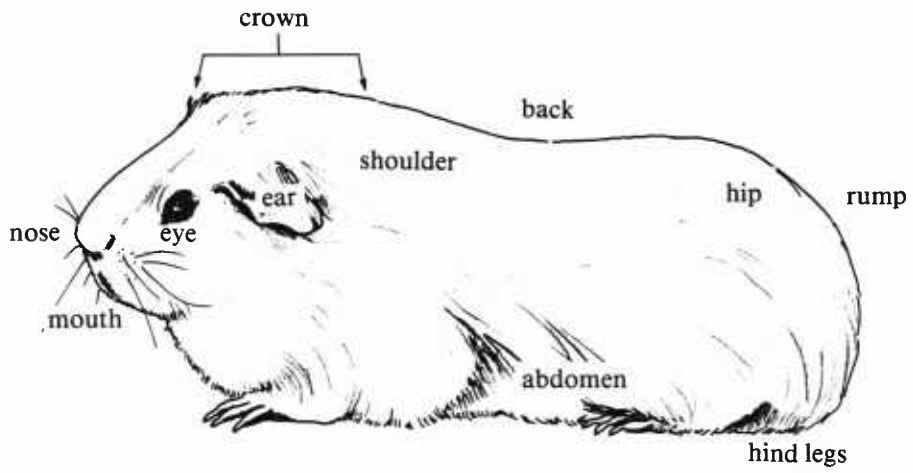
Abyssinian



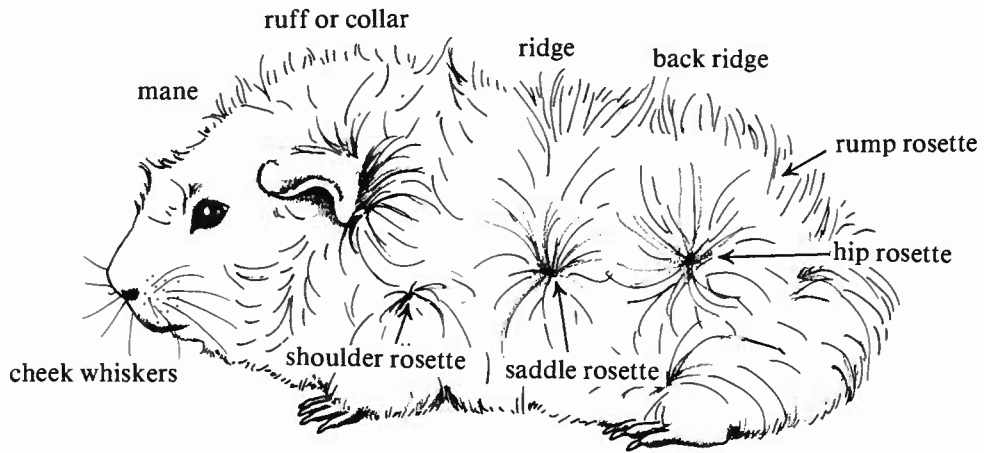
Silkie



Coronet



The American cavy.



The Abyssinian cavy.



The Peruvian cavy.

Solids. Golden, Brindle, Roan, Silver, Dilute.

The Solids have a coat of intermixed hair colors evenly distributed over the entire body. The Dilute, Golden, and Silver are similar to the Agouti but have no separate belly color. They do have ticking all over, including the belly. The Brindle has a coat of red and black intermixed hairs, while the Roan has white hairs intermixed with colored.

Marked. Dalmation, Tortoiseshell (TS), Tortoiseshell and White (TS & W), Himalayan, Broken Color, Dutch.

Color in the marked varieties is preferably displayed in clear, well-defined patches and, for some varieties, in special placement. The ideal pattern for Tortoiseshell (red and black) and Tortoiseshell and White is a checkerboard of patches. The Dutch has markings similar to the Dutch rabbit: colored eye patches and ears. The Himalayan is a white-bodied cavy with black legs, ears, and nose. The Dalmation is white-bodied with colored spots. It often has a colored head. The Broken Color can be any two or more recognized colors.

Behavior

The more you know about guinea pigs the more you will enjoy this 4-H project and your own animals. For example, cavies have a highly developed sense of sight with particularly fine peripheral (side) vision. They can also recognize all colors of the spectrum. Experiments to test their peripheral and color vision are fun to do and help create a special bond between you and your animals.

Cavies can hear high frequencies (sounds) far above and below the human range. They are notorious for recognizing the sound of the refrigerator door opening or a rustling of the lettuce drawer. Studies have shown that cavies do indeed distinguish the footsteps of their caretaker from others. They can also quickly learn to respond to a specific sound, like their own name being spoken.

The guinea pig's sense of smell also is greater than ours, causing an uproar in the caviary when a favorite fruit or vegetable is detected. Cavies distinguish both individual cavies and different humans by smell rather than sight. Watch two guinea pigs meeting for the first time—notice how they sniff each other.

Cavies produce a wide variety of sounds, each with a different purpose. When calling to its owner or a cavy friend, the guinea pig will emit a loud, high-pitched squeak, often described as a shrill whistle. The young cavy calls its mother with this sound when it has strayed too far from her. She responds with a cooing, murmuring sound to soothe the little one.

The cavy also has a purring mating call. This is particularly used by the male when introduced to a female. The female's response is usually a frightened squeal that leaves no doubt of the terror it feels when forced to endure the company of a strange male. After the couple get to know each other, they exchange calls with a gentle rolling purr and a soft series of chirps that indicate a feeling of contentment. Grinding of teeth accompanied by pawing of feet are the cavies' direct warning for intruders to beware!

Such body language is an important form of communication among cavies because they are very social animals. When two pigs meet for the first time, they circle one another with fully extended legs. They hiss, snap their teeth, and appear to bite each other on the nose or flank (rarely do they actually bite). This is a normal pattern of establishing rank within a cage space or "territory." The mock battle may last a full day. Usually the largest animal in the group will establish dominance. Even well-acquainted sows will establish rank in a new territory.

To reduce such confrontations, assign new housing with lots of extra hay for the more passive pigs to hide in. Adding extra treats at this time can also distract a domineering animal from aggressive behavior.

It is delightful to watch a group of youngsters practice the ritual of establishing rank by placing an overturned food dish or block of wood in their midst. They play a game similar to our "king of the mountain." Guinea pigs love to furrow in hay or play "hide and seek." Young ones climb and jump over hurdles 4 to 6 inches high.

A loud sound or squeal of fear or pain from one animal will send all of them scurrying around in a panic or

dashing quickly into a hiding place. When confronted with danger or a noise, they will often freeze in place. In the wild, cavies travel single file with adults at each end and young in the middle.

"Popping" is a behavior peculiar to cavies that often confounds new owners. From a standing position on all fours the cavy will jump straight up in the air as high as 18 inches. Often it will turn 180 degrees while airborne. There's incredible spring in those short legs.

Courtship behavior is also interesting to observe. The boar circles the sow with a cocky strut, swaying back and forth. The hair on his crown may rise and he chases the sow, sniffing at her rear. Often he sprays her with urine. She usually ignores him, displaying boredom and irritation at his persistence. The mating usually takes place at night when she is receptive.

Cavies are nocturnal: their greatest activity occurs at night. They do not hide and sleep all day, however, as some rodents do. Guinea pigs are alert and will respond in time, especially if they live indoors with humans.

Coprophyagy, or eating its own bowel movement, is normal behavior for a guinea pig. It is a behavior similar to the cow chewing its cud. Coprophagy is necessary to the cavy's digestive system. Like rabbits, cavies eat only the soft stool produced at night, not the dry ones found on the bottom of the cage. Nutrients from food incompletely digested on the first trip through the digestive system are often absorbed on the second. Remember, the guinea pig is a vegetarian and does not have a problem with worms unless fed infected grasses.

The joy and fellowship you experience in working with your guinea pigs will grow as you become better acquainted with the particular behavior and personality of your own animals. Like our human friends, cavies differ widely in habits and personalities. When you know your cavy well you will be able to identify moods and special needs more accurately. You will also be able to detect the onset of disease and increase the chance of preventing serious illnesses.

The attention you give your cavy will not only affect its health, but will determine whether it lives a life of boredom locked up in a cage or a full life of activity and contentment.

