

# Basic Rabbit Selection and Breeding Considerations

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This fact sheet is designed to assist rabbit producers in understanding breed selection for a profitable enterprise. It can also serve as a training tool for new producers, aiding them in breed selection and breeding practices.



## Highlights

- Determine your production objectives when selecting breeding stock; are you breeding for pets, meat, or fur?
- When selecting breeding stock, it is important to consider several factors, including fertility, maternal instincts, milk yield, growth rate, fecundity, and overall viability. Additional considerations may include rabbit size and temperament.
- Providing a doe a rest period after kindling helps ensure health and productivity.
- Body weight plays a pivotal role in rabbit farming.

## Key Terms and Definitions

**Buck:** A buck is the term used to refer to a mature male rabbit.

**Crown:** The crown is the area located between a rabbit's ears, often considered a particularly soft and sensitive region that is favored for petting.

**Dam:** A dam is a female rabbit that has given birth to a litter of kits. The dam is the mother of the rabbits.

**Doe:** A doe is a mature female rabbit.

**Fecundity:** This term describes the ability to produce an abundance of offspring. It refers to the reproductive capacity, the number of offspring produced over a specific period.

**Kindling:** Kindling refers to the process of a pregnant doe giving birth to a litter of kits.

**Kindling box:** A kindling box is a designated area provided to a pregnant doe, often filled with materials such as shredded paper, hay, and newspaper. This box facilitates the doe in constructing a comfortable nest in preparation for giving birth.

**Kit:** A kit is a young rabbit. A group of young rabbits is referred to as kittens.

**Progeny:** This refers to the offspring or descendants of the rabbit. It's used to describe the young or future generations that come from a particular individual or pair.

**Sire:** A sire is a male rabbit that has fathered a litter of kits. The sire is the father of the offspring.

## Breeding Stock Selection

The choice of breed is crucial and should align with your production objectives. Producers may have goals related to pets, meat, or products like fur. Selecting the right breed that matches your production goals is a key aspect of successful rabbit farming. A well-chosen buck (male) and doe (female) are expected to produce progeny (young rabbits) that will thrive, replace the parents, and fulfill the producer's objectives, whether for pets, meat, or fur.

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## What You Need to Know About the Breeding Bucks and Does

### *Understanding Your Breeding Bucks*

#### *The male rabbit is called a buck.*

- Only sexually mature bucks should be used for breeding.
- Bucks are typically ready for breeding around 8 months of age.
- An ideal buck should be able to maintain its reproductive capacity for at least 2 to 3 years.
- When young, a buck can mate with one doe every 3 to 4 days.
- At 12 months of age, a buck can comfortably mate with four to six does within a 7-day period.
- It is recommended to cull bucks aged 6 years or older, as semen quality may decline.
- During breeding, the buck should be kept on a high level of nutrition by providing increased protein and energy into the diet.
- If using a cage system, it's best to house a single buck per cage.
- In cage mating, it's preferable to bring the female (doe) to the male (buck) to prevent territorial disputes.
- A neutral breeding space may be used, but it's preferred to place the buck in this place first. If the female is introduced first, she may become territorial and resist mating.

### *Understanding Your Breeding Does*

#### *The female rabbit is called a doe.*

- A doe should be capable of reproducing efficiently.
- Reproductive efficiency is influenced by factors such as her breed, nutritional status, and the time of year.
- Smaller breeds reach sexual maturity earlier than larger breeds.
- Small breeds may begin mating as early as 3 to 4 months of age, while larger breeds may not be ready until 8 to 9 months.
- A doe can breed effectively until she is about 3 years old, after which culling is recommended.

- Select based on your breeding goals, such as animal weight.
- A doe should have at least eight functional nipples to properly nurse large litters.
- Check the testicular condition (make sure the male rabbit has two testicles).
- Select rabbits that grow quickly and convert feed into body weight efficiently.
- Consider the size of litter (number of young rabbits) at birth.
- Do not breed rabbits that are closely related. Keep records of their family lines to make sure they come from different parents.
- Choose rabbits that are healthy and active, as they make better breeding stock.
- Choose animals from lines with a history of good productivity and fertility.
- Look for does that return to heat regularly and bucks with proven fertility.
- Choose breeding stock at 4 to 5 months of age.
- Choose animals with a calm and manageable temperament, especially if they are handled frequently.
- Look at how thick, soft, and even the fur is, and choose the right color based on what sells well or the breed type.
- Avoid rabbits with physical deformities, such as leg issues, sores, or other problems.

## Determining Sexual Maturity

- Once animals have reached the appropriate age, owners should check for physical signs of readiness.
- Bucks should have two well-developed testes uniform in shape and size and exhibit dominant behaviors such as spraying or mounting other animals.
- Does should have a well-developed vulva that is deep pink or purple in color and appear slightly swollen as an indicator of sexual maturity.

