Breeding Rabbits

Introduction

Welcome to the Gila Barnbusters Rabbit Breeding Project! It is so exciting that you have decided to try your hand at breeding rabbits and participating in our breeding program this year! This will be a really fun experience for you as a 4-Her, and a positive, memorable one for your entire family. This booklet is meant to provide you with a little bit of information on what to expect and how to handle things when dealing with a doe and litter project. There is much to learn, and this handout is for you and your parents to go through together so that all of you will understand the breeding process and can be as prepared as possible for what lies ahead. Enjoy the experience!

Definitions

• A female rabbit is called a **doe**. A male rabbit is called a **buck**.
• When referring to the parents of a rabbit, the mother is called the **dam**, and the father is called the **sire**.
• When you mate two rabbits together, this is called **breeding**.
• When you check to see if the doe is pregnant, this is called **palpating**.
• When you put a box in the hutch that is lined with hay, this is called **nesting**.
• When the doe gives birth, this is called **kindling**.
• The period of time between breeding and kindling is called the **gestation period**.
• She gives birth to a bunch of bunnies called **kits**. This bunch of bunnies is called a **litter**.
• When you take the young rabbits away from the mother, this is called **weaning**.

When is my rabbit ready to breed and what do I need to think about?

A small breed doe is normally ready to mate when she is 5 months old, and a buck is ready at 6 months. The medium size doe is ready to breed when she is 6 months old and the buck at 7 months. The large breed doe is ready at 8 months and the buck is ready at 9 months.

It's usually a good idea to select rabbits to breed whose ancestry has evidence of good productivity and good genetics. That's where productivity records and pedigrees listing show winnings come in handy. Keep productivity and show records of your herd just for this purpose.

You may keep a ratio of one buck to 10 does if you wish. The buck may be bred up to 7 times a week effectively. Sometimes, you can use the buck twice in one day. The most I use a buck is twice a week.

Keep the following principles in mind when you want to breed your rabbits:

• Only mate rabbits of the same breed. Exceptions to this include breeding for meat, pets or genetic experimentation. You cannot sell a pedigree rabbit that has mixed blood in its background going back 4 generations.
• Do not keep more than one rabbit in each cage when the rabbit is 3 months or older. Rabbits mature faster when alone, do not fight, and do not breed, thus eliminating unexpected results.
• Before breeding, check the bottom of the cage of both the doe and buck for evidence of diarrhea or loose stools. Do not breed the rabbit having this condition until it has been adequately treated. Also check the genitals of both rabbits for any signs of disease or infection (for example, extreme redness, discharge, sores or scabyness). Refer to the ARBA Official Guidebook section on diseases.
• When ready to breed the doe, take it to the buck's cage. Never bring the buck to the doe's cage. The reason for this is that the buck has less tendency to breed in the doe's cage. He's too busy sniffing around the cage.
• Some leave the doe with the buck overnight. Others put the doe in, watch it, and when they have mated, remove the doe. If you do the latter, put the doe back in with the buck 1 to 12 hours after the initial breeding. This will increase the likelihood of pregnancy and may increase the number of offspring.
• Keep a calendar and accurate records of the day you breed the doe. You should test her for pregnancy between the 10th and 14th day after the initial breeding. There are two ways to do this. The overall preferred method is to palpate the lower abdomen of the doe with your thumb and forefinger checking for nodules about the size of a marble. The other method is not only more risky but also more inaccurate. This method is to mate the doe with the buck again. This can cause problems because the doe has two uterine horns, each of which can carry babies. It is possible for one horn to be fertilized on the first mating and the second to be fertilized on the second mating. This will create a hormonal imbalance and cause the babies in both uteri to not form right, causing her to pass blobs instead of babies at the date of kindling. There is also a chance these "mummified" blobs could cause complications leading to the death of the doe.

• You should place a nest box in her cage on the 29th day after breeding. Thirty-one days after breeding, she should kindle her litter.

Who Can Be Bred To Whom?

