

## Sheep Management Schedule

*Scott P. Greiner, Extension animal scientist; Virginia Tech  
Publication originally written by Steven H. Umberger, Extension Animal Scientist.*

Profitable sheep production requires the application of certain well-timed management practices to ensure the overall well-being of the flock. Advances in breeding, lambing, feeding, and health management have given producers the tools to increase both the number and weight of lambs marketed annually.

Sheep-budget analyses show that other than market price, the percentage of lambs marketed per ewe per year has the greatest impact on profitability of production. Conception rate, lambing rate, lambing percentage (lambs born/ewe lambing), and lamb survival rate are all important flock performance characteristics affecting the percentage of lamb crop marketed.

Certain basic records must be kept to monitor flock performance. Without records, it is impossible to address those production and management practices that affect overall productivity. With records, the tools for decision making are in place for problem solving, identifying management priorities, and setting production and marketing goals.

No single system of production is right for everyone. The ideal lambing season for a flock will depend on the available facilities, labor and management resources, genetics, pasture and feed resources, and the operation's marketing program. However, each system of production must emphasize those practices which enhance the overall well-being of the flock. Areas of critical importance that must be considered for every flock include internal parasite control, foot-rot control, and predator control.

In many cases, the timing of the management practice is as important as the practice itself. Therefore, every sheep farm should have, at the very least, a simple set of working pens that facilitate the handling of sheep at critical times of the year. Too often, in the absence of a working facility, important tasks are ill-timed or left undone.

The following schedule is divided into three parts. Section 1 includes jobs that should be performed during particular seasons of the year regardless of lambing date. Section 2 lists management practices that should be performed according to breeding and lambing dates. Section 3 gives some general recommendations that should be considered as they relate to overall flock health, facilities, breeding, and feeding management.

### Section I

#### Winter

1. Ewes up through 15 weeks of gestation should receive 4 lbs of a good quality grass/legume hay daily.
2. Ewes in the last 4 weeks of gestation should receive 4 lbs of a good quality grass/legume hay plus 1 lb of corn daily.
3. The highest quality hays should not be fed during gestation. Utilize average- to good-quality hays during the early gestation period, when ewe nutrient requirements are low compared to late gestation and lactation. If high-quality hays, such as alfalfa, are fed during gestation it is important to limit intakes as overfeeding is costly.
4. If hay is limited, 1 lb of corn may be substituted for 2 lbs of hay. To prevent wool picking and digestive disturbances, ewes should receive a minimum of 1.5 lbs of hay per day.
5. Provide fresh drinking water, free of ice, every day. Feed intake is severely depressed for sheep deprived of water for more than 24 hours. Lack of water predisposes ewes in late gestation to pregnancy disease.
6. To minimize feed wastage and to avoid the spread of disease, hay and grain should not be fed on the ground.

7. Provide a complete mineral mix free-choice. The mineral should be specifically formulated for sheep and fortified with selenium.
8. Lactating ewes with singles should receive 5 lbs of a good quality grass/legume hay plus 1 lb of a 15% crude protein grain mix daily.
9. Lactating ewes with twins should receive 5 lbs of a good quality grass/legume hay plus 2 lbs of a 15% crude protein grain mix daily.
10. Avoid damp, dark, or drafty barns, and wet muddy areas in or around buildings. Young lambs are able to withstand cold temperatures quite well, but drafts and dampness can lead to losses from baby lamb pneumonia.
11. Market spring-born lambs that have been grazed through the summer and fall. Grain supplementation the last 30 to 60 days prior to marketing will provide efficient weight gain and enhance market readiness. Spring-born lambs should be sold no later than April.

## Spring

1. Treat ewes and all lambs over 6 weeks old for internal parasites the day before turning onto spring pasture. Thereafter, treat lambs and ewes once every 3 to 4 weeks throughout the grazing season.
2. Shear during March, April, or May if ewes were not shorn pre-lambing. Shear white face ewes first and package and market their wool separately from blackface and blackface cross ewes.
3. Store wool in a clean, dry place. Do not store wool on the ground or on concrete.
4. Sell cull ewes in late February, March, or early April.
5. Trim and check feet, and put the flock through a foot bath prior to placing ewes on pasture.
6. Move ewes nursing lambs to fresh pasture every 2 to 3 weeks. An ideal sheep pasture contains a mixture of grass and clover with an average height of 4" to 6".
7. Restrict the grazing flock to two-thirds of the available pasture. Harvest hay from the remainder. Allow time for regrowth and graze for the rest of the year.
8. Identify and retain ewe lambs from a winter lambing to be used as replacements. Breed so that they will lamb first as yearlings.
9. Manage winter-born lambs (December through March) so that they are marketed in the spring prior

to the season price decline that occurs heading into the summer months.