Beginning the 4-H Project

Show this book to your parents and read it together. Before you bring home your new friend, obtain all the necessary food and equipment. Make sure you have the time and money for continued care. Remember the guinea pig is dependent on YOU. You will often have to put your animal's needs before your own. Sometimes that is not an easy thing to do, but a healthy, happy animal to take pride in is a great reward for your time and attention.

Selecting a Guinea Pig

Buy the best animal you can afford. Decide what you are going to do with your guinea pig: whether it is a pet or for show, breeding, or market. Select an animal with your purpose in mind. A breed or variety that is unique in your area might help you to place better in shows and make it possible to join in a breeding project with other 4-H'ers. Select a breed that you can manage—long-haired cavies require special care. Look for a healthy animal. The chart on this page should help you.

Housing and Accessories

Cages and carriers

Safety for both you and your animal is the first consideration. The cage should protect the animal from outside predators and keep it from escaping. Beware of sharp metal edges and wires that could cut you or your animal. The door opening should be large enough for safe passage. The bottom should be firm and flat so as not to catch toenails and legs.

The minimum space is 1½ square feet per adult cavy. Colonies have special requirements (see section on colonies). The ideal cage size for one animal is 18 by 14 by 16 inches high. For a pregnant sow or mother with litter it should be 24 by 18 by 16 inches high.

Proper ventilation is required but avoid drafts. A temperature range of 65 to 70 degrees Fahrenheit is best. Cavies do not perspire, so avoid unbroken periods of direct sunlight.

Weekly cleaning is necessary for both the animal's and the owner's health and comfort, so cages must be cleanable. Cardboard boxes are inexpensive, accessible, and available in a variety of sizes and shapes. They are portable, but must be replaced often. The ventilation is poor and you must provide a wire top for safety. Lack of a waterproof bottom is a serious disadvantage.

Used aquariums are another possibility. They're easy to clean, inexpensive, and available in a variety of sizes, but the ventilation is very poor and they need wire tops for safety. They are breakable and not portable. Wooden boxes are also inexpensive and can be built to suit your need, but eventually they become urine soaked. Usually they are not well ventilated and need wire tops.

Wood and wire cages are inexpensive to make and can easily provide security and good ventilation, although they also become urine soaked eventually. Used rabbit cages with metal pans have the advantage of being easy to clean. These cages are secure, long lasting, well ventilated, and available in many sizes. The wire grid above the metal pan can cause bumblefoot or broken limbs but you can pack bedding above the wire or remove the grid. Unfortunately, these cages are not easily found.

Wire cages with pans are the most costly but best option. They are easy to clean and have good ventilation and security. They are long lasting and available in several sizes; some are portable. Unless you purchase them used they can be expensive.

Carriers are used for travel. They have the same requirements as regular

cages but are smaller in size. A single carrier might be 8 by 11 by 8 inches; a double carrier, 14 by 11 by 8 inches with a metal or wood divider; and a triple carrier, 21 by 11 by 8 inches with two dividers. Carriers are useful for attending shows and for taking your animal to the vet.

The Healthy Guinea Pig

Appetite

Eats frequently, especially at night

Breathing

Silent and regular

Body

Firm, no swellings, cuts, sores, or broken bones

Claws

Trimmed, none ripped off, no extra toes

Coat

Clean, shiny, unmatted, and free of parasites

Droppings

Small and firm, pellet-shaped

Ears

Clean, preferably untornd, no discharge

Manner

Alert, inquisitive, and responsive

Mouth

Dry, no sores or slobbering

Movement

Rapid shuffling, freezes when alarmed

Nose

Clean, no mucous or discharge

Teeth

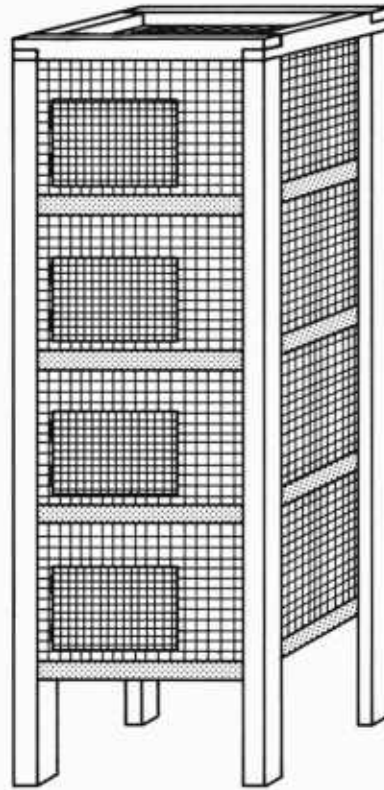
Four front teeth overlapping, not loose

Vent

Dry, clean, no stains or signs of diarrhea

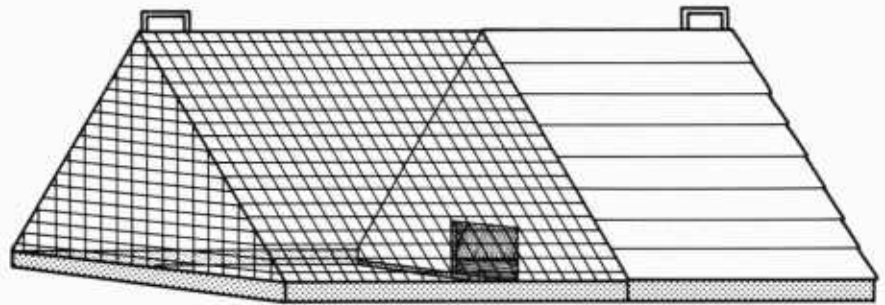
Cavy condominium.

Frame: 2 by 4 lumber
Attach 1- by 1-inch wire mesh to frame
Use wire mesh to support metal trays
Trays pull out the front
Doors are large, offcenter
Size: Height 6 feet
Depth approximately 18 inches
Width 18 inches for a single, 24 inches for a double



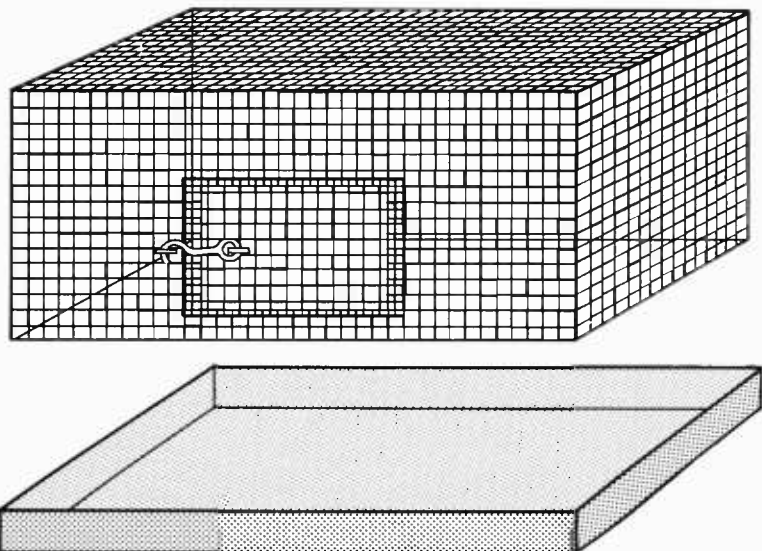
Lawn grazing cage with open bottom for placing on the grass.

Back section closed with wood floor
Front section 1- by 1-inch wire mesh
Handles front and back
Size: 3 feet wide
6 feet long



Wire/metal cavy run. This style is adaptable to many sizes for different needs.

Top: Height 14 to 16 inches
Width 16 inches
Length 36 inches
Door opening: 8 by 12 inches
Door: 9 by 14 inches
Open bottom
Metal pan or tray:
Depth 2 to 4 inches
Width 16-1/2 inches
Length 36-1/2 inches



Dishes and toys

You will also need water bottles. Plastic water bottles for rabbits or guinea pigs (available from pet or feed stores) are preferred. They must have a metal tip to prevent being broken by the cavy's sharp teeth; water dishes are too easily tipped and soiled to be practical. A wire holder is usually provided with the bottle to secure it to the side of the cage, although heavy ponytail bands can be used to replace the wire if necessary.

Select a heavy feed dish with smooth edges. Choose a dish that cannot be easily tipped. Tuna fish cans nailed to a block of wood and checked for sharp edges are inexpensive. Gravity feeders, such as used in rabbit cages, do not work well with guinea pigs. If the dish is too low or large, the guinea pig will sit in it!