## Breed Selection Considerations

When selecting breeding stock, consider the following:

## Reproduction: Ovulation and Mating



**Figure 1.** *The Flemish*

*Giant Rabbit Reaches Maturity at 7 Months Old*

Rabbits do not ovulate on their own; mating triggers ovulation. If there is no heat cycle, ovulation is triggered by sexual stimulation or external hormones. Ovulation usually happens 9 to 13 hours after mating, with an average of 10 hours. While rabbits may seem to be in heat all year, their follicle development follows a 15- to 16-day cycle. Mechanical stimulation of the vagina can also cause ovulation.

It can be difficult to tell when a doe is in heat because there are no obvious external signs. However, does may become more restless, nervous, or rub their head and chin on the side of the cage. The vulva may also swell and turn purple. A doe may "present herself" by lying on her stomach or lifting her tail when touched. The best indicator of heat is the doe's response to the buck. To prevent fighting, it's important to place the doe in the buck's cage for mating.

A doe's first mating usually happens around 5 to 6 months of age. Small breeds, like the Polish, can be bred at 4 to 5 months, while medium breeds, such as New Zealand and Californian rabbits, mature at 6 to 7 months. Larger breeds, like the Flemish Giant, should not be bred until they are at least 7 months old (Figure 1). Does usually reach sexual maturity before bucks, so they can start breeding earlier than males of the same age.

Mating is most successful in the early morning or evening. A receptive doe will lift her tail to allow mating. If the buck is fertile and the doe is in heat, mating will usually happen quickly. After mating, the buck will often fall to the side and make a grunt or cry. One mating is generally enough, but if the doe refuses, try again in 3 to 4 days. In commercial farming, does are typically bred 5 or 6 times a year. This

can be done by weaning the litter at 5 weeks and mating the doe immediately after, with each cycle lasting 65 to 75 days.

If a buck is placed in a new cage, it may take some time for him to adjust before mating. However, mating should occur quickly when a ready doe is introduced to an experienced buck. Mating may take longer with young, inexperienced animals. If a doe refuses to mate, try her with another buck or return her to her cage and try again in 2 to 4 days. Never leave a doe unattended in a buck's cage, as aggressive bucks and non-receptive does could harm each other. In some cases, you may need to gently restrain the doe by holding her shoulders with one hand.

*It is important to keep good records of mating and kindling dates to help plan future matings.*

For the best mating outcomes, allow a buck to mate with a doe twice before returning her to her cage. Alternatively, you can take the doe back to the same buck for a second mating 8 to 12 hours after the first. These two options depend on your preference and convenience. Keep good records, especially of mating and kindling dates, to help plan future matings.

## Pregnancy and Kindling (Birth)

The pregnancy period for rabbits usually lasts between 28 to 33 days, with an average of 30 days. The doe should be given a nest box at least 3 days before giving birth to encourage nesting behavior. Fill the nest box with suitable bedding, such as straw, grass, or wood shavings—avoid using sawdust. Some does may pull fur from their own bodies to line the nest.

During pregnancy, it's important to monitor the doe's diet and care. Her food intake should be increased 10 to 15 days before giving birth, and fresh water should always be available. Keep stress to a minimum.

Pregnancy can be confirmed using these methods:

1. **Palpation:** About 2 weeks after mating, the embryos can be felt through the abdomen. This skill requires experience.
2. **Behavioral changes:** A buck may refuse to mate with a pregnant doe.
3. **Uterine swelling:** The uterus swells at different stages of pregnancy. Experienced breeders can detect these changes.
4. **Weight gain:** Does usually gain 300–400 grams during pregnancy, particularly in larger breeds.

The process of giving birth to baby rabbits is called **kindling**. Litter size is largely dependent on breed, and it is not uncommon to see litters of only one or two kits in smaller breeds, while larger commercial breeds may have 12 or more. Kindling usually happens late at night or early in the morning, and the doe typically doesn't need assistance. The entire birth process usually takes 7 to 30 minutes, though some litters may be born with hours or even a day's delay. After birth, the doe will lick the babies and may eat the placenta. The baby rabbits will try to nurse right away. If the litter has eight babies, all may be able to nurse since the doe has eight teats. If some babies can't nurse, they may become weak and more likely to get sick, which could lead to premature death. Rabbits typically nurse their young once a day either late at night or early in the morning. Thus, it is very rare to see a doe in the box with her kits. The doe should not be disturbed, and plenty of food and water should be provided to ensure she produces enough milk.

### **False Pregnancy**

Does can sometimes have a **false pregnancy**. This can happen if a buck tries to mate her or if another doe mounts her. No eggs are fertilized, but these events can cause hormonal changes that make her act like she's pregnant. The doe may not get pregnant for 17–19 days due to hormonal changes.

Signs of a false pregnancy include the doe pulling fur from her belly and making a nest, just like at the end of a real pregnancy. False pregnancies are more common when does are kept together. Does that have several false pregnancies should be culled.