Never breed brothers to sisters. Other combinations are fine: father-to-daughter, mother-to-son, cousins, etc. Until you gain some knowledge as to how genetics works with inbreeding, I would recommend your not breeding closely related pairs.

As mentioned before, mate the same breeds together unless you are trying to get meat rabbits with certain characteristics or you are doing genetic experiments or you don't care about the fate of the offspring. You cannot sell the offspring as pedigree if their ancestry is not of the same breed going back four generations.

You may mate rabbits of the same breed having different colors. Keep in mind, though, that there are many combinations of possibilities when mixing colors. Some of the offspring may have colors that are not recognized by ARBA. It is usually best to mate rabbits having the same color to start off with until you know more about how the colors interact. Also, join the national specialty group for the breed you are interested in raising. They usually have literature on how to develop the best color, size, and shape of your rabbit.

Avoid breeding rabbits that have genetic defects such as tooth malocclusion (wolf teeth) or moon eye (cloudy cornea), or produces offspring whose skull does not come together (except in dwarfs, where approximately 25% are born too small with deformed head or legs - the offspring are called peanuts). Determine whether the sire or dam is responsible for passing the genetic defect and eliminate it for breeding purposes.

Strive to meet the perfect standard for the breed you are mating. Refer to your ARBA Standard of Perfection Booklet to know exactly what is expected of the breed. Also, join the national association for that breed to get their manual on the breed. Check out the ARBA web page for a list of associations. This will show you how to improve your herd.

Evaluating A Rabbit’s Reproductive Life

A rabbit may normally start breeding at the age of 6 months for the small to medium size breeds and 8 to 9 months for the heavy breeds. The gestation period (time between breeding and kindling) is 31 days. After the doe has kindled, she can be re-bred at 6 weeks and wean the litter at 5-7 weeks. This cycle continues until she is about 4 years old or until her production is unsatisfactory.

If you become a rabbit breeder, it is a good idea to review your herd records every quarter to determine which rabbits are not producing up to par and eliminate them. In October through December, some rabbits go into what is called moulting. At this period, many do not conceive. If you have lights on all the time in your rabbitry, this will help. Rabbits are like chickens that lay eggs only if there is enough light. Also, if it gets too hot in the summer, especially for those who live in the Southern U.S., the buck produces less viable sperm and the conception rate goes down. Some people keep their bucks air conditioned to keep the conception rate high.

One breeder’s minimum standard for a doe is that she produce at least the following number of rabbits per year all the
way to weaning:

- Dwarfs: 8
- Small Breeds: 14
- Medium Breeds: 16
- Meat Type: 20
- Giants: 16
The Bunny - From Conception to Weaning

Conception

Conception, by definition, is the fertilization of the egg(s) of the doe by the sperm of the buck and the subsequent attachment of these eggs to the uterine horns of the doe. A dwarf doe usually has an average of 4 fertilized eggs that attach to her uterine horns. This number is highly variable and can range from 1 to 8 or more. A larger breed rabbit has an average of 7 - 8 fertilized eggs, and can vary from 1 to 14 or more. The number of fertilized eggs depends on the age and health of the doe and buck, the season, the number of eggs available for fertilization, the amount of sperm deposited and its viability, the capacity of the uterine horns, the genetic backgrounds, and other factors that may or may not be controllable.

The estrus or "heat" cycle of a doe rabbit is so often that it may be considered continuous. You may see a doe mounting a buck or another doe. She may even attempt to mount another animal of the same size if it is available. It is best to keep rabbits by themselves except when you want to breed them. Don't get the idea that they are lonely, because they are not. They are territorial animals, not social. This means that they normally want their own place, not to share their lives with one another. Keep in mind, that when you let rabbits run together, they will fight. If you have one buck amongst a herd of does, you might as well consider that they will all get pregnant.

The number of eggs that can be fertilized depends on the parents' ages. The doe and buck have maximum egg/sperm production between the ages of 6 months and 3 years. After this, egg/sperm production decreases, as does the chances of conception and bringing the little ones to birth.

