

Breeding New Zealand White Rabbits

<http://www.crossroadsrabbitry.com/breeding-new-zealand-white-rabbits/>



The Rabbit Doe is polyestrus (having no regular estrus cycle). She is an induced 'Ovulator' and does not have periods. Most animals have a regular heat cycle. The female rabbit or doe, however, does not. They have what is called an oestrus cycle and ovulation is stimulated by mating. This is a cycle with regular periods of heat during which ovulation will occur spontaneously.

Does are considered to be in oestrus, more or less, all the time. She can stay in heat for several days running. Eggs develop in the ovaries of mature does every 15 to 16 days. These eggs may be fertilized from the 2nd to the 14th day of this 16-day period, meaning the doe is

generally receptive 13 days out of 16. In short, does may be bred about 13 out of every 16 days. Only on the three off days of the 16 day heat cycle is the doe incapable of conception.

During a breeding attempt, a doe in oestrus, should assume a characteristic pose, called lordosis, which is the back arched downwards and the hindquarters raised. A doe in dioestrus, or not willing to breed, tends to crouch in a corner of the cage, lays out flat, climbs the corner or show aggression towards the buck.



THIS DOE IS IN DIOESTRUS AND NOT WILLING TO BREED. NOTICE HOW HER BACK IS NOT ARCHED DOWNWARD AND HER HINDQUARTERS ARE NOT RAISED.

A doe is fertile almost all year long, meaning she can be bred and become pregnant most of the time.

An average conception rate of 85% or greater should be expected if you have good stock. It is believed that sunlight or light does affect or rather stimulates a rabbit's hormones, thus affecting fertility to a point.

The longest light days of the year are in the spring and early summer and this is when your does are most fertile. In the fall (short light days), your rabbits are least fertile. It has been found that giving the rabbit's 12 to 16 hours of light each day may help.

This will trigger the pineal gland and may cause the rabbit to think its spring and time to reproduce. Lighting is not as important for the average backyard grower, but for commercial rabbitries, it would be good practice to keep the amount of light constant for 14 hours each day to maintain constant breeding throughout the year. It is also very important to keep the temperature in your building below 85 degrees Fahrenheit. Temperatures above this can cause your bucks to go sterile and they can remain sterile for up to 3 months.

THE 4 METHODS OF BREEDING:

- **NATURAL MATING** is the best method. When ready for breeding, does will show reddening and swelling of the vulva. Deep red or purple coloration indicates the doe will usually accept the male and conception should occur about 80% of the time. Note: This is based on our experiences and our stock at Crossroads Rabbitry.

- **FORCED MATING** is the method that eligible does who do not immediately accept the buck be restrained by a worker so the buck can breed them. Conception rate by this method will usually be less than that of natural mating.
- **CONFINED MATING** is leaving the doe with the buck for an extended time. Several to 24 hours is hazardous to the physical well-being of the rabbits, as they may fight and cause injuries to one another. The lack of knowledge on the part of the worker, as to when or if conception occurred at all, is also a disadvantage.
- **ARTIFICIAL INSEMINATION** – Semen is collected from bucks and introduced to the does by artificial means. This is an expensive technique and would require a lot of experience to reach any good success.

As far as breeding goes; the doe ovulates after being mounted by a buck and if stimulated during the breeding, will release mature eggs from her ovaries. The eggs are shed approximately 10 hours after the doe is stimulated. She will then become pregnant if these competent eggs meet competent sperm. She can get pregnant again soon after giving birth.

For a higher conception rate, you might want to examine the doe's sex organs before and after breeding her. In our experiences, it has been noted that 80% of the time when a doe has a purplish red and swollen vulva she will accept mating and ovulate, whereas when the vulva is not red and swollen the doe will accept service but become fertilized only 20% of the time. A purplish red and swollen vulva is therefore a strong indicator, though not a proof, of oestrus. Checking the doe after a breeding for semen deposit should confirm a successful breeding.

This can be done by gently turning the doe over to examine her vulva. Confirm the semen has been deposited and not on her fur. To maximize conception and litter size, repeat the breeding 1 to 6 hours later; do not ever do a second breeding after 8 hrs.