## Summer

1. Provide a complete mineral mix, specifically formulated for sheep and fortified with selenium, to the flock during the grazing season.
2. If adequate pasture is available, allow spring-born lambs to graze on the ewes into the fall. Allow spring-born lambs that will be marketed in late fall and winter to attain cheap weight gains from forage. Spring-born replacement ewe lambs may be weaned, sheared, and placed on higher-quality pastures to optimize development prior to the breeding season.
3. Treat ewes and lambs for internal parasites at least once every 3 to 4 weeks. Failure to do so will result in poor lamb performance and unnecessary death loss.
4. Starting in August, stockpile fescue pastures for late fall and winter grazing.
5. Assess ram inventory to decide if additional or new rams need to be acquired, and investigate potential sources of new rams. Acquire replacement ewe lambs if open females are to be brought into the flock prior to the breeding season. Isolate sheep from outside sources a minimum of 4 weeks before placing with the existing flock.

## Fall

1. Test hay and silage samples to determine their nutritive value. Work with an Extension agent to determine the supplements that will be required to formulate balanced diets for winter feeding.
2. Trim and check feet.
3. Graze spring-born lambs on available fall pasture and aftermath hay fields.
4. Avoid marketing lightweight lambs in September and October when market prices are typically at their lowest levels of the year. Market spring-born lambs in late fall through winter.
5. Supplement grain on pasture to promote increased lamb weight gains.
6. Identify and retain ewe lambs from spring lambing to be used as replacements. Breed so that they will lamb first as yearlings.
7. After November 1, place ewes on stockpiled fescue pasture. With adequate fall growth, one acre

of stockpiled fescue should supply enough feed for five non-lactating ewes through February 1. Use temporary electric fence to limit the sheep's access to a portion of the stockpiled pasture until fully utilized.

## **Section II**

### **Management Schedule for Breeding and Lambing**

#### ***6 Weeks Before Breeding***

1. Wean all lambs that remain with the flock.
2. Catch and check all ewes that are limping. Trim their feet and treat if necessary.
3. Acquire replacement ewes, if replacement ewes will be brought in prior to the breeding season. Keep them isolated from the regular flock for at least 4 weeks to reduce the risk of bringing in diseases such as soremouth and foot rot.
4. Determine if a sufficient number of rams is available for breeding. A ram to ewe ratio of 1:25 for ram lambs and 1:35 for mature rams is generally recommended.
5. Have a veterinarian perform a breeding soundness examination on all rams. The breeding soundness exam should include semen evaluation.
6. Condition score rams both visually and by handling them down their top. Rams in thin condition should receive 2.5 lbs of grain per day in addition to their normal diet, while rams in moderate condition should receive 1 lb of grain daily.
7. Shear the rams. Rams becoming overheated or running a fever as a result of sickness may be subfertile for much of the breeding period.
8. For spring and summer breeding, keep rams out of sight and sound of the ewe flock until the first day of breeding. Avoid fence line contact. Breeding performance will be improved as a result of the "ram effect."
9. Vaccinate ewes for abortion diseases as per label indications.

#### ***2 Weeks Before Breeding***

1. Treat ewes and rams for internal parasites.
2. Place ewes on high-quality pasture. Avoid pastures with 50% or greater stands of clover or other legumes. Legumes have been shown to contain estrogenic compounds that lower conception rates.

3. Flush ewes by feeding 1 lb of whole corn or barley per head daily, starting 2 weeks before the breeding season and continuing 2 weeks into the breeding season. The practice of flushing improves lambing percentages by 10% to 15%.
4. Keep unfamiliar rams together in a small pen for 3 to 5 days so they will become accustomed to one another. This prevents death or injury that could occur from fighting.

