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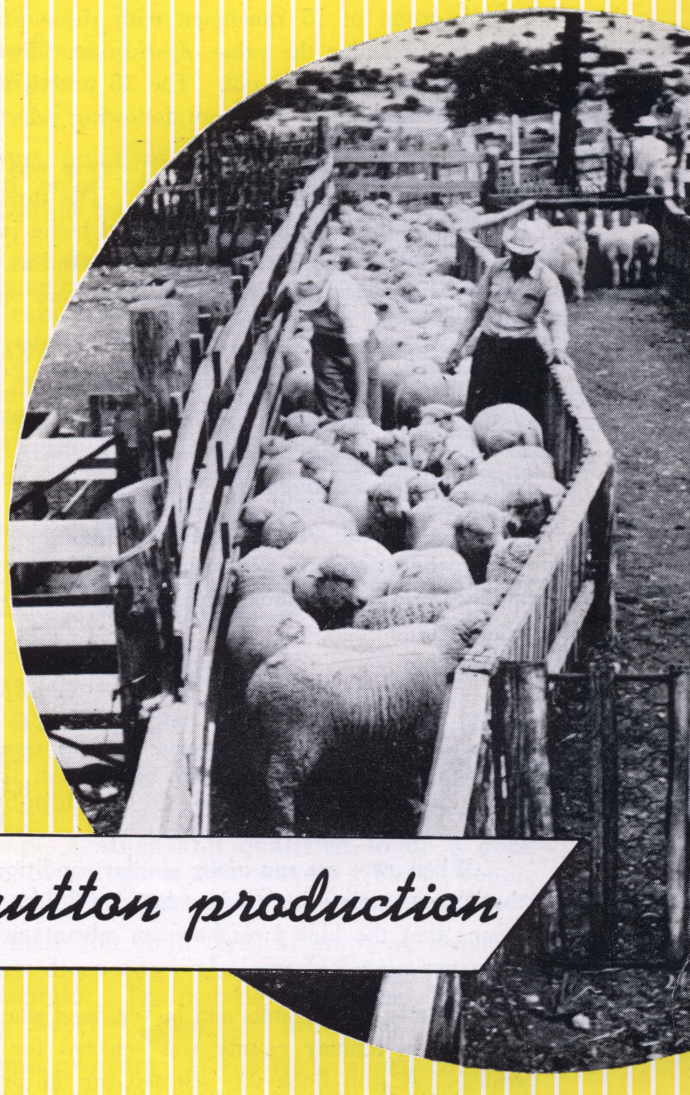
SELECTING SHEEP



for wool and mutton production

TEXAS AGRICULTURAL EXTENSION SERVICE
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Results of Selection

A group of 75 ranchmen with sheep producing wool of similar quality were used to determine the value of selection. Twenty-eight of these ranchmen practiced selection while 47 did not. The 28 practicing selection received 7.7 percent more for their wool than those not following selection.

One group of Rambouillet-type ewes was sorted into three groups, according to wool production and conformation. The three groups then were branded according to quality—those with the blue brand being judged the superior ewes, the red brand the second-best quality and the green brand as the lowest quality ewes. The following results were obtained when the ewes were sheared separately.

	AVERAGE FLEECE WEIGHT	*AVERAGE STAPLE LENGTH*
Blue group	9.25 lb.	2.8 in.
Red group	8.5 lb.	2.5 in.
Green group	8.4 lb.	2.2 in.

A group of Delaine-type ewes also was sorted into three groups according to wool production and conformation. The three groups were identified in the same manner as the Rambouillets and sheared separately. The following results were obtained.

	AVERAGE FLEECE WEIGHT	*AVERAGE STAPLE LENGTH*
Blue group	8.8 lb.	2.5 in.
Red group	8.4 lb.	2.3 in.
Green group	7.3 lb.	2.0 in.

When ewes are run under similar conditions, such as the above-mentioned groups, the longer staple ewes produce heavier fleeces with somewhat lighter shrinkage. This means that the blue ewes have an advantage in grease fleece weight and in grease price per pound of wool.