Guinea pigs love to play. A tin can with both ends removed (no sharp edges) provides a great deal of enjoyment to youngsters. An empty oatmeal box or small cardboard box with one end removed is a simple hutch or hiding box. An industrious cavy owner can build wood hutches. They should be sanded but not painted (to prevent poisoning). Expect these toys to be chewed on and to require replacing because guinea pigs are not only curious but need to sharpen their teeth.

Bedding

Cost and availability are two of the most important factors in choosing bedding. Cages should be changed weekly or more often so be sure to select a bedding that can be easily replenished. Use bedding for comfort and cleanliness. Select a material that is fine enough to be absorbent, but large enough not to block nasal or rectal passages.

Use several different materials to meet your special needs. For example: Line the metal pans with newspaper (for easy cleaning), cover with cedar shavings (for absorbency and smell), and top with a generous amount of grass hay (for hiding and chewing). Change often to keep urine smell under control, and disinfect with bleach occasionally, remembering to rinse well.

Cedar shavings make the best bedding because it is highly absorbent and smells good, but you must watch

your animals carefully for allergies. Pine and fir shavings are okay but must be presifted to remove any foreign matter. Sawdust is not recommended because it can block nasal or rectal passages.

Rice straw or hulls and ground corncobs are acceptable bedding. Straw needs to be coarse and is not as good as grass hay, which is an excellent bedding. Be sure to inspect the hay for thistles, mud, mold, or other impurities.

Newspaper is used only as a pan liner because the ink can be poisonous. Owners of long-haired varieties may want to try indoor/outdoor carpeting, which has the advantage of being washable.

Colonies

It is desirable to raise cavies in colonies because they are such social creatures. A colony encourages the guinea pig's social habits to develop in a natural way. Adults of either sex will protect and nurture all of the colony's young, and little ones quickly learn eating, grooming, and social habits from the older pigs.

A good-sized colony might include an adult boar and seven or eight producing sows with litters. Or it might consist of a group of 6 to 20 young boars, with or without an adult boar, or a group of sows of any age with or without litters. Rarely are two adult boars housed together, certainly not in the presence of breedable sows because torn ears or bites may result. An exception might be in a very large outdoor caviary on natural ground where adults could establish "territories" for several "colonies" within the same enclosed pen.

However, most colonies are much smaller. A colony with a single stud boar and several producing sows is most common. This arrangement allows for postpartum breeding if in-pig sows are not removed before parturition (giving birth). Some breeders prefer this method since it maximizes the number of litters produced

each year. Other breeders prefer to remove expectant mothers to give them a rest between litters, to prevent untimely sympathetic parturition among sows, and to more accurately identify their individual offspring. Newborns in a colony can be trampled to death if the herd stampedes in fright. Young boars and sows approaching maturation are removed from colonies so they will not be bred too soon.

Thus, the second most common colony used by breeders is the holding pen where young of the same sex between weaning and breeder age are housed in a group. Often an older pig placed with them acts as "nanny" for the whole young colony.

Although colony housing provides a more natural social structure and far greater exercise room for all the pigs, there is a tendency toward overcrowding. The resulting poor sanitation and ventilation encourage rapid spread of disease. Appropriate space per pig, as outlined in the housing section of this manual, must be carefully maintained.

Colonies of cavies are usually housed in a basement, garage, or separate cavy building that protects them from outside predators and prevents them from escape. The guinea pig pens are often open-topped, with sides 8 inches high. Rarely does a cavy escape its pen. The pens may be 4 by 4 feet, 4 by 6 feet, 3 by 6 feet, 4 by 8 feet, etc. They may be made of wood, metal, or plastic. A clever and easy-to-clean colony pen used by one breeder is a hard plastic wading pool 5 feet in diameter. These various pens may be stacked on shelves if 2½ feet or more between shelves is provided for adequate ventilation. The size of these pens should be determined not only by the space available but by the size and strength of the person who must clean them.

Obviously, colony cavy raising is a choice that must not be made lightly. Space availability, careful, consistent attention to sanitation and health care, and the time and energy of the breeder are critical to the success of this effort. The older 4-H'er or an intermediate member with parental supervision may find this activity to be delightfully challenging. Working with and observing guinea pigs in a natural social setting is a deeply gratifying experience.

Feeding

Fresh water must be available at all times.

Feed each animal 10 mg of vitamin C (20 mg to pregnant or lactating mothers) every day. Good sources are ascorbic acid tablets or powder, baby vitamins, fresh fruit or vegetables (kale and parsley), and vitamin C fortified imitation juices.

Prepared pellets should be available at all times. Select what is available and what you can afford. Guinea pig pellets are the best source of balanced nutrition. They usually contain vitamin C, but this vitamin deteriorates within 90 days of the pellet milling date or sooner, so supplement with additional vitamin C. Rabbit pellets with a minimum of 16 percent protein are an acceptable and less expensive feed. Do not use medicated pellets. Feed vitamin C!

Give as much grass hay as the animal will eat. Select clean hay, free from thistles, mold and mud. Shake out the dust.

The following foods can be added to the feeding routine:

- Mixed grains such as COB (corn, oats, and barley) with or without molasses.
- Dry or moist bran on top of the pellets, 1 or 2 tablespoons per pig.
- Wheatgerm.
- Alfalfa cubes.
- Fresh fruits—apples, bananas, oranges, for example.
- Fresh vegetables—carrots, parsley, spinach, celery, tops from beets, and

radishes, just to name a few. (**Note:** lettuce is mostly water and has no nutritional value).

- Fresh field greens such as dandelion and fresh-picked grass.
- Milk sops (bread soaked in milk) for lactating sows and babies. Remove uneaten portions after a reasonable time to prevent spoiling.

The guinea pigs may have digestive problems if you feed them onions, radishes, cabbage, cauliflower, broccoli, and potatoes. Avoid oleander, foxglove, digitalis, and rhubarb! Check your animal every day. Be sure it has food and water and vitamin C. Stir or sift leftover pellets daily to get rid of the dust. Ask yourself: Does the cage need cleaning? Is the animal behaving normally? Is the temperature correct? Does my pet need bedding or food? Have I handled my animal lately?

Breeding Guinea Pigs

There are few projects as rewarding as watching a guinea pig family because their babies are among the cutest of the animal kingdom.

Selecting a Mate

To develop your cavy family you must have appropriate space, time, money, and energy; a means of disposing of the young; and a healthy sow. You may choose either a young sow, 22 to 26 ounces in weight and 4 to 12 months old or an older sow with previous kindling experience. Avoid choosing an older sow who has never kindled because her pelvic bones may have hardened, creating a risk that she would not kindle safely. You also need a healthy boar, who can be purchased or borrowed. He should weigh 22 to 26 ounces and be at least 4 months old. Avoid placing a very young boar with an older, aggressive sow who may intimidate or injure him. The boar should complement your sow's best features and strengthen those that need improvement.

Particularly in a small cavy project, selection of a mate is restricted by what is available. The results will be more pleasing if you first select a healthy mate that is the same breed as yours, and then select on the basis of type and variety. Remember the objective in any breeding program is to create strong, healthy cavies.

Pregnancy

The sow is placed with the boar alone or in a colony, for at least 4 weeks, or until palpation (feeling her abdomen) reveals pregnancy, because the sow's estrous cycle is 16 to 19 days. She is in heat (receptive to the boar) for about 2 days, during which the membrane that normally seals her vaginal opening breaks. The membrane then reforms and the cycle starts over, unless conception has taken place. A sow is fertile for 3 to 4 years. A boar is continuously fertile for 4 to 5 years but can become sterile unless bred regularly.

The gestation period of an in-pig (pregnant) sow is 63 to 72 days. Palpation to determine pregnancy is performed by gently placing both palms of your hands up under the sow's abdomen. Feel for two egg-shaped swellings which are the sections of the cavy's two-horned uterus. "Kickers" signal that birth will occur in 3 to 4 weeks.

To prevent problems such as pregnancy toxemia, provide special care for the in-pig sow:

- Handle as little as possible.
- Supply an extra 10 mg of vitamin C daily.
- Provide exercise by placing the food dish and water bottle at opposite ends of the cage.
- Encourage movement by housing a female friend with her.
- Add light corn syrup to the drinking water during the last 3 to 4 weeks.
- Avoid all forms of stress to the sow.