Temperature extremes decrease the chances of conception. At high temperatures, the buck stops producing viable sperm. When the buck is exposed to temperatures above 92 degrees, he may become temporarily sterile. It may take up to 4 weeks for him to recover. Extremely cold temperatures cause the doe not to conceive because her system is concerned with taking care of herself rather than nurturing young.

The period between October and December is considered moulting season in many places. Here, it can be year round. It is when the amount of sunlight is decreasing and the rabbit is getting ready to put on its winter coat. Just as in chickens, this decrease of daylight affects reproduction, and the conception rate usually goes way down. You may artificially stimulate the rabbit to continue producing by keeping it in a building with the lights on.

When breeding, always bring the doe to the buck's hutch. You may increase the amount of conception by rebreeding the doe to the buck 4 to 12 hours after the initial breeding. I just leave the doe with the buck for one day. Never rebreed the doe after 36 hours of the initial breeding. It may cause the estrogen/progesterone cycle to get messed up in the developing womb, causing an abortion or miscarriage. You'll see her give birth to a bunch of "blobs".

Gestation

Gestation is defined as the period of time from conception to birth. This period usually takes 31 days, but may vary as much as 2 days either way. The doe gets plumper during this time. She may also get grumpy and try to scratch you. You should NOT vary her feed at this time. Keep her fed the same way you normally do. Do not give her treats if you don't normally give her treats. Do not increase the food you normally give her. Her system would be more harmed by varying her diet than if you keep things as usual. Her body adjusts to the developing babies just fine without your intervention. Just make sure she always has plenty of fresh water to drink when she needs it.
The Nest Box

Provide a **Nest Box** for her on the 28th day, unless you see her pulling hair before that time. Do not put the nest box in too soon or she will sit in it and poop in it, destroying the good environment it was meant to be. A nest box can be made of 1/4” plywood. The best dimension for it is:

- **Dwarfs**: 12” long x 8” wide x 8” tall
- **Medium**: 15” long x 10” wide x 10” tall
- **Large**: 18” long x 12” wide x 12” tall

Round out the top on one of the narrow sides to allow her to enter easily. Do not come down too far, though, because the babies may escape.

It is best to fill the nest box in the following way: Put Timothy or another good, soft hay in the box. Hollow out a hole in the hay that she can get in and put the young.

When you put a nest box in, the doe will start taking up hay in its mouth to prepare her nest. Watch carefully to make sure that she is putting it in the nest box and not spreading it on the floor of the hutch. If she is spreading it on the floor, she is intending to have the litter on the floor instead of the nest box. This would be disastrous. I find that if you move the nest box to where she was spreading it on the floor, she may then prepare her nest in the nest box instead. Make sure you watch for this because if she has her litter outside the nest box, the odds of their surviving are very slim.

Usually, the doe will pull her fur from her upper abdomen and around the shoulders just before she is to give birth. However, on occasion, they have been known to pull fur one week before they are due. That is not the norm. Make sure that there is enough fur pulled for the nest or the little ones may freeze (depending on the temperature). Occasionally, if a doe does not intend to take care of the litter, she will pull no fur. If you decide to become a full-fledged breeder, it would be nice to always keep a box of fur on hand from earlier litters in case you need to add some or take some away.

Sometimes a doe will give birth prematurely. These babies, if they are more than 2 days early, will usually die, and there is nothing you can do about it.

Sometimes a doe will prepare the nest with fur but never give birth. This is called "**False Pregnancy**". You may rebreed her 4 days after she was due.

**Birth**

The doe will give birth any time of the day, with most births being at night. It takes about ten minutes for her to deliver all of her young. Normally, she will pull her fur just before birth, but as I mentioned, there is much variation in this. If everything goes right, she will birth them in the nest box on a bed of fur in a depression of the hay. Once she has had them all, she will cover them with fur and get out of the nest box. As long as she has had 3 or more bunnies and they have adequate fur protection in the nest box, they should survive even in cold winters. When there is only one or two, they may not be able to keep their temperatures up in cold winters and may die. If you can, it is best to let her have her litter in a heated area in the cold winter.