Equally good results can be obtained where shearing twice per year is practiced. A flock in Kinney county was selected for an improvement program, with good results. A stud flock was selected for the production of range rams; then a No. 1 and No. 2 flock were selected from the remaining ewes. The ewes were shorn in September and again in March, with the following results:

GROUP DESCRIPTION	*AVERAGE GREASE FLEECE WEIGHTS*	
	Fall	*Spring*
211 *stud ewes*	5.1 lb.	5.36 lb.
282 *No.* 1 *ewes*	4.8 lb.	4.8 lb.
382 *No.* 2 *ewes*	4.3 lb.	4.28 lb.
197 *top ewe lambs*	4.5 lb.	5.6 lb.

These are exceptionally good shearing weights for fall and spring shearing.

SELECTING SHEEP *for* Wool and Mutton Production

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INTRODUCTION

THE EWE'S FLEECE should pay for her keep, but many are kept in breeding flocks that will not live up to this requirement. It takes just as much grass to support a low-producing ewe as a high-producing one.

Contracting a given number of lambs is often responsible for keeping poor replacements. Ranchmen will contract a certain number of lambs for future delivery. If they do not have enough wether lambs to fill the order, they frequently complete it with the largest and growthiest ewe lambs rather than cut down on the average delivery weight. The largest, growthiest ewe lambs make up most of the best replacements. If they are sold for several years, the quality of the ewe flock will be reduced gradually. It would be better to sacrifice some on the average delivery weight by making up the delivery number with the small end of the ewes and keep the bigger, better doing ewes for replacements.

MAKING SELECTION WORK

A selection program will bring about increased production in any breeding flock, but its value may not be as readily apparent in flocks where there is little variation in fleece weight. Also, progress will be slower in extremely uniform flocks.

Requirements for Success

1. There should be enough sheep in the production program each year to enable the owner to sell the inferior sheep which are culled. This should be done faithfully.
2. Selection should be carried on for at least 5 or 6 years to produce permanent benefits.
3. The person making the selections should have an ideal in mind and select toward it. He should avoid allowing minor things —such as appearance of the ears, face covering, color of eyelashes, beautiful crimp and color of the hooves — influence his selection too much.
4. Rams should be carefully selected by the owner to improve the ewe flock. Selection of rams should not be left to the Purebred breeder. Although the Purebred breeder may select rams to the best of his ability and with every good intention, he may select the wrong type unless he is familiar with the flock in which the rams will be used. Unless rams are selected as carefully as ewes, there can be little benefit from a selection program.
5. Personnel trained in selection should be called in to assist the grower.

Obstacles

1. It is difficult to round up and get all the sheep out of some pastures. Some sheep will be missed, and among them there will undoubtedly be some inferior ones.
2. People trained and qualified to do a good job of selection are scarce. These people should have the confidence of the grower.
3. A poor job on a first attempt at selection may discourage the grower from further attempts. Trained personnel can help get the selection program underway.
4. Some growers believe their sheep to be so poor that the person called in to select will cull all of them. However, a plan can be adopted where numbers will not have to be reduced nor the overall operations of the ranch curbed.
5. The erroneous belief that good wool and good lamb production cannot be maintained in the same flock often deters owners from starting a selection program. Selections can be made to include both types of production.
6. *A breeding* program that does not provide enough ewe lambs for replacement purposes makes it impossible to show rapid progress.

What Selection Cannot Do

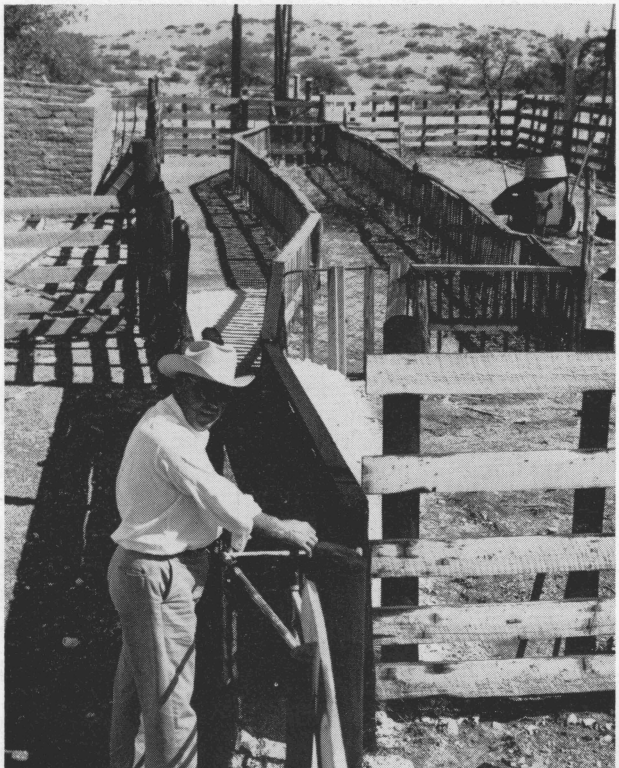
1. A selection program cannot overcome the effect of poor rams.
2. It cannot overcome the effect of poor financing or poor management.
3. It cannot improve the flock if the culls are not sold or managed according to plan.
4. It will not turn a low-producing flock into a high-producing flock in 1 or 2 years. Permanent changes are due to heredity and take time to establish.
5. It cannot overcome the effect of poor nutrition or poor physical condition due to a diseased condition or parasitism.