Pregnancy toxemia may occur any time during and for a month after the gestation period. Symptoms include listlessness, loss of appetite, and reduction of water intake. There is no cure. Sows can be lost to this problem despite the best conditions.

The boar and sow can be left together for the entire pregnancy. He will not harm the in-pig sow or the babies, but most breeders prefer to separate the pair before birth to prevent rebreeding the sow during her postpartum heat period. She can be housed with other sows, but avoid placing in-pig sows together when their due dates are close. They might drop their litters at the same time, even though one litter is premature.

Parturition

A normal parturition (birth) takes 20 to 30 minutes and the usual litter size is between one and six babies. A nest is not necessary although extra hay is desirable for privacy. The sow often pulls the babies out, licks them clean, and then eats the accompanying sacs and the round, disk-like placentas. Eating the afterbirth probably stimulates the sow's milk secretion. Any damage to the babies (bites, missing toes or ears) is a result of over-zealous cleaning or a difficult birth. Cavies are not cannibalistic!

If problems such as prolonged hard labor or an improperly positioned fetus occur during parturition, contact a veterinarian. If prolapse (part of the birth canal follows the fetus out) occurs, the sow will probably have to be destroyed.

Stillborns are common in cavy births and occur for a variety of reasons that you cannot always prevent. Occasionally babies are born too quickly for the mother to clean the sacs from all their heads and a fetus suffocates. If you are present at such a birth, quickly peel the sac from the baby's head so it can breathe.

Cavy babies are born with their eyes open and fully haired. They will immediately scamper around and take extra food within 24 hours. A desirable weight for a newborn is 3 to 4 ounces.

A sow might reject her newborn if she is a mother for the first time and terrified of these strange invaders, but she will accept them in a few hours. A mother may ignore a particular baby in the litter if she senses something is very wrong with it. This is Mother Nature's way of eliminating those too weak to survive.

Occasionally a baby is born with wry neck—with its head pulled to one side and difficulty in standing up. Do not confuse this with the wry neck middle-ear infection of rabbits and older cavies. In newborn cavies, the problem is usually muscular. In mild cases it will go away in 7 to 10 days. In severe cases, the baby may be unable to feed and will perish.

Caring for a New Family

Cavy young are well tended by their mothers. If a litter is large (four or more), you may need to supplement the mother's milk with milk sops (bread soaked in diluted, evaporated

milk). Provide ample greens, extra vitamin C, moist bran with wheat germ, regular pellets, or high-protein baby cereal.

If a litter is orphaned, it can be fostered to another lactating sow. She will usually accept the new babies within a few hours. A human foster parent can supply the above diet by using an eye dropper or syringe to feed the babies frequently, day and night. The babies' lower abdomen and hindquarters should be massaged frequently, to stimulate bowel movements. If possible, keep orphaned newborns housed with other cavies, removing them only for feeding. Older pigs will nurture the young of their social group.

Record the newborns' weight, sex, color, and condition. Spread out any folds in their ears. Note the head shape and overall type during the first 24 hours. Many breeders feel this is an accurate prediction of a cavy's appearance at 1 year old.

Continue supplementing the lactating mother with extra vitamin C and plenty of fluids and greens. Poor nutrition may result in severe weight loss, loss of hair, or a sore on her back called "broken back." Proper nutrition will correct such problems.

If blue breast or caked breast occurs, it can develop into mastitis, an infection of the mammary glands and teats. Warm compresses applied frequently to the hot, swollen area and gentle massage to release some of the milk will alleviate the problem in a few days.

Weaning (separation of young from the mother) takes place anytime from 10 days to 4 weeks after birth. Removing the babies one a day will reduce the sow's risk of developing caked breasts. Young, weaned sows

can be housed with other sows, but not with boars. The risks of breeding too early are great. Young weaned boars can be housed with older boars. The mature boar may mistake the younger one for a breedable sow, but he'll soon discover his error.

When you wean the litter, you must cull them. Select keepers according to size, type, personality, or the special needs of your breeding program, disposing of others to pet stores, friends, newspaper advertisements, or sales at open shows.

With careful planning, selection of healthy breeding stock, and consistent attention to the details of pregnancy, parturition, and weaning, the development of your guinea pig family will be one of the most memorable events of your 4-H career.

Cavy Genetics

Genetics is a vast and complicated, but fascinating, subject that will bring depth and interest to your cavy breeding program. Understanding a few basic principles of genetics will enable you to predict the probable result of breeding a pair of cavies.

All babies are born with physical characteristics that are passed to them from their parents on microscopic structures called chromosomes, which exist in pairs in each cell of the body. The baby receives half of its chromosomes from each parent.

The hereditary coding for physical traits such as size, shape, color, coat texture, and color patterns, are located in genes on each pair of chromosomes. Thus, the baby has two genes (one from each parent) for each specific trait.

In some pairings, one gene will dominate the other; that is, it will be expressed in the baby's outward appearance. The other gene is called recessive. The baby will not appear to have that trait, even though the gene is present. For example, the gene for a short, smooth coat is dominant over the kinky coat gene, which is recessive. Thus, a baby born of a pure American parent bred to a pure Teddy parent will look American. It will, however, carry the recessive Teddy coat gene.

This baby is a hybrid or crossbred cavy, rather than a purebred one like its parents. It will be able to pass either the dominant coat gene of the American or the recessive Teddy coat gene to its own offspring.

If two hybrids are bred, they will produce litters containing the following results: 25 percent pure Teddy, 25 percent pure American, and 50 percent hybrid American—Teddies that look American. To arrive at those conclusions it is helpful to use a genetic square. The diagram below illustrates a hybrid American-Teddy breeding.

Thus, it is easy to see why three out of four of these babies will look American, while only one out of four will actually be pure American. The trait of being purebred is called homozygous. The other two American-looking babies will be, like their parents, hybrids or heterozygous. The fourth baby will look like and will be pure Teddy.

Of course, the percentages or odds are appropriate only for large numbers of offspring—at least 1,000. In any litter of two to five cavy babies, the results will vary.

Dominant coat

- genes:
- a. short coat (Abyssinian, American, Crested)
 - b. crest (Crested, Coronets)

Recessive coat genes:

- a. long coat (Peruvian, Silkie, Coronet)
- b. kinky coat (Teddy)
- c. hollow hair shaft (Satin)

Any cavy that displays a recessive coat characteristic in its outward appearance is genetically pure for that trait. A cavy that shows a dominant coat trait may be pure or hybrid. Thus, a recessive gene can be carried through many generations of cavies before bursting forth to the surprise of the breeder. The recessive gene shows only when it's coupled with another like itself. Only test breeding or careful and accurate record keeping of pedigrees will ensure that purebred qualities continue.

Not all genetic traits are simply determined by the dominance of one gene over another. Often several genes are needed to determine a single trait. Sometimes sub-gene particles called alleles will compete for expression at a gene locus on the chromosome. Genes of one trait may modify the action of genes of a different trait.

Occasionally, neither gene in a pairing will be able to completely dominate the other. For example, when an American is bred to an Abyssinian, the resulting mongrel may have a flat coat interrupted with unwanted ridges, uneven hair length (rooster tail hair), and a coat that is too rough for an American and too soft for an Aby.

A little knowledge of the genetics of your open guinea pigs can help you plan and obtain the desired cavies of our breeding program. You may even experience the thrill of developing a new breed or variety! Following is a list of suggestions:

- Whenever possible, breed purebreds to purebreds.
- Avoid Abyssinian to American crosses.
- Avoid Abyssinian to Peruvian crosses. Rosette patterns may be interrupted, hair length will vary, and coarse hair texture may result.
- Satins may be bred to their own corresponding breed, such as American Satins to American, and Peruvian Satins to Peruvians. The resulting babies are hybrids, since the Satin gene is recessive. The hybrid Satins, when bred back to pure Satins of the same breed, will produce some genetically pure Satins and some hybrids.
- Cresteds can be bred to Americans. If the Crested parent was pure Crested, the babies will all be Crested hybrids. If the Crested parent was hybrid (showing the dominant crest but carrying the recessive no-crest gene), some of the babies will be crested hybrids and some will be pure American.

• Coronets can be bred to Silkies. The Coronet is a crested Silkie, so the comments above are appropriate here.