SIGNS TO LOOK FOR BEFORE BREEDING:

- The reddening and swelling of the vulva.
- A sudden decrease in feed intake.
- The rubbing of the chin on a feeder or drinker.
- The rabbits riding on one another if in a colony type of cage.
- Restlessness; trying to gain entrance to neighboring cages.
- Violently spilling or turning over their water bowl, crock or cup.
- The doe will occasionally ride the buck when service is attempted.

PREGNANCY SIGNS: When a doe is pregnant, she begins to grow and gain weight rapidly. Fourteen days later, her teats will become pinkish red and her vital organs begin to swell. She will also develop more fur. Other symptoms of a pregnant doe are:

- Rejecting buck when returned for service. (usually but not always; see information below)
- Enlarged abdomen.
- Total rejecting of new types of feed.
- Grunting when tapped on the head or a personality change.
- Bats you with her front paws and doesn't want to be touched.
- Nips and bites at you or is defensive when she is usually calm.
- Will scratch a corner of her cage thus showing her preferential location for kindling during the second to third week of pregnancy.
- Will try to tip over any container in her cage; crock, bowl, cup etc.
- Will hide in a corner when kept in a large room.
- Will make some noise any time a buck approaches her.

A technique used in a commercial rabbitry to detect pregnancy is palpation which is done 12 to 14 days after mating. This is, however, a delicate procedure and can cause problems if not performed correctly. The doe must be handled gently. Do your research before attempting this and watch some

videos; there are plenty on YouTube. The doe may be palpated in her own cage or she may be placed on a table covered with carpeting to prevent slipping.

The ears and a fold of skin over the shoulders are held in the right or left hand; the other hand is placed under the shoulder between the hind legs and slightly in front of the pelvis; the thumb is then placed on the right side and the fingers on the left side of the two uteri for palpating the fetuses.

During this 12 to 14 day period, the fetuses have developed into marble shaped forms that are easy to distinguish as they slip between the thumb and fingers when the hand is gently moved forward and backward and a slight pressure is exerted. Be very careful when palpating, because if too much pressure is exerted, the tissues may be bruised or torn loose from the walls of the uteri and a toxic condition or abortion may result. If you have attempted to palpate and are not sure of a pregnancy, use caution on returning a doe to a buck for another attempt. Just because a doe accepts a buck is not a sign that she is not already pregnant. She may accept him, especially in the second half of her pregnancy. Sexual activity of a doe cannot be taken as a sign of her not already being pregnant.



You've heard the old saying "breed like rabbits", but this is not always the case with domestic rabbits, especially in a commercial rabbitry. Putting a buck and a doe in the same cage will not always guarantee a successful mating. Before breeding our does, we make sure they are at least 5 months old and a minimum of 6 to 7 pounds. A doe needs to have reached a target weight of at least 75 to 80% of their mature weight, as this is when they generally reach puberty.

Sexual behavior (the acceptance of mating) in a doe may appear long before the ability to ovulate and actually have a litter. This sexual behavior should not be regarded by the grower as a sign of puberty, but as pre-

puberty play. Does may breed for the first time at 10 to 12 weeks, but as a rule this will not produce ovulation. **A minimum age for your doe to breed should be 4 to 5 months old for good fertility performance.** Why would you want to breed your doe if she won't be able to get pregnant? It's just better to wait. They just seem to breed easier and conceive better if they are at the correct age and weight, plus they seem to have better maternal instincts. After reaching the appropriate age and weight, our does are bred. They are then bred back 14 days after kindling. This allows for 7 to 8 litters per year.

However, keep in mind, here at Crossroads Rabbitry we raise rabbits on a Commercial Level and a Semi-Intensive Rate of Production. Our does are serviced 10 to 20 days after kindling and the young are then weaned at 4 to 5 weeks of age. On a commercial level, you must be prepared to cull and replace with improved stock on a continual basis.

Monthly culling rates of 5 to 10% are common, as the value of each doe is evaluated and attempts are made to keep only the best. Although does can remain productive for up to 5 years, it is our opinion, that they be replaced every 2 to 3 years. As a commercial operation, and to avoid ever having any empty cages, we keep a constant reserve of does available that are old enough and heavy enough to breed. We always attempt to keep the best of the best from desired litters as this allows us to constantly improve our herd.