#### ***At Breeding***

1. Where practical, provide the breeding flock access to a cool barn, shed, or woods during the hot part of the day.
2. Use a marking harness on all rams. This helps to determine the percentage of ewes that are cycling and helps to evaluate the breeding performance of the rams. Change colors on the harness every 17 days. A large number of ewes re-marking may indicate a ram or ewe fertility problem. By recording breeding dates on the ewes after they're marked, they can be sorted and managed more appropriately for lambing.
3. When using more than one ram in a group of ewes, try to use rams of similar size and age. Ram lambs should not be used in multiple-sire breeding groups with mature rams. Larger, older rams tend to dominate smaller rams and breed more than their share. This may result in lower conception rates and lower lambing percentages.
4. Divide the flock into single-ram units. A ram to ewe ratio of 1:25 for ram lambs and 1:35 or more for mature rams is generally recommended. Change or rotate rams every two weeks, and observe the flock closely to be certain ewes are settling. Exercise a controlled breeding season, and remove rams after 60 days.
5. Rams can lose up to 12% of their bodyweight during a 45-day breeding period. Be prepared to supplement their diet with grain whenever possible.
6. Provide a mineral supplement specifically formulated for sheep on a free-choice basis throughout the breeding period.

#### ***Breeding to 6 Weeks Before Lambing***

1. Mature ewes in average to good body condition should be fed to maintain or slightly increase their bodyweight during the first 3.5 months of gestation. This is the time to take advantage of poor quality pasture or crop residue. If this period occurs during

the winter, hay or silage will do the job, with no supplemental grain required.

2. Thin ewes should be fed separately and supplemented with 1 to 1.5 lbs of grain per day to gain 10 to 15 lbs by 6 weeks before lambing.
3. Pregnant ewe lambs should be fed separately from mature ewes. They should gain approximately 25 lbs from breeding to 6 weeks before lambing. Attempts to cause large weight gains in ewe lambs during late gestation may lead to lambing problems.
4. If pregnant ewes are to be brought into the flock, keep these ewes separate from the main flock through lambing when feasible. This will diminish the risk of introducing abortion and other diseases into the main flock.

### **6 Weeks Before Lambing**

1. Start feeding 0.5 lb of grain per head daily as a preventative for pregnancy disease. Grain may be in the form of whole shelled corn or barley. Even if ewes are on good quality pasture, they still require the extra grain. During the winter or when on poor quality pasture, feed approximately 4 lbs of hay in addition to grain.
2. Supplementation of tetracycline pre-lambing has been shown to reduce the incidence of abortions. Consult with your veterinarian on a flock health management protocol.
3. Make sure there is plenty of feed trough space so that ewes do not crowd each other at feeding time.
4. Check and avoid ditches, sills, narrow gates, or any other objects that would cause ewes to jump, crowd, squeeze, or climb before lambing.

### **4 Weeks Before Lambing**

1. Shear the wool from around the head, udder and dock of pregnant ewes. If covered facilities are available, shear the ewes completely. Sheared ewes are more apt to lamb inside, the inside of the barn stays drier because less moisture is carried in by the ewes, more ewes can be kept inside, and it creates a cleaner environment for the lambs and the shepherd. Sheared ewes must have access to a barn during cold, freezing rains, and they must receive additional feed during periods of extremely cold temperatures.
2. Vaccinate ewes for overeating disease and tetanus. These vaccines provide passive immunity to baby lambs through the ewes' colostrum until they can be vaccinated at 4 to 6 weeks of age.

3. Check and separate all ewes that are developing udders or showing signs of lambing. Check and remove heavy ewes once a week during the lambing season. Increase the grain on all ewes showing signs of lambing to 1 lb daily, and feed all the good quality grass/legume hay they will clean up.
4. Observe ewes closely. Ewes that are sluggish or hang back at feeding may be showing early signs of pregnancy disease. If so, these ewes should be drenched with 2 ounces of propylene glycol 3 to 4 times daily.
5. Shelter heavy ewes from bad weather.
6. Get lambing pens and lambing equipment ready. There should be one lambing pen for every 10 ewes expected to lamb.
7. Stock lambing supplies such as iodine, antibiotics, frozen colostrum, stomach tube, injectable selenium and Vitamin E, OB lube, lamb puller, ear tags, etc.