- Peruvians and Silkies can be bred together; the Peruvian coat will dominate. The Peruvian coat is a modified rosette coat. Two hip rosettes are no longer desirable. Occasionally a Silkie baby will show up in a Peruvian-to-Peruvian cross or a Peruvian-to-Silkie cross. This shows that both parents were carrying the recessive, non-rosette gene. The Silkie baby is pure for that trait.

Color genetics

Predicting the color of your baby guinea pigs can be fun. The same basic laws of genetics in breed coats apply in color genetics. However, so many different genes are involved that it gets quite complicated. Basically, there are two pigments—black and yellow—from which all the coat colors are derived. The presence or absence of these colors and the degree to which

AMERICAN-TEDDY BOAR

American gene	Teddy gene
AM AM	TED AM
AM TED	TED TED

American gene

AMERICAN-TEDDY SOW

Teddy gene

they are modified by related genetic factors will determine the specific colors of your cavy babies. A knowledge of cavy genetics will help you obtain clear colors and desired markings.

This section is intended as a general guideline for beginners in the cavy project. Detailed information may be available in your public library or county Extension office to help you with specific problems with color breeding.

Dark colors tend to dominate light ones. Dark cavies can produce light-colored young, but light-colored parents do not usually produce dark young.

All colors developed from the original "wild" or "natural" variety of cavy, which was the Golden Agouti. Thus, the agouti may show up at any time when crossing colors.

For consistency, breed a given color variety to the same color. There is one exception. Never breed Roan to Roan or Dalmation to Dalmation or one to the other. Dalmation is derived from Roan. A lethal genetic factor is involved with this variety. When two Roans are bred, the resulting litter may include weak, deformed, often blind babies that are called microphthalmic whites, although some offspring in the litter may be normal. Older, advanced cavy breeders may choose to experiment with this breeding, but it is not recommended for the beginner.

Breed Selves to Selves, Solids, or Agoutis. Breed Broken Colors to other Broken Colors, or to TS & W or TS.

To keep the patches of color on Brokens clean, avoid breeding Brokens to Roans or Brindles.

To avoid Brokens with patches too small for showing (like a white foot or blaze), avoid breeding Brokens to Selves.

For the clear white crest of the White Crested, you can use mismarked breeding stock that displays the odd

white toe or foot. There is an apparent connection between genetic factors for the white crest and those for the white spots.

The following is a list of varieties (colors) of cavies that breeders have found compatible in crossbreeding color groups.

Blacks to: Dalmation, Himalayan, Golden or Silver Agouti, Roan, Brindle. (The young will be the color of either parent.)

Crems to: White (young will be either color), Cream (young will be either color), Red. (Cream can be a dilute of Red. Breed to Reds with pale skin.)

Agoutis to: Agouti of any variety. Silver is the most recessive Self variety. Breed to pink-eyed Selves for Dilute Agoutis that require pink eyes.

Chocolates to: Beige, light-skinned Red, chocolate-based Agouti, chocolate Himalayan.

Reds to: Brindle, Roan, red-eyed Orange, Cream (especially if Red and Cream carry or display the pink-eyed Dilute genetic factor).

Tortoiseshell and Tortoiseshell and White to: Brokens with a good line down the belly and back. Avoid Dilutes or Dilute carriers.

White spotting is a somewhat recessive trait, and Self color is incompletely dominant over white spotting. When breeding a Broken or a Tortoiseshell and White, there is a tendency to develop too much white. Avoid this problem by occasionally breeding a Broken to a Self with a white foot or blaze.

The dilution factor causing pink eyes (which is different from that causing red eyes in albinos) will dilute black to lilac and chocolate to beige, while changing dark eye pigment to pink. To keep black and chocolate colors from fading, avoid breeding to known carriers of pink-eye dilution. To obtain the diluted colors, do breed known carriers of pink-eye dilution. Like most other genetic factors you can control this.

Many other characteristics are determined by genes. Size, type, ear length and droop, width of shoulders, etc. are determined genetically. You can obtain your desired results by carefully

selecting cavy mates. For example, if you want broad shoulders, do not breed two narrow-shouldered cavies together. Breed a narrow-shouldered one to a broad-shouldered one, keeping from the litter only the broader-shouldered cavies. Using genetic information in this way requires careful selection and strict culling, but the results can be dramatic. In a few generations you can have a stud herd carrying the trait you bred for.

Acquaint yourself with the advantages and disadvantages of linebreeding, outbreeding, and crossbreeding. The breeding of related stock (linebreeding) is the preferred method for most breeding programs. It quickly stabilizes a desired trait in your herd. At the same time, linebreeding will bring to your attention any undesirable genetic traits that your cavies carry recessively.

Certain undesirable traits such as pea-eye, angel wings, and polydactylism (see Glossary) are thought to be genetic. When you realize they exist in your herd, you can eliminate them by testing, breeding, and culling. Understanding genetics will give you control of your breeding program and make your 4-H project more challenging and enjoyable.

Ailments and Diseases

Although prevention is the keynote to keeping your cavy in good health, observation is your best way of keeping minor ailments from developing into major illnesses. Changes in your guinea pig's habits or characteristics may be warning signs. Early detection is an essential ingredient in keeping your cavy healthy. General symptoms of illness to be aware of include:

- Off feed
- Off water
- Sitting hunched in a corner
- Eyes half-closed
- Hair ruffled
- Any unusual discharge (diarrhea, nasal mucous, etc.)
- Dull coat
- Dull eyes
- Excessive thinness

To help you keep your cavies healthy, the following chart of ailments and diseases has been provided.

Ailment	Symptoms	Cause	Control
Abcess	Hard lump, sometimes beneath a scab. Often warm to the touch. Animal appears listless and may stop eating.	Improper draining of wound or bacterial infection that may have begun elsewhere on the body. See section on Cervical Adenitis.	Sterile lancing done at home or by a vet. Abscesses will gradually soften and drain on their own, providing the animal's general condition does not deteriorate. Completely drain and flush with hydrogen peroxide. Repeated flushing is necessary. Dress with topical antibiotic ointment.
Bumblefoot	Large callous on the large foot pad	Wire on bottom of cage	Remove wire from bottom of cage or pack with bedding to provide soft floor.
Overgrown toe nails	Nail is long, sometimes curved	Cavy cannot wear down nails in soft bedding.	Trim the toenails regularly with a toenail clipper. Be careful not to trim too close to the flesh or it may bleed.
Missing toenails		Unknown	Keep clean and use antibiotic ointment. The nail will grow back in time.
Swollen foot	Swollen and inflamed foot pad that doesn't appear to heal, despite a scab	Unclipped nail or foreign matter lodged in foot	See vet for treatment.
Sores or wounds	Any open wound or scratch	Fighting from overcrowding or incompatibility. Check cage for sharp objects or wire.	Cut away hair and cleanse wound with antiseptic soap. Apply antibiotic ointment.
Cloudy eyes	Cloudy film over eye, tilted head	Injury, foreign objects	Remove object, apply ophthalmic ointment regularly for several days.
Red or swollen eyes		Conjunctivitis or foreign object in eye	Check to see if foreign object is lodged in eye. Visit vet to check for conjunctivitis.
Broken bones	Limping, inactivity, noticeable distortion	Falling, injury from being picked up incorrectly, getting leg caught in wire cage	See vet. Put in a confining cage splint if necessary.
Vaginal infections	White mucous discharge, odor	Bacteria from dirty cages, dirty boars. Older sows are perhaps unable to clean themselves or drag themselves on dirty cage bottom.	Sulfadimethoxine given twice daily for 1 week or until symptoms disappear. Disinfect cage and clean it often.
Ear problems	Holding head to one side, sense of balance disturbed	Bacterial or viral infection	See vet for treatment.
Impacted rectum	Large block of feces at vent opening with an offensive odor	Unknown	Soften with mineral oil on a cotton swab and remove. Check often, as this problem can reoccur once it has begun. Adding extra greens to diet seems to help.