THERE ARE 3 BASIC RATES OF PRODUCTION:

- **EXTENSIVE:** Most rabbit growers practice an Extensive reproduction rate. This is where the breeder fully utilizes the does' maternal instincts by allowing them to nurse their young for 5 to 6 weeks and then re-breeding them after weaning; does then being serviced once every two and a

half months. This rate should allow for 4 to 5 litters per year. **If you are a small or backyard grower this may be the best practice for you.**

- **SEMI-INTENSIVE:** The does are serviced 10 to 20 days after kindling and the young are weaned at 4 to 5 weeks. There is no contrast between pregnancy and lactation. For 10 to 20 days the doe is newly pregnant while still nursing. Since these does never have a resting period they need a sufficient and well-balanced concentrate feed. This allows for 7 to 8 litters per year. **This is the rate of production used at Crossroads Rabbitry.**
- **INTENSIVE:** The does are serviced 1 to 4 days after kindling, taking advantage of the fact that they are then on heat. Weaning should take place at 26 to 28 days. This allows for 9 to 10 litters per year. This allows for 35 days between litters; In our opinion, the results of this 35 day rate are economically disappointing because the rate of doe acceptance of being serviced 3 to 4 days after kindling is very low.

At Crossroads Rabbitry, our bucks are not used until they're at least 5 to 6 months old. On average, the first signs of sexual behavior by a buck will appear at around 2 to 3 months old when the rabbit makes its first attempts at riding. At this time period, however, the viability of the sperm cells is very weak or nil in the first ejaculates. The first spermatozoa are not present in the ejaculate until around 3 months.

So, in our opinion, a New Zealand White buck should definitely be at least 4 to 5 months old before breeding for the first time. Why have the buck breed a doe if their sperm count is low or if they're shooting blanks? During a breeding, it is estimated that of the 150 to 500 million spermatozoa ejaculated by a buck, only 1 to 5 million (1 percent) will reach the uterus of the doe. Sexual maturity of the buck is when daily sperm production ceases to increase and this is reached at around 8 months of age.

Waiting any longer than this 8 months will not really benefit you. Using bucks for the first time at an age of 5 to 6 months old may be more beneficial to you. There is a so called shy buck syndrome that happens to some bucks and they do not seem interested in mounting the doe. Some bucks are just not aggressive breeders. The buck may have had a bad experience early on from being bred before he was mature enough. A doe may have attacked him and he did not get the reinforcement of a completed breeding. He may have been injured or the attack may have caused him to lose interest or confidence.

If you have one of these shy bucks, try to build up their interest and confidence by breeding them with older willing does. After a few of these breeding's, the shy buck is often ready to breed any doe. Other problems that a buck might encounter is Vent disease or Hutch burn. Vent disease, sometimes referred to as rabbit syphilis, is caused by bacteria and will most often result in lesions, ulcers, and scabs on and surrounding the genitalia. Bucks with vent disease often have a star-shaped scar on their scrotum. If not treated, the rabbit will spread the condition to its mouth, nose and eyelids while cleaning itself. Vent disease must be treated with a Penicillin combination. Hutch burn is simply when the vent area gets scabby and dirty. Hutch burn is often confused with Vent disease because many people have never seen the actual lesions, ulcerations, and scabs caused by Vent disease.

Hutch burn can be cured by using an antibiotic ointment and sterilizing the cage; Vent disease, however, can not. If breeding a doe hurts or is uncomfortable for the buck, he is likely to not pursue it. Since you should be conducting a pre-breeding check on both the buck and doe, you would find the Vent disease or Hutch burn at that time. If the penis is red, swollen or blistered, do not breed him at this time. When temperatures are above 85°F for 4 to 5 days in a row, mature bucks (older than 6 months) may become sterile. Even though they continue to mate, their breeding efforts may be useless for up to 30-60 days. Bucks that are used often (2-3 times a week) are less likely to be affected by high temperatures than those that are not used often.

Remember, this information is based on our New Zealand White rabbits and our experiences at Crossroads Rabbitry and we raise these rabbits on a commercial level. Naturally, the onset of puberty may vary from breed to breed. Conditions in your rabbitry will also play an essential role, particularly in feeding, management and climate.