### ***At Lambing Time***

1. Check ewes on a frequent basis (every 3 to 4 hours), as feasible. Do not check ewes in the middle of the night. Activity at that time may stimulate ewes to lamb two to three hours before they normally would.
2. Lambing cubicles placed around the walls in the lambing area of the barn measuring 4' X 6' have been used successfully as a place for ewes to lamb away from the other ewes in the barn. The cubicles have a 2' wide opening with a 10" board as a threshold to keep lambs inside.
3. After lambs are born, move the ewe and her lambs to a lambing pen with a minimum dimension of 5' X 5'. Check the ewe's udder to see that she has milk, strip each teat to remove the waxy plug that may be present at the end of the teat, and make sure lambs nurse within 30 minutes.
4. Colostrum is critical for baby lamb survival. For ewes without milk or for lambs that fail to nurse, lambs must be given colostrum via a stomach tube. If sheep colostrum is not available, cow or goat colostrum should be used. Colostrum can be frozen in ice cube trays or stored in "zip-lock" storage bags. Colostrum should be thawed using indirect heat. Thawing by direct heat destroys the antibodies that are present. Lambs should receive 20 ml (cc) of colostrum per pound of body weight. It works best if feedings can be 4 hours apart.
5. Only use a heat lamp if lambs are weak and chilled. Avoid danger of fire by hanging heat lamps 3'



above the bedding and in the corner of the lambing pen. Block off the corner so that the ewe cannot get under the lamp.

6. Check on the health of the ewe and her lambs at least three times daily. Lambs that are lying down should be made to get up. Those that fail to stretch after getting up may have a problem that requires further examination. The biggest cause of baby lamb mortality is starvation.
7. Virginia is a selenium deficient state. If selenium deficiency has been a problem, lambs should be given an injection of 0.25 mg selenium per 10 lb of body weight immediately after birth. A good quality mineral provided to the ewe flock on a year-round basis has been shown to be the best way to prevent selenium deficiency.
8. A general rule of thumb is for the ewe and her lambs to stay in the lambing pen one day for each lamb. Weak or small lambs may require a longer stay.
9. Ewes should receive fresh water and high quality hay the day of lambing. Don't feed grain until the second day. One pound of grain plus 5 lbs of good quality hay will take care of their needs until moving to a mixing pen.
10. If ewes were not treated for internal parasites within 3 weeks of lambing, they should be treated prior to removal from the lambing pen.
11. Keep records on all ewes, noting those that had problems. Individually identify lambs so they can be matched with the ewe. The ability to match ewes and lambs is important to monitor performance, and individual identification is critical for making selection and culling decisions.
12. Move ewes and their lambs from lambing pens to mixing pens. Make sure lambs are matched up well with their mothers before moving to larger groups. Ewes with twins should be receiving 2 lbs of a 15% crude protein grain mix and 5 lbs of good quality hay daily. Ewes with singles should be receiving 1 lb of a 15% crude protein grain mix and 5 lbs of good quality hay daily.
13. All lambs should be docked and castrated by the time they are 2 weeks old.
14. Lambs on a winter-lambing program should have access to a high-quality creep feed by the time they are 7 days old. Creep feeds should contain 18% to 20% crude protein and be low in fiber. Make sure the source of protein in commercially prepared lamb creep pellets is all natural protein and does

not contain urea. Maintain at least a 2:1 calcium to phosphorous ratio in the feed by adding 1% feed grade limestone. Calcium to phosphorous ratios of less than 2:1 may lead to urinary calculi. When constructing a creep area, keep the following points in mind: 1) place the creep in a convenient location close to an area where the ewe flock congregates; 2) have openings on at least two sides of the creep and several openings per side; 3) keep the creep area clean and well bedded; 4) place a light over the creep to help attract lambs. Sunlight shining into the creep area works well; 5) keep feed fresh and provide clean water in the creep; and 6) construct the creep feeder so that lambs cannot stand and play in it. Allow 2" of trough space per lamb.

