

# Breeding Season Preparations for Meat Goats

**A successful kidding season starts with good management practices to prepare goats for the breeding season.**



Photo by Melanie Barkley

A successful kidding season first starts with preparations for the breeding season. There are a few key management aspects that are critical as part of the breeding season preparations. These include evaluating body condition, flushing the does, conducting a buck breeding soundness exam, and considering aspects that promote embryonic survival.

## Evaluating Body Condition

Body condition scoring allows producers to evaluate both nutrition and genetics within a herd. Proper body condition will help to ensure a successful breeding season followed by a successful kidding season. Goats are scored on a 5-point body condition scale, with 1 being very thin and 5 being very fat. Evaluations should take place throughout the year as body condition scores change. Good times to evaluate body condition are prior to the start of the breeding season, about four to six weeks prior to kidding and after weaning.

Body condition is evaluated by handling goats in three areas: the lumbar area located near the loin, the sternum or breastbone, and the ribs with the intercostal spaces between the ribs. When handling the lumbar area feel for any fat covering across the backbone of the animal and at the transverse process, which is a horizontal bone located below the loin muscle. Producers can also assess the fullness of the

muscling in the loin and leg muscles as well as consider how prominent the hip bones and ribs are by sight and feel. The ideal body condition score during most times of the year would be a 3, although a 2.5 to 4.0 score would still be acceptable.

Goats with a body condition score of 1 will have a spine and ribs that are visible. The transverse processes will also be visible and easily felt. These emaciated goats will show atrophy of the loin and leg muscles. Because goats gain weight slowly, be sure to plan well ahead of the breeding season if body condition needs to be improved. This can be accomplished through supplemental energy and protein.



Very thin does with a body condition score of 1 have hip bones and a spine that can be easily seen. Photo by Melanie Barkley

Goats with a body condition score of 3 will not have a visible spine or ribs, but the spine and ribs should feel smooth and the intercostal spaces can be felt with pressure. The transverse processes should also not be seen but can be felt with slight pressure. The loin and leg muscles of a goat with a body condition score of 3 will be well filled out and should have a smooth fat cover. These goats would be considered in ideal body condition for the breeding season.





Does in ideal condition have a spine and ribs that are not readily visible. Photo by Dianne Fisher

Goats with a body condition score of 5 will have a spine and ribs that are completely covered with fat that can only be felt with pressure. The transverse processes are also completely covered with muscle and fat and can only be felt with pressure. The loin and leg muscles on goats with a body condition score of 5 will be full and covered with fat. These goats often exhibit a very large belly. These overly fat does should be avoided. Bucks with a body condition score of 5 may have issues with libido during the breeding season, while does will have an increased likelihood of problems during late pregnancy and when kidding.



Goats with a body condition score of 5 are considered obese. Their body is well covered with fat and often exhibits fat around the sternum. Photo by Melanie Barkley

Body condition scoring prior to the breeding season allows producers to make culling decisions as well as assess the herd's nutritional program. Monitoring body condition throughout the year and prior to the breeding season allows producers to make any needed adjustments to nutrition. Maintaining goats in ideal body condition can improve herd performance during the breeding season and at kidding time.

## Flushing

Once a producer completes body condition scoring, he or she can then make decisions regarding nutritional adjustments for flushing the herd. Flushing is the practice of increasing the plane of nutrition prior to the breeding season in order to encourage does to produce twins. This is generally done by increasing the energy in the doe ration and should start approximately one month prior to introducing the buck to the does.

With increased dietary energy, the doe will begin to increase body condition. This will then signal the doe's body that she will be capable of supporting more than one kid. In turn, this will increase her ovulation rate, which should result in a higher kidding percentage, or more kids born per doe.

Energy can be increased in the ration by adding grain at a rate of one-half to one pound per doe per day or by moving the entire herd to a lush pasture. Many producers feed corn as the grain source, while others prefer a mixed grain formulation. The total amount of grain fed should be adjusted based on the body condition of the does.



Many producers flush goats on high quality pasture, while others may prefer to feed grain to increase energy in the ration. Photo by Dianne Fisher

The additional energy in the ration should be fed throughout the breeding season and continue until a few weeks after the buck is removed. This will allow for implantation of the embryos in the uterus. For these reasons, flushing has the greatest impact early in the breeding season. Does with body condition scores of 2 to 3 often respond best to flushing, while does with a score of 4 or 5 have little response to flushing.

While emphasis is placed on does for flushing, bucks will also benefit from the additional energy in the ration because it helps them lose less weight during the breeding season. Plus, the added energy helps the bucks maintain their vigor for breeding.

## Buck Breeding Soundness Exams

Prior to breeding, evaluate breeding soundness of all bucks to prepare for the breeding season. A good quality buck should have adequate size and muscling, be vigorous and active, and have a strong and masculine appearance. He should be structurally correct, should stand with all four feet squarely underneath him, be up on his pasterns, and be able to move freely.

New bucks should be purchased at least one month prior to the breeding season. This will allow time for the buck to adjust to the new location and allow a producer ample time to quarantine the buck from the rest of the herd to ensure he is not carrying any contagious diseases.

Prior to the start of the breeding season, a physical examination of the buck should be conducted for breeding soundness. Allow enough time for the buck to heal from any injuries or be replaced if he is found unsound. The examination should include palpation of the testicles and epididymis, and visual appraisal of feet, legs, eyes and teeth. In addition, be sure to check the body condition of the buck. Bucks that are in poor body condition will often have poor semen quality and bucks that are too fat often lack the libido to breed does.