Ailment	Symptoms	Cause	Control
Sores	Sore on back, particularly if a sow has just had given birth	Unknown. Thought to be lack of vitamins.	Watch diet carefully to be sure sow is receiving sufficient vitamins—especially vitamin C.
Ringworm	Bald patches, usually circular, on abdomen or back	A fungus that is airborne or transmitted by humans	Antifungal ointment containing griseofulvin
Bald patches		Allergy due to cedar shavings	Change to hard wood shavings or hay
Loss of hair	Hair trimmed irregularly and often very close to the skin	Chewing	Add extra hay or ignore. Separate animals if desired.
Lice	Small, white, wiggly creatures that can be seen when hair is parted, particularly on rump or by ears	Parasites (see mites, lice, and Selnick mites)	
Mites	Tiny black specks (can cut a V-shape on the belly or the back)	Contact with infected animal.	Cat flea powder. Bird lice spray treatment for mites will also kill lice.
Selnick mites	Serious hair loss with bare spots on belly. Animal appears run down—scabby sores and constant scratching.	Infested hay or contact with infected animal or cage	Dip animal in Zema Dip—1 tablespoon to 2 gallons of water. Wear rubber gloves and do not breathe fumes. A well-ventilated room is necessary. Be sure to wet hair on head (rub in with hands if necessary). Dry briefly with a hair dryer on warm setting (not hot). Disinfect cage and inspect bedding. Put damp animal in clean cage. Reinspect in 2 weeks and repeat if necessary.
Heatstroke	Drooling and weakness, heavy breathing	Exposure to heat or direct sun	Get the animal out of the sun and wipe it with cool, wet cloths. Provide water. Watch closely.
Broken front incisors	Tooth missing, chipped, or loose	Chewing on wire, falling, or injury. Scurvy, general poor condition.	Even-up remaining teeth with toenail clipper (get experienced help); feed slops and wet pellets until the teeth grow back. Provide a block of wood for chewing. Carefully monitor for proper nutrition.
Overgrown molars	Slobbering, drooling, severe loss of weight, mouth appears partially open	Unknown (appears to come from lack of chewing), might be hereditary	Seek advice of a veterinarian. Under anesthetic, back molars can be filed down but are thought to grow back.
Bladder problems	Common in boars. Off feed and water. Gelatin-like discharge from penis. Penis stiff, dry, and inflamed.	Dirty cage	Clean cages. Use vaseline on penis and sheath.

Ailment	Symptoms	Cause	Control
Cervical adenitis	Enlargement of lymph glands in cervical region of throat. Pea- to golfball-sized lump, filled with creamy pus, that will rupture.	Bacterial organisms that enter the body through the respiratory system. Very contagious.	To save others it is necessary to destroy all suspected animals.
Coccidiosis	Loss of weight and vitality, diarrhea	Microscopic parasites acquired from infected food or bedding. Very contagious.	Prevent by diligent cage cleaning. In early stages use neomycin sulfate as found in Biosol, Isolate, or Kaopectate.
Diarrhea	Loose or watery stools	Viral infection or too many greens	Use Albon or Kaopectate-Feed pellets only. Boil water and limit greens.
Kidney deficiencies	Most common in older cavies. Great quantities of water consumed. Loss of 2 to 3 ounces of weight per week. May be blood in urine.	Thought to be heredity. Cause not known.	Place animal on clean white towel to observe if blood present in urine. Monitor water consumed. Take to vet because both enlarged kidneys and kidney stones are treatable.
Pregnancy toxemia	Listless, off feed and water, inactive, eyes half-closed	Metabolic disorder brought on by a combination of stress, age, diet, obesity, heredity, and advanced pregnancy.	Prevent (see section on pregnancy).
Pseudotuberculosis	Wasting, diarrhea, rapid breathing, coughing		Isolate and take to vet.
Respiratory infections and pneumonia	Fever, discharge from nose, sneezes, poor appetite, listlessness. Ruffled hair. Backbone appears to stick out.	Drafts, virus, bacterial infections, poor ventilation, stress	Isolate sick animal, keep warm, use steam vaporizer, Albon, or other sulfamethazine. Vicks on nose sometimes helps. Give vitamin C in small amounts several times daily. Pneumonia is often incurable.
Salmonella, paratyphoid, or mouse disease	Diarrhea and rapid death	Contaminated food or hay from infected mice	No cure
Scurvy	Loss of hair and muscle tone, bleeding gums, loss of teeth from looseness, peculiar gait, weight loss	Lack of vitamin C	Give vitamin C. Try small amounts given several times a day to prevent strain on kidneys.
Wasting disease	Extreme weight loss. Progressive weakness leads to being off-balance. Paralysis of the hindquarters. Death.	Unknown, may be virus or starvation due to overgrown molars, nerve damage during birth, or nutrition deficiency	Complete recovery is rare. Treatment depends on suspected cause.

4-H and the Guinea Pig

There are several ways for a 4-H'er to participate in a guinea pig project. You can join a 4-H club that specializes in small animals, perhaps just guinea pigs. Or join a club specializing in both rabbits and cavy, since they use similar management techniques and equipment. You might also work on your guinea pig project as part of a community club with a section on small animals. Each 4-H club is unique, and their activities will vary from leader to leader.

Club meetings provide you with information and experiences that will further your knowledge of cavy husbandry, such as record keeping and proper handling. The meetings also provide opportunities to exercise social skills, participate in community service, and receive citizenship training; areas that are so important in the development of the 4-H'er as a well-rounded person.

Cavy Showmanship

Choose an animal that is healthy and of good type. A calm, medium-sized animal is preferable. Make sure that your cavy is clean, groomed, and free of external parasites. See that your animal is properly marked with a metal tag or ear tattoo, if necessary.

Work with your animal often. Calm, gentle, firm handling will help your animal feel secure. Practice posing your animal and gradually increase the time the animal remains alone. Wear clean, suitable clothes, including a long-sleeved shirt of a contrasting color to your cavy.

Be courteous and friendly. Answer the judge in complete sentences so that she knows you understand the question. If you do not know the answer, respond honestly, "I do not know the answer to that question." Eye contact with the judge is very important. Keep your attention on the judge. Remember to smile. If you feel nervous, take a deep breath and let it out slowly. Remember, 4-H was developed for you because we care.

Showmanship positions

The following methods have been proven acceptable for cavy showmanship. There are alternate ways, and you can be creative—just be sure your animal is secure, safe, and comfortable. Try practicing these in order.

Pose your animal with a side view to the judge. Keep your hands off your cavy unless it is necessary to pose it.

To turn the cavy from side to side, place one hand on each side of its body and lift and turn to a new position.

To lift the animal, grasp it with your right hand. Surround its right shoulder and leg with two fingers and place your thumbs behind its left shoulder. Place your left hand under its rump for support.

To carry, pivot the animal on your left hand so that it faces your left shoulder. Lower the animal until it rests on your left arm with its head between your arm and body. Keep your right hand on its body.

To show the teeth, either lift the animal, rolling it upside down so that its back rests on your right arm, or lift it belly-side-up and support it well with one hand while the other shows the teeth. Keep your head up with your eyes on the judge as much as possible.

To show the rear legs and sex, grasp the cavy around the front shoulders and roll it back, with the rump resting on the table. Extend its legs with your free hand. In the same position, the sex organs can be shown.

To show the straightness of the front legs, position the cavy facing the judge. Lift its front quarters slightly. Placing one hand on either side, with fingers behind the shoulder joint, gently extend the front legs forward.

Stay alert at all times. Keep your hands off your animal as much as possible and down at your sides. Do not do anything that will detract from the attractive presentation of you and your animal.

In addition to handling your cavy properly, you will be expected to answer questions that test your knowledge of your cavy project. You will be accountable for the material in the

manual and should be especially knowledgeable about the specific breed and variety of your showmanship cavy. The judge should ask you questions that will require you to handle your guinea pig as you answer.

Judging Contests

Judging contests can be one of the most challenging, enjoyable, and informative experiences you will have at your 4-H fair. In this contest you get to act as the judge. The 4-H'er whose judgments most closely match those of the adult judge of the contest is declared the winner.

You will be asked to rank, in order of preference, items in categories such as bedding, food, equipment, grooming, breeding mates, and, of course, the cavy themselves. You may be asked to identify parts of the body, breeds, and varieties. Matching diseases, symptoms, and cures is another favorite subject.

A scorecard is used for part of this contest. Written and oral reasons for your choices may be requested. The judging contest provides you with a marvelous, first-hand experience in decision-making. It is one of the highlights of the 4-H fair.