Babies are born with their eyes closed and are nearly hairless. They must be protected from exposure and must be confined together with their litter mates. The difference in size between a dwarf and a giant is not significant, though the difference can be seen.

Sometimes a doe will give birth on the cage floor. Be vigilant and watch for this. Unless you gather up the babies in enough time and put them in the nest box, they will die from exposure. Once in the nest box, the
mother will care for them. The position of the babies is very important. The mother will NEVER move the babies anywhere. If they are on the cage floor, on the cage floor they will remain, unless YOU intervene. Even in the nest box, they have to be in the right place and it is up to you to make sure of this. Make sure that they are lying on fur in a good depression in the hay where they cannot climb out of the nest box. If they climb out before their eyes are open, their chances of survival are slim. Remember! The mother will NEVER move the babies anywhere! YOU must ensure that they are in the right position.

Check the babies soon after birth to count them and to eliminate runts and deformed babies. Believe me, it is hard to kill a bunny that's just been born. But it is necessary. If the bunny is allowed to get older, it will eventually die of the complications of its birth defect. The other bunnies could have been healthier if they did not have to share their nutrition with one that was going to die anyway.

The doe may not feed her bunnies for 2 days after she gives birth. This is normal. Check on the bunnies every 1-3 days to make sure they are doing ok. Their bellies should be rounded. This shows they are getting adequate nutrition. Don't worry about handling babies. Just don't frighten the mother.

A couple of things to understand and be aware of:

**Neglecting Babies:** One of the most common misconceptions concerning does and their offspring is the appearance of the doe "neglecting" her young. This is where the rabbit differs vastly from other animals. A rabbit will nurse her young only once or twice a day and usually for only five minutes each time. Since rabbits are “crepuscular” animals (most active during dawn and twilight hours), the nursing is most often performed at times when humans are not around. The rest of the time, she stays out of the nest box, often reclining on top of the nest box. *This is quite normal since the rabbit in the wild will remain outside of the burrow in order to lead predators away from her nest.* A doe with young is ever vigilant.

**Aggressive Does:** Occasionally, a doe with a new litter may become extremely aggressive and care must be taken to avoid personal injury. She is only attempting to protect her fragile and helpless young. As the babies grow, she becomes less protective. An aggressive doe with a litter should never be reprimanded or discredited for her wonderfully strong maternal instincts. She is a survivor in a world full of predators and fully intends for her babies to survive, as well.

**Eye Infections:** One thing to check for is eye infection, which is very common in newborns. Their eyes don't open until the 10th or 11th day, so you can't do anything before that time. If the baby is born with bad eyes, eliminate it immediately. But after the 10th day, you may treat the eyes with Neosporin droplets that you can get a prescription for. Do not use the Neosporin salve that feed stores sell. It's worthless. You must treat eye infections as soon as possible or the rabbit will be blind in that eye as it gets older.

**Losing a litter:** When a rabbit loses its litter, you may rebreed her one week after birth. This means that if she loses her litter on the 8th day, you may immediately rebreed her. If she loses it on the 3rd day, wait four days and then rebreed her.

**Ten Days - 4 Weeks Plus**

As bunnies go from birth to 10 days, they get more and more of their own fur. They are born almost hairless, but develop enough fur to keep themselves warm by the ninth day. On the tenth or eleventh day, their eyes are open and sometimes they will come out of the nest box. They will start to eat solids between the 11th and 14th days.

It is between the period of birth and 12 days that you can transfer babies around to different mothers, if necessary. Perhaps one mother gave birth to only two and another gave birth to three. As long as their ages are within 4 days of each other, you may transfer them from one mother to another, and the other mother will take care of them as if they were her own. You will have problems if you transfer them after they are 12 days old.
Their scent is different and the foster mother may attack them.