Testicles of the buck should be firm and be adequate in size, and be free of any lumps or abscesses, which could indicate an injury or disease. The tail of the epididymis is located at the bottom end of the testicle. It should be slightly rounded and free from any hard knots. This is important because the tail of the epididymis is where most of the sperm is stored.

All bucks should have well-formed testicles that are equal in size and be located in a single scrotum. Avoid bucks with a split scrotum or testicles that hang far below the hocks. Mature bucks should have a scrotal circumference of at least 25 cm or 10 inches. Young bucks should have testicles that are adequate in size for their age. The size of the testicles relates to the ability of the buck to produce sperm. This in turn will allow the buck to breed a large number of does. Larger scrotal circumference directly correlates with greater semen volume and sperm viability. Larger scrotal circumference also correlates to siring doe kids that reach puberty earlier than does kids produced by bucks with a smaller scrotal circumference.

Trim feet and conduct a visual appraisal of the feet and legs to look for lameness and evidence of foot rot or foot scald. Signs that a buck has these issues would include a red inflammation between the toes, or this could present as a white color with a moist appearance. Foot rot will appear as though the foot is rotting. Foot rot will also have a foul odor associated with the problem.

Check the buck's eyes to ensure that they appear normal. The membranes around the eye should be bright pink to red in color. If they are gray or white in appearance, the buck is likely anemic and needs dewormed. FAMACHA scoring should be used to assess the need to deworm.

Handle bucks prior to breeding season to check for body condition. The buck should have some extra condition or fat reserves, but not be overly fat. Bucks should have a body condition score of 3 to 3.5 prior to breeding season. Thin bucks may have less stamina throughout the breeding season and may have lower semen quality, while overly fat bucks may have less libido. As the breeding season progresses, a buck can be expected to lose body weight, but should not reach a score lower than 2.5.

Elevated body temperature that results from illness or from heat stress both affect semen quality very quickly. Sperm production takes approximately six weeks to complete and so bucks affected by elevated body temperatures may have reduced ability to successfully breed does for that length of time.

If there are questions regarding the breeding soundness of a buck, his ability to breed does can be checked either through a semen evaluation or by using a method that allows the buck to mark the does as he breeds them. A veterinarian, or a breeding service, should be able to conduct a semen evaluation test. Evaluations will involve collecting semen and then viewing under a microscope to look for numbers of live and motile sperm cells, plus numbers of abnormal sperm cells.



A marking harness can be used to identify does bred by the buck. Change the color every 21 days to identify does that are bred multiple times. A large number of does remarked can indicate infertility issues with a buck. Photo by Clover Knoll Boer Goats

Even though a buck succeeds in getting does pregnant, it is important to follow good management practices to ensure that the does remain pregnant until the kids are ready to be born.

## Aspects to Promote Embryonic Survival

In addition to body condition scores, body weight management of young does is important. Yearlings should weigh at least 80% of their mature weight by the start of the breeding season and doelings (doe kids) should weigh 65 to 70% of their mature weight or at least 80 lb. before breeding. In order for doelings to reach this desired weight, most will require a grain supplement. In general, goats gain approximately a 0.1 to 0.25 pound per day on pasture. This rate of gain results in doelings weighing less than recommended for breeding. Therefore, producers should calculate weight gain required and adjust rations to accommodate a faster rate of gain if they plan to breed young doelings.

Maintaining body condition scores, or improving body condition of thin does, during the first 90 days of pregnancy helps promote embryo survival. The embryo implants itself in the uterus 2 to 3 weeks after fertilization and placental development occurs shortly after that. The placenta connects the developing fetus (kid) to its dam and provides nourishment for the fetus to grow plus eliminates waste products. Good nutrition allows the placenta to develop to full size during this period, thus providing optimal amounts of nutrients to the fetus. Poor placental development can impact kid birth weights and can ultimately impact the future reproductive potential of a kid. Kid birthweight is one of the greatest predictors of kid survival: smaller kids are less likely to survive birth as compared to kids with average birth weights. A high percentage of kid mortalities that occur prior to weaning occur during the first 48 hours after birth.



Goats in good body condition that are flushed on high quality pasture or supplemented with grain to increase their plane of nutrition have a higher likelihood of producing twins. Photo by Melanie Barkley

Rations should provide adequate energy, protein, vitamins and minerals. And, fresh clean water should be available at all times. Typically, good quality pasture and a good quality mineral mix provide sufficient nutrients to support the

pregnancy. However, pay close attention to pasture mixtures during the first 45 days of gestation. Legumes, and red clover in particular, produce phytoestrogens. These estrogenic compounds can impact reproduction by reducing ovulation and conception rates. Fertility generally returns to normal within four to six weeks after removing small ruminants from pastures containing high levels of phytoestrogens.

As breeding season continues, be sure to assess body condition scores of does and bucks. Make sure they receive adequate nutrition to support a body condition score of 3 or provide additional nutrients in the ration to improve body condition scores. The ultimate goal is for does to consume a ration that will promote ovulation rates to conceive twins, support embryo survival and result in a healthy set of twins. All of these steps taken prior to the breeding season can lead to a more successful kidding season.

## Authors

### Melanie Barkley

Extension Educator, Livestock

[meh7@psu.edu](mailto:meh7@psu.edu)

814-623-4800

---

## extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

**This publication is available in alternative media on request.**

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

This article, including its text, graphics, and images ("Content"), is for educational purposes only; it is not intended to be a substitute for veterinary medical advice, diagnosis, or treatment. Always seek the advice of a licensed doctor of veterinary medicine or other licensed or certified veterinary medical professional with any questions you may have regarding a veterinary medical condition or symptom.

© The Pennsylvania State University 2020

Code: ART-6600