Oral Presentations

One of the best opportunities to share your enthusiasm and knowledge of your cavy at the county 4-H fair is through the Oral Presentations contest. Singly or in pairs, 4-H'ers may deliver a speech or conduct a demonstration before a judge on any topic they choose. Winners are selected for each level: junior, intermediate, and senior. Audiences of interested observers are welcome.

In addition to developing poise and self-confidence, qualities that are useful in all aspects of your 4-H career, experience in oral presentations will prepare you for the many opportunities to share your guinea pig with organizations other than 4-H, even on radio and TV.



Show position.



Front teeth.



Lift and turn.



Straightness of hind legs.



Carry.



Sex.



Straightness of front legs.

State Fair

Participation in the State 4-H Fair is open to all 4-H'ers in the cavy project who have completed the sixth grade. A judging team is chosen at the 4-H county fair to participate in the state-level judging contest. Likewise, a few exhibitors in oral presentations are selected to represent their county at the State 4-H Fair.

Breed classes

Breeds of cavies are judged at your county 4-H fair somewhat differently than in open shows. Both shows are judged with the *Standard of Perfection* published by the American Rabbit Breeders' Association, but in 4-H, breed classes of cavy that would be eliminated or disqualified by the *Standard of Perfection* are merely moved to the bottom of the class. All are given place ribbons, in accordance with the Danish system of judging.

You, the 4-H exhibitor, will display your cavy to the judge rather than placing it in a judging coop. You are, therefore, able to hear the judge's comments and see the comparisons. This is a valuable learning opportunity. Don't miss it!

Breed show classes and weights

Juniors:	Up to 4 months old Minimum weight of 12 ounces Maximum weight of 22 ounces
Intermediates:	Up to 6 months old Minimum weight over 22 ounces Maximum weight of 30 ounces

Seniors: 6 months or older
Over 30 ounces

When there is a question, place by weight rather than by age.

Suggested Scoresheet for 4-H Guinea Pig Showmanship

25 points	4-H member	Appearance is clean and neat. Wears suitable clothing. Conduct is pleasant, courteous, and attentive. Member is prompt.
25 points	Animal	Appearance and condition: clean, healthy, free from defects, free from parasites, well-groomed, nails trimmed, and well-trained.
35 points	Showing and handling	Attractive presentation of animal: following instructions, alert, general handling, and safety. Hands off animal when not showing.
15 points	Knowledge	To be combined with and used as part of showing and handling: management information and knowledge of specific breed or type.

Records

Written records are the foundation of history. Without them, our information is vague and untrustworthy. We help to plan our future by knowing the past. Your animal records are the written history of your project, and, although keeping records is time-consuming and requires organization, it provides the information we use to plan future animal projects. Accurate records also provide a way to pass your experience on to someone else. The following methods of record keeping are recommended.

The 4-H Animal Science Record, 4-H 1002R. This is a written financial account of your animal project. It includes an inventory of equipment

and animals, expenses incurred, and income generated. This record creates awareness of financial development of the guinea pig project.

Personal guinea pig records. A large calendar, or dated dairy, kept near your animals, is used to record births, deaths, sales, illness, and show dates.

A written pedigree, even if it is incomplete, for each animal.

A record card (it can be notebook paper) for each animal. This should tell the animal's history and breeding record as well as show placements and medical history.

Weekly weighing. If you have a scale, this is an invaluable tool in detecting illness and watching the progress of your animals.

A list of ear tag numbers is very helpful, especially when assigning new ear tags. This list serves to record sales, deaths, and additions, thus becoming an inventory of your stock.

Other records that might be kept are: "Legs" and Grand Champion papers, photos, and comment cards from shows.

If you sell an animal, give those records to the new owner. You will be doing the animal and the new owner a great service.

Cavy Record Card

Name _____ Breed _____

Variety _____ Color _____

Sex _____ Birth _____ Weight _____ Ear# _____ Reg# _____

Breeding Record

Mate	Color	Markings	Date bred	Date due	Date born	Litter #	# of s/b

Litter #	S/B color markings	Wt.	Type?	Disposition
1.				
2.				
3.				
4.				
5.				

Litter #
1.
2.
3.
4.
5.

Litter #
1.
2.
3.
4.
5.

continued on next page

Cavy Record Card

(continued)

Medical Record

Vet _____

Notes _____

Weight: Birth _____ 2 mo _____ 4 mo _____ 6 mo _____ 8 mo _____ 1 yr _____/_____/_____

Feeding Record _____

Personality _____

Notes _____

Sold to _____ **Date** _____

New Name _____

Breeding Record

Mate	Color	Markings	Date bred	Date due	Date born	Litter #	# of s/b
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Litter #	S/B color markings	Wt.	Type?	Disposition
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

continued on next page

Cavy Record Card

(continued)

Litter #

1. _____
2. _____
3. _____
4. _____
5. _____

Litter #

1. _____
2. _____
3. _____
4. _____
5. _____

Litter #

1. _____
2. _____
3. _____
4. _____
5. _____

Additional Information:

Cavy Pedigree

Breed _____ Variety _____ Color _____

Sex _____ Ear# _____ Reg# _____ Born _____

Wt. birth _____ 4 mo _____ 6 mo _____ 1 yr _____ G/C# _____ Wt _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

Boar _____
 Ear# _____ Reg# _____
 Color _____

Sow _____
 Ear# _____ Reg# _____
 Color _____

I hereby certify that this PEDIGREE is correct to the best of my knowledge.

Signed _____ Dated _____

Show Notes	Date	Placement	Judge	Award	Leg?
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Glossary

- Abscess**—A lump, caused by an infection, in the neck or chin region.
- Agouti**—Hair shafts are two different colors; belly hair doesn't have the tip color.
- Antibiotic**—A drug used to cure bacterial infections, not normally used with cavies.
- Angel wings**—Rosette(s) or swirls located over the hips or shoulders of an American cavy, giving a "winged" effect. This is a disqualification at an open show.
- Black ridge**—The erect ridge of hair running down the back of an Abyssinian from shoulders to rump, including the mane.
- Bacteria**—Tiny one-celled organisms; some are helpful to the digestive process and some cause diseases.
- Balance of sweeps**—Evenness of sweeps in a long-haired cavy.
- Banded**—A color that circles the cavy's entire body.
- Bare spot**—A section of the cavy without hair.
- Birth sac**—A thick membrane that completely covers the baby cavy in the pregnant sow.
- Blaze**—A strip of white color running from the nose to between the ears.
- Bleeding**—A band of light color extending under the chin, found on Agoutis and Dutch-marked cavies.
- Boar**—A male cavy.
- Bonnet strings**—A marking on Agoutis in which the belly color runs under the chin and onto the face.
- Breed**—A race or class of cavies that reproduce offspring just like themselves.
- Brindling**—Red and black hairs mixed together to look like a single color.
- Bumblefoot**—Hard, enlarged callouses on the cavy's feet caused by a wire cage bottom.
- Carrying-cage show**—A competition in which the animals stay in their own cages except when being judged.
- Cataract**—A disease of the lens in an eye.
- Cavia porcellus***—The scientific name for a cavy; *cavia* means short-tailed or tailless rodent, and *porcellus* means "little pig."
- Cavy**—Breeder's term for guinea pig.
- Cesarean**—A surgical operation in which a baby is removed from its mother.
- Chest**—The front of the body between the front legs and neck.
- Class**—A category for cavy shows based upon the cavy's age and/or weight and sex.
- Coccidiosis**—A contagious disease that causes diarrhea.
- Collar (ruff)**—A lateral ridge of hair running across the shoulders of the Abyssinian cavy.
- Colony**—A group of cavies with one boar.
- Comment card**—A part of the coop card where judge's comments are made and evaluation of the cavy is recorded.
- Condition of body**—Physical state of health of the cavy.
- Condition of coat**—Physical state of the coat of the cavy based on cleanliness, texture, and grooming.
- Conjunctivitis**—An infection in which the white of the eye appears pink and the eyelid area looks inflamed.
- Constipation**—The cavy has difficulty passing feces.
- Coprophagy**—A cavy eats its own bowel movement.
- Coronet**—A rosette found on the forehead of a Coronet cavy.
- Crest**—A rosette found on the forehead of a Crested cavy.
- Crossbreeding**—The mating of two different breeds of cavies.
- Crown**—The area just behind the top of the cavy's head.
- Culling**—Getting rid of undesirable parents from a breeding program.
- Dehydration**—Loss of fluids from the cavy's body, usually after diarrhea.
- Density**—The thickness of a cavy's coat.
- Depth of color**—How far a color carries down the hair shaft to the base of the skin.
- Diarrhea**—Loose bowel movements.
- Disease**—A condition that causes a cavy to get sick (see disease section).
- Disqualification**—A permanent defect, deformity, or blemish that makes the cavy unfit to win awards or take part in a show.
- Dominant gene**—A gene that may dominate another in a pair.
- Double rosette**—Two centers instead of one in a rosette.
- Ear folds**—One or both ears have an overlapping of skin on them.
- Elimination**—Temporarily excusing a cavy from a competition because of some temporary and curable condition.
- Estrous cycle**—In the sow, the period of time it takes for the egg to develop, mature, and be released for fertilization, and for the sequence to begin again.
- Eye color**—The color of the iris (circle of color around the pupil) in the eye.
- Faults**—Qualities that detract from the overall perfection of the cavy.
- Fertilization**—The process in which egg and sperm join and begin the formation of a new cavy.
- Fetus**—The developing cavy, not yet born.
- Frontal**—The hair that falls over the face of a Peruvian cavy.
- Fungus**—A plant that has no green color, leaves, or flowers; can cause ringworm in cavies.
- Genes**—Tiny structures that carry family traits from one generation to another. There are two for each trait (one from each parent) passed on to each baby cavy.
- Genetics**—The science that describes how traits are carried from one generation to another.
- Gestation**—The time from conception to birth, about 63 to 72 days.
- Guard hair**—The longer, coarser hair on a cavy's coat, offering protection to the undercoat and providing quality and sheen to the coat.
- Guinea pig**—The common name for *Cavia porcellus* or cavy.
- Gutter**—An undesirable line or part, extending from rosette centers in the coat of an Abyssinian cavy or from the crest of a Crested or Coronet cavy.
- Hatch**—Another name for a pen to house the cavy or cavies.
- Hybrid**—Crossbred animal.
- Impaction**—A condition, usually in senior boars, brought about by a large ball of feces blocking the anal area, making eliminating solid body waste difficult or preventing it altogether.