### **Post-Lambing**

1. Vaccinate lambs for overeating disease at 4 weeks of age. Booster the lambs for overeating disease one week before weaning.
2. Wean winter born lambs at 2 to 3 months of age and spring-born lambs at 3 to 5 months of age. Weaning age will vary depending on the marketing plan for the lambs. Generally, winter-born lambs should be weaned at an earlier age and managed to grow rapidly and be sold in the spring at a young age. Spring-born lambs should be weaned at an older age, derive a large percentage of their growth from forage and therefore grow at a slower rate, and be marketed in the late fall and winter at an older age compared to winter-born lambs.
3. For ewes weaned at 2 to 3 months of lactation, supplemental grain should be discontinued and forage quality decreased one week prior to weaning. Fasting ewes for 72 hours without feed and water at weaning has been used successfully to prevent mastitis. During periods of high temperatures, make sure ewes have access to shade.

## **Section III**

### **General Recommendations**

#### ***Breeding Stock***

*Ewes* - Use only crossbred ewes for commercial sheep production. Crossbred ewes wean more pounds of lamb than the average of the purebred ewes that make up the cross. Crossbred lambs are more vigorous at birth and are heavier at weaning. Studies have shown that two-breed cross ewes mated to a ram of a third breed wean approximately 35% more pounds of lamb per ewe

mated than the average of the purebred ewes producing purebred lambs. Large differences exist between breeds for several economically important traits. For commercial flocks, it is unlikely that any one breed can meet production goals as effectively as a combination of breeds used in a planned mating system. Breeds need to be selected that contribute positively into a designed production system. Traits important for ewe breeds in crossbreeding programs include early puberty, moderate mature size, high fertility, optimum milking ability (appropriate for feed resources), longevity, management ease, and acceptable growth characteristics. Traits important in selecting a ram breed for use in crossbreeding programs include high growth rate with acceptable mature size, lamb survivability, and carcass merit. Retain multiple-birth ewe lambs for replacements that are above average in growth rate and born early in the lambing season. Breed replacement ewe lambs to lamb first as yearlings, and market open ewe lambs.

*Rams* - Buy sound, growthy, healthy, heavy muscled rams for market-lamb production. Sources for breeding rams include the Virginia Ram Performance Test, reputable consignment sales, or buying directly from a breeder. Regardless of the source, rams should be sold as guaranteed breeders. Purchase rams from sources that offer performance records and information that will be useful in making selection decisions.

*Breeding Season* - Available labor, barn space, weather, predators, lamb markets, and the amount and quality of feed and pasture should all be considered in determining the most appropriate lambing season. Fall and winter lambing are best suited for farms with good winter feed and suitable facilities, and for areas with high summer temperatures. Spring lambing is the preferred production system in the more mountainous parts of the state, and has been shown to be consistently more profitable than other systems of production. Large operations find it best to breed ewes in groups and spread their lambings over a period of several months. Sheep are seasonal breeders. Most breeds and their crosses begin to cycle in late summer, and are most fertile in the fall. On average, ewes exhibit heat every 17 days during the breeding season, stay in heat for 18 to 40 hours, and ovulate at the end of heat. The gestation period for sheep ranges from 140 to 159 days, with an average of 145 days.

*Lamb Marketing* - The ideal type and quality (grade) and weight for market lambs will be determined by the intended market and season of the year. Lambs may be effectively marketed at weights ranging from 50 to 120 pounds. Historically, lamb prices are seasonally highest

in April and May, and lowest from September through November. Consequently, winter-born lambs should be marketed in the spring and early summer and spring-born lambs marketed in late fall and winter.

*Wool Marketing* - A large percentage of the wool marketed in Virginia is sold through the Virginia Wool Pool System. All producers in Virginia are eligible to participate. The wool pool is coordinated by local sheep and wool organizations with cooperation from Virginia Cooperative Extension. The wool is taken up at several delivery points across the state in June and July each year.

*Records* - Production records are important not only for selection, but also as a management tool. Basic performance records start with individual animal identification at birth. Simple records would include birth date, type of birth, and type of rearing. In many instances, individual lambs could be identified as to their dam as well as sire (or perhaps breed of sire in multiple-sire breeding groups). These basic records can be very useful to the shepherd in terms of monitoring overall prolificacy of the flock, breed types and crosses within the flock, and individual reproductive performance of ewes. More extensive performance records, including individual weaning weights of lambs and post-weaning growth measures, would also be advantageous to commercial flocks. Addition of these records provides the opportunity for more accurate selection for growth traits. To be used properly in selection, all records need to be adjusted to a common basis. Growth measures such as weaning weight need to be adjusted for sex, type of birth/rearing, lamb age, and age of dam. These adjustment factors are readily attainable from several sources, and rather simple to apply.