When the weather is nice, above 60 degrees, you may remove the nest box on the 14th-16th day after their birth. Allow them to stand on a piece of plywood until the 18th day. On cold days, remove the nest box on the 18th-20th days. It is necessary to remove the nest box before the 21st day because they poop and pee in it, which makes it harbor a lot of germs that they can easily become infected with.

Between the 14th day and two months, you may notice an increase in mortality. The vast majority of deaths in these young rabbits is related to their intestines. For some reason, they are very susceptible to inflammation of their intestines and they may or may not get diarrhea, and simply die for no apparent reason. Many rabbit raisers put Terramycin in their drinking water for two weeks, starting the 14th day, in order to curb the alarming death rate. It is met with some success, but, unfortunately, enteritis, as it is called, is a big killer. It's also a big killer of cattle and pigs at the same age. In them it is called scours. They are treated in the same way as rabbits. I think the reason for intestinal disease at this age is the change from milk to solid food. The intestines become somewhat allergic to the new foods it is processing and sets up a reaction that can lead to diarrhea or constipation, in any case, causing intestinal inflammation. Terramycin helps by keeping bacterial build up from killing its host.

**Weaning**

Since the bunnies start eating solid food between the 11th and the 14th day, they continue to grow and may be weaned as early as 4 weeks after birth. Usually, it is best to keep them with their mother until they are 6 weeks old, but you may wean them at 4 weeks without complication. Some breeders allow them to go 8 weeks before weaning. This maximizes their nutrition and growth. NEVER let them continue with their mother after they are 3 months old.

Weaning simply means taking them away from their mother. Sometimes, it is best to take all of them away except for one, which you would take away one week later. This is supposed to give the mother's breasts time to acclimate to not having to nurse, causing less pain.

At the time of weaning, you should sex the bunny and separate the males and females into their own cages. At the same time you sex them (see my other web page on sexing rabbits) you should check their teeth. This is very important. While the bunny is on its back, spread its lips apart sideways and note how the teeth are set. The upper teeth must overlap the bottom teeth. If the upper teeth meet the lower teeth or the lower teeth overlap the top teeth, this rabbit has malocclusion or "wolf-teeth". This disqualifies it for show as well as breeding or pet purposes. The teeth will eventually grow out to look hideous and the lower teeth may dig into the upper gums, or worse, the rabbit may not be able to eat.

If you find a rabbit with wolf teeth, do not sell it to a pet store except as a feeder rabbit for snakes. The wolf teeth trait can be passed down to offspring, and no one wants a rabbit with wolf teeth. Sell the rabbit for meat but never for breeding or to be someone's pet unless they are well aware of what it will take to care for the rabbit with this condition.

You may keep the rabbits you've weaned together, separated by sex, until about 4 months, at which time they need to be totally separated - one rabbit per cage.
Emergency Milk Replacer

In the event that you need to help feed your kits because something happens to the mother, here is a little recipe for a rich emergency milk replacer:

- Goat milk
- Baby formula
- Whipping cream (optional)

Mix ratio of 1 part goats milk and 1 part baby formula, you can also add some whipping cream. Heat in the microwave until warm and feed trough a syringe. Hold the baby upright in your hand and feed him until his belly is round and full. Sometimes babies eat so fast they get milk in their lungs, if your baby starts choking hold him upside down until the milk drains then give him a moment to catch his breath.

Rabbit milk is extremely rich so that it is hard to replace. Never use puppy formula, and the above parts don't work well enough on their own. Over trial and error, a there are some breeders who have found that this is the best emergency milk replacer, though other milk replacers can be ordered from various small animal supply businesses. They have also found that some babies have an allergy to an ingredient(s) (in what they believe is the baby formula) that causes the fur to fall out; however it will grow back, just keep such bunnies warm. If you raise a litter completely on this formula you should give them hay or straw daily to help prevent loose stool (a common problem with hand fed babies), once they are old enough to eat it.