- Inbreeding**—The mating of close family members, such as brother and sister or parent and child.
- In heat**—When a sow is receptive to a boar.
- In-pig**—Pregnant.
- Intermediate**—A cavy between 4 months and 6 months old (22 to 30 ounces).
- Junior**—A cavy under 4 months old (12 to 22 ounces).
- Laboratories**—Places where guinea pigs are used to test drugs for human use and to test cures for diseases that humans contract.
- Lactation (lactating)**—Nursing or production of milk.
- Leg**—A certificate awarded to a cavy at officially sanctioned ACBA/ARBA shows for a qualified win.
- Lice**—Tiny parasites that can infest cavy hair and skin.
- Linebreeding**—Breeding family members together for several generations in order to produce certain desirable characteristics.
- Litter**—The babies born in a given pregnancy.
- Malocclusion**—Improper meeting of teeth.
- Mammary glands**—The sow's organs that produce milk.
- Mane (cape)**—The part of the back ridge of an Abyssinian cavy that extends from the back of the eyes to just past the shoulders. As applied to Silkie and Coronets, the long hair that sweeps back from the crown to join the rear sweeps, not parting, and all of the same length.
- Marked color**—A group of varieties that includes Broken Color, Dutch, Himalayan, Tortoiseshell, and Tortoiseshell and White.
- Mastitis**—An infection of the mammary glands (also referred to as caked belly, caked breast, and blue belly).
- Mite**—A small parasite.
- Mixed breed**—An animal having more than one breed in its background.
- Mustache**—The ridges of hair found on the sides of the face of the Abyssinian cavy.
- Open-centered**—A rosette having an enlarged center rather than a pin-point center(s).
- Ovary**—The female organ that produces eggs. Each sow has two ovaries.
- Palpation**—Feeling the female cavy for pregnancy.
- Parasites**—Mites or lice living in the cavy's hair or under the skin that can be controlled by shampoo, powder, or spray.
- Parturition**—Birth of a litter; delivery.
- Patches**—Sections of color with definite shapes.
- Pea eye**—A visible abnormal swelling or growth on the inside of the eyelid.
- Pedigree**—The family history of a cavy, including three or more generations (family tree).
- Placenta**—Round, disk-like afterbirth (looks like a kidney).
- Polydactyl**—Having an extra toe or toes; a disqualification.
- Popping**—Jumping straight up in the air.
- Postpartum heat**—The period immediately following delivery when the sow releases eggs for fertilization. The sow could become pregnant again during this time.
- Pus**—Matter made up of bacteria, white blood cells, and serum; produced as a result of an infection.
- Recessive gene**—A weaker gene whose trait will not show up in new cavies unless it is paired with another recessive gene for the same trait.
- Resiliency**—The coat's capability to return to its original state after being brushed.
- Ridge**—A line of upright hair, formed by adjoining rosettes, that is found on the Abyssinian coat.
- Roan**—A cavy coat that is intermixed with equal amounts of two or three colors.
- Rodent**—A gnawing mammal.
- Roman nose**—A wide, blunt nose, not too severe in bluntness.
- Rosette**—Hair that radiates full circle around a center point. Rosettes are found on the Crested, Coronet, and Abyssinian breeds.
- Rotated eyeball**—An eye that is set in the socket so that the line of vision is cast upward.
- Rump**—The rear end of a cavy.
- Saddle**—The middle of the cavy's back or the rear colored marking on a Dutch cavy.
- Saddle dip**—A flatness in the saddle area.
- Scurvy**—A disease, caused by lack of vitamin C, that causes loss of weight and muscle tone.
- Self**—The same color of hair over the entire body.
- Senior**—A cavy 6 months old or older (over 30 ounces).
- Side whiskers**—Rosette or partial rosette located just behind and below the ear in the coat of an American or Crested cavy; a disqualification.
- Solid**—Having the same color over the entire body.
- Sow**—A female cavy.
- Sylvesters**—The long hair found on the sides of the face of the Peruvian, Silkie, and Coronet.
- Teat**—The nipple of the sow where the baby cavies nurse.
- Texture**—Harshness or softness of a coat.
- Ticking**—Coat coloring in which the base of the hair is one color, the tip another.
- Toxemia**—A poisoning of the sow during pregnancy, when poisons from the uterus are sent through the bloodstream.
- Toxic**—Poisonous.
- Type**—Body conformation or shape of a particular part of the body, as in head type.
- Under color**—Color of the base of the hair, next to the skin.
- Uterus**—The female organ in which the fetus develops and grows.
- Variety**—A subdivision of any recognized standard breed, distinct in color (a certain color class).
- Vent diseases**—Venereal diseases in cavies of both sexes.
- Virus**—A submicroscopic organism that can cause diseases such as pneumonia.
- Wean**—To remove the babies from their mother so they no longer can nurse.
- Wrappers**—Special papers or materials used to tie up and protect the long-coated Peruvian, Silkie, and Coronet.
- Wry neck**—A weakness of the muscle in a cavy's neck that causes the head to be pulled to the side and may cause difficulty in standing.

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- The following are unpublished manuscripts:
- Rocky Mountain Cavy Club Handbook on Guinea Pigs*. Rocky Mountain Cavy Club, Boulder, CO.
- Wonderful World of Cavies*. Golden State Cavy Club. San Jose, CA 95150.
- The guinea pig has appeared in literature upon rare occasions. These books introduce you to guinea pigs living in other times—many of them have surprising abilities!
- The Tales of Olga da Polga, Olga Meets Her Match, and Olga Carries On*. These are wonderfully funny stories about a guinea pig named Olga. Written by Michael Bond (author of *Paddington Bear*), based on a guinea pig owned and loved by his daughter.
- The Tale of Tuppenny* and *The Fairy Caravan* by Beatrix Potter. She also wrote a poem about a guinea pig in *Apple Dapple Nursery Rhymes*. These are published by Frederick Warne.
- Other resources:
- Your local library
 - Pet shops
 - Local cavy breeders
 - Feed companies that print literature about animals
 - The American Cavy Breeders' Association, RD2 Box 180-A, Zionsville, PA 18092
 - The American Rabbit Breeders' Association, P.O. Box 426, Bloomington, IL 61701
 - Oregon Cavy Breeders' Society, 36910 Engehill Road, Springfield, OR 97478

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