*Working Facilities* - Key management practices such as vaccinations, foot trimming, and internal parasite control are more likely to occur if a simple set of working pens is available. The six major components of an effective working facility for sheep are: 1) large holding pen; 2) crowding pen; 3) crowding chute; 4) long narrow working chute with cutting gates; 5) foot bath; and 6) loading chute.

*Foot-Rot Control* - The only way to introduce foot rot into a flock of sheep is to purchase sheep that are already infected. Quarantine all new purchases for a period of 4 weeks before mixing with other sheep on the farm. Trim and check feet on all sheep that are limping as soon as detected. Foot rot can be effectively eliminated through a combination of foot trimming, foot soaks in a 10% solution of zinc sulfate for 30 to 60 minutes at a time,

and the use of the foot rot vaccine. Add 8 lbs of zinc sulfate (powdered form) to 10 gallons of water for a 10% solution. Zinc sulfate goes into solution easier in hot water. Add one cup of liquid laundry detergent per 20 gallons of water as a wetting agent.

*External Parasite Control* - External parasite infestations occur much less frequently than internal parasitism in sheep. Therefore, routine treatment for external parasites is not commonly practiced by many shepherds. However, sheep keds, lice, and heel mites may have an impact on individual flocks. There are a number of effective products on the market to treat external parasites. Consult with your veterinarian if you observe or suspect an external parasite problem.

*Internal Parasite Control* - An effective internal parasite control program should not rely solely on the use of anthelmintics. Using anthelmintics as the only method of control often results in increased incidence of internal parasite resistance. Whenever possible, sheep should be placed on “clean pastures” to slow down the rate of reinfection. Examples of clean pastures include: 1) fields that have been without sheep for more than a year; 2) fields that were cut for hay since sheep last grazed there; and 3) fields grazed by cattle before sheep are allowed to graze. Critical times for treating sheep for internal parasites are: 1) treatment of ewes 3 weeks prior to lambing, or, at the very least, right after lambing; 2) treatment of ewes every 3 to 4 weeks during the grazing season; and 3) treatment of lambs every 3 to 4 weeks during the grazing season. Mark treatment dates on a calendar to reduce the risk of losing sheep from a failure to treat on time. Underdosing of anthelmintics results in accelerated rates of resistance by internal parasites. Anthelmintics should be rotated on a yearly basis but not rotated within a year. By using a different product each time sheep are treated, internal parasites are given the opportunity to develop resistance against a number of products at the same time.

*Predator Control* - Work with an Extension agent and/or an employee of USDA Animal Damage Control to develop strategies that prevent predation by coyotes and dogs. The importance of properly constructed fence cannot be overstated as a tool for protecting sheep from dog and coyote predation. Electrified boundary fence is one of the most effective and safest tools used for predator control. Other forms of control include: 1) housing sheep at night; 2) creating a number of “safe” pastures; and 3) use of guard animals such as dogs, llamas, or donkeys. Producers experiencing losses from predation should contact Animal Damage Control immediately for assistance in controlling offending animals.

## **Suggested Vaccinations**

### *A. Ewes, rams, replacement ewe lambs, and purchased replacement stock*

1. Clostridium perfringens Type C & D (overeating disease) and tetanus - Vaccinate with an initial series of two injections administered 30 days apart. Thereafter, booster ewes annually at 4 weeks before lambing.
2. Vibriosis and EAE - Vaccinate with an initial series of two injections followed by an annual booster. Follow product label indications for the administration of the vaccinations relative to the breeding season.
3. Contagious ecthyma (soremouth) - This vaccine is not recommended if soremouth has not been diagnosed on the farm. For flocks that have soremouth, new flock additions that are brought in should be vaccinated, particularly if they have not previously been exposed to the disease.

### *B. Lambs*

Clostridium perfringens Type C & D - Vaccinate with an initial series of two injections administered at 4 weeks of age and 1 week prior to weaning. Thereafter, booster vaccinations should be given 1 week before major changes in their diet are expected to occur.

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