

## **Guinea pig (*Cavia porcellus*)**

### 1. Species of the New World

Guinea pig is called "guinea pig" in English, but it is not a "pig" produced in "New Guinea", nor is it produced in India (India), but from South America. It resembles a rabbit without big ears, with a fat "piggy" body, no tail, and both female and male rats only have a pair of obvious nipples located in the groins.

### 2. Gentle social animals

Guinea pigs live in grasslands and are herbivorous social animals. If they are kept in groups in a large enough space (for example, directly on the floor of a breeding room), their social relationship can be seen. Although similar to mice, one  $\alpha$ -male leads the other members of the group to work and rest together. It is often seen that the younger ones move with the older adults, while the  $\alpha$ -male follows closely the estrous female. Their aggressive body language is very gentle, and they will not fight to the point of blood. The so-called "fighting" is mutual "ear biting", so the edges of the guinea pig's ears often have small gaps and become irregularly jagged.

In the wild, when guinea pigs encounter predators, their basic method of survival is to suddenly become completely still, hoping that the predator will not detect them. This sudden motionless behavior can last from a few seconds to 20 minutes and is called the freeze (scatter) reaction. Therefore, although it has a gallbladder, it is still a very timid animal.

### 3. Picky eaters

Guinea pigs are very picky eaters, so special attention should be paid to their feed when raising them. After they are born, if they become accustomed to one kind of food, they will no longer eat other foods, so they cannot easily change the brand of the feed they eat. They like to play with water, but they do not keep the trough clean. Once the feed becomes wet and dirty, they refuse to take in any more.

### 4. Molars also have open roots.

The molars of guinea pigs will also continue to grow, so if the molar teeth are misaligned, it will affect eating and prevent them from growing up. It is often seen that the fur on the lower jaw of young guinea pigs is wet at any time due to constant drooling.

## 5. Vit C is an essential vitamin

Guinea pigs, like humans, must ingest vitamin C (Vit C) from outside the body. Once they are deficient in Vit C, clinical symptoms will immediately appear. The guinea pig feed currently comes from the United States. Since Vit C is prone to decay on its own, the guinea pig feed is only valid for 3 months even under normal storage. In order to ensure that the guinea pigs can absorb enough Vit C, Vitamin C was added to drinking water every day by the animal center.

## 6. Premature newborns

The gestation period of guinea pigs lasts for 2 months, and their newborn babies are covered with fur, have eyes and ears open, have teeth, can eat solid food, and can move on their own since birth. This is similar to single-ungulate animals (horses) and ruminants, which have precocious young (Table 1).

Table 1. Some growth and reproductive traits of guinea pigs and rabbits.

Species	Guinea pig		Rabbit	
	♂	♀	♂	♀
Development from birth to weaning				
Birth weight (gm)	70-100		30-80	
Lower/upper incisors growing age (days)	Already grown at birth		-	
Ear hearing age (days)	Ears opened at birth		-	
Visual age of eyes (days)	Eyes open at birth		-	
Number of nipple pairs	1		4	
Visible nipple age	At birth	At birth	-	
Weaning age (weeks)	2-3		4-8	
Weaning weight (gm)	180-240		-	
First time in estrus (months)	2.5-3.5	1.5-2.5	5-6	3.5-5
Adult body weight (Kg)	0.9-1.0	0.7-0.9	2.0-6.0	2.0-4.0
Estrous cycle (days)	15-17		Induced ovulation	
Follicular phase (days)	2		2	
Luteal phase (days)	12-16		14-18	
Estrus phase (hrs)	1-18		Anytime	
Pregnancy (days)	59-72		28-35	
False pregnancy (days)	No		14-18	

Number of litters per litter	2-5		4-10	
Colostrum secretion time (days)	-		2-3	
Postpartum estrus	(+)		No	
Routine breeding				
Monthly age at breeding	3-4	2-3	6-10	4-9
Breeding system	permanent polygamy		temporary polygamy	
Reproductive index (number of pups weaned/breeding mother/month)	0.7-1.4		2-4	
Elimination after the number of births	4-5		7-25	
Number of months from breeding to elimination	18-48	18-48	12-36	12-36
Body temperature (°C)(rectal temperature)	37.2-39.5		38.5-40.0	
Digestive tract emptying time (hrs)	13-30		4-5	
Number of chromosomes	64		44	

#### 7. Research on hearing

Because the tympanic bullae (middle ear) of guinea pigs are very large, the inner ears are also very prominent, and the ears (outer ears) will turn with the sound source (Preyer (pinna) reflex), so guinea pigs have made significant contributions to the study of hearing mechanisms.

#### 8. Use in immunology

Because guinea pigs are very susceptible to immediate anaphylaxis, they have become an animal model to explore the relationship between allergens and bronchial smooth muscle contraction.