### **Sexing**

Sexing is usually done at weaning. The baby rabbit is gently placed on its back, and the sex organs are examined by applying pressure with the thumb and forefinger. In males (bucks), the penis will protrude, while females (does) have a slit. At 8 weeks of age, males and females should be separated and kept in separate hutches.

### **Fostering**

Fostering involves getting a doe to accept a litter that is not her biological one, often due to the death or illness of the original doe. It is recommended that no more than two litters be fostered to a single doe.

To successfully foster a litter, follow these steps:

- **Step 1.** Mate the does (females) on the same date or on alternate days to ensure their births occur around the same time.
- **Step 2.** The litters to be fostered should be no more than 3 to 4 days apart, or less than 5 days old.
- **Step 3.** Remove the litters to be fostered from their nest with minimal disturbance, avoiding contact with any other litters. Return the original doe (donor).
- **Step 4.** Remove the recipient doe from the nest.
- **Step 5.** Rub a cloth in the original litter from the foster (recipient) doe's hutch, then gently wipe each fostered kit with the cloth to help transfer the scent and aid in acceptance.
- **Step 6.** Introduce the foster litter to the recipient nest, disturbing the nest as little as possible.
- **Step 7.** Allow the mixed litter to stay together for a few hours to ensure they all take on the same scent.
- **Step 8.** Return the recipient doe to the hutch and offer her a treat along with her best meal.

Successful fostering depends on the doe's maternal instincts and your ability to carefully follow these steps.



**Figure 2.** Though Rabbits Should Not Be Separated From Their Mother Before 4 Weeks of Age, They Can Begin Solid Food After They Reach 21 Days Old

### **Weaning**

Baby rabbits rely on their mother's milk right after birth. They are born without fur, but by day 7, they start to grow hair and become more active. Their eyes usually open around day 10. By 21 days of age, they can begin eating solid food. The young rabbits should not be separated from the doe before 4 weeks of age. After this period, they can be introduced to concentrates (pellets) and grasses (Figure 2).

### **Rebreeding**

Does are able to become pregnant immediately after kindling, however it is recommended that a doe be given a

rest period to ensure health and productivity. In intensive breeding systems, a doe may be bred as soon as 1 week after kindling. A more passive breeding system may only breed does once or twice a year. Regardless of which system suits your production goals, only rebreed does in optimal physical condition. Some does may need a longer rest period to recover from kindling and raising a healthy litter.

## The Importance of Body Weight

Body weight plays a pivotal role in the following various aspects of rabbit farming:

1. **Meat production:** Heavier rabbits generally provide more meat, contributing to higher yields and better profitability. However, bigger is not always better. The physical size of a rabbit is not the same as the weight. A large rabbit with a poor bone to meat ratio is not ideal for meat production.
2. **Growth rate:** Faster-growing rabbits reach optimal weight sooner, enabling earlier slaughter and higher productivity.
3. **Feed efficiency:** Rabbits with optimal body weight convert feed more efficiently, reducing feed costs.
4. **Reproductive performance:** Adequate body weight in does is essential for fertility and larger litter sizes.
5. **Health and welfare:** Maintaining healthy body weight prevents obesity and associated health issues.
6. **Market demand:** Different markets may prefer specific weight ranges for various products like whole carcasses or cuts.
7. **Economic value:** Heavier rabbits often command higher market prices, improving farm profitability.
8. **Breeding program success:** Body weight is a key factor in selecting animals for breeding, influencing genetic progress.
9. **Nutritional needs:** Rabbits at different body weights have varying feed requirements to maintain growth and health.
10. **Environmental impact:** Proper weight management improves feed efficiency and reduces waste, benefiting both productivity and the environment.

Rabbit raising can be an affordable and rewarding hobby. Best wishes as you embark on this exciting opportunity!

For more information, contact your [local county Extension agent](#) or the [Utah State University Extension Small Acreage Livestock](#) program.

## References

- Abdullah, A. R., Sokunbi, O. A., Omisola, O. O., & Adewumi, M. K. (2003). Interrelations between bodyweight and body linear measurements in domestic rabbits (*Oryctolagus cuniculus*). In *Proceedings of the 28th Annual Nigeria Society for Animal Production (NSAP) Conference*, pp. 133–136, Ibadan, Nigeria.
- Dorning, J., & Harris, S. (2017). *The welfare of farmed rabbits in commercial production systems*. Compassion in World Farming.
- Fielding, D. (1991). *Rabbits*. Macmillan.
- Khalil, M. H., Owen, J. B., & Aff, E. A. (1987). A genetic analysis of litter traits of baucats and Giza white rabbits. *Animal Production*, 45, 123–124.
- Piles, M., Rafel, O., Ramon, J., & Gomez, E. A. (2004). Crossbreeding parameters of some productive traits in meat rabbits. *Rabbit Science*, 12, 139–148.

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