TYPES OF PROGRAMS

Many ranchmen say that they cannot carry on a selection program because it will run them short on number of sheep in the breeding flock. A selection program, however, can be flexible enough to be adapted to any ranch.

One plan is to mark a certain percentage of the ewes as culls. The culls are sold and replaced by carefully selected ewe lambs. Although this method probably will show the fastest results in greater production, it may not be possible for all ranchmen to follow it.

Excellent equipment for a selection program: a working chute with a cutting gate at one end and a pen to the right of the working chute where a few questionable animals may be placed.



If a ranchman feels that he cannot dispose of any ewes at the present time, he may use an alternate plan whereby the ewes are cut into several groups according to their ability to produce wool and lamb. The number of groups may be two, three or even more if desirable. The big, smooth, open-face ewes with good conformation and high-quality, long-staple fleeces make up the top group of ewes. The slightly less desirable ewes—not quite as uniform in size, conformation and fleeces—make up a second group. The smaller, more wrinkled, shorter stapled ewes are put in a third group. It is usually practical to brand these groups differently so that they can be separated easily through a cutting chute.

The bucks are then divided into groups in the same manner; and the best bucks put with the best ewes, second-best bucks with the second group of ewes and the poorest bucks with the third group of ewes. Some ranchmen prefer to put blackface bucks with the third group of ewes and market all the lambs because blackface ewes should not be retained in the breeding flock.

The largest number of replacement ewe lambs should come from the top group of ewes, with the top ewe lambs from the second group to make up the balance. No replacements should be saved from the third group of ewes.

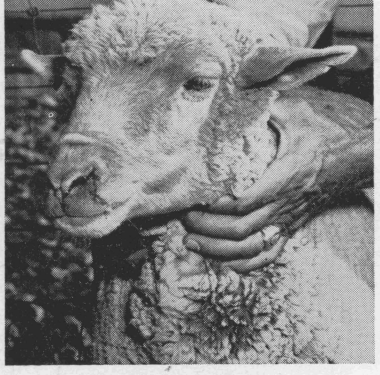
When the ranchman is able to replace some of his flock, he can dispose of the low-grade ewes. When these are gone, he can dispose of the second-grade ewes. Finally he will work them all up to the top grade. After this has been accomplished, careful selection of ewe lambs for replacement is all that is necessary.

EQUIPMENT NEEDED

Little equipment is needed to start a selection program. Adequate corrals are required to confine and crowd the sheep. A selection chute can be constructed with panels. This chute should be 3 to 4 feet wide and can be as long as desired. The longer the chute, the more sheep it will hold and the less time will be spent in refilling it.

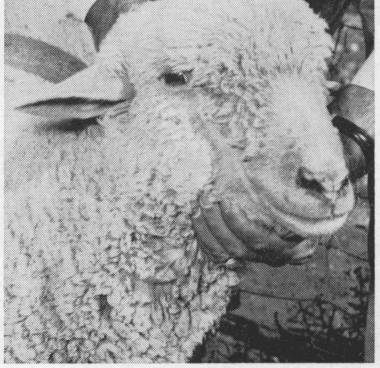
When the selection program becomes established, it is wise to build a permanent selection chute with a narrow chute and cutting gate on one end. This arrangement makes it possible to separate the sheep as soon as they have been marked. By separating the sheep immediately, the one making the selections can see both groups of sheep and determine whether he needs to change any of his selections.

Good Open Face
comes down even with the and staple length does not back toward the poll too



Too Open
When too much wool is taken off the face, it usually is accompanied by shorter wool elsewhere on the body.

Wool Blind
This ewe is so woolly faced that she will become wool blind before shearing time.



In-between Kind
This ewe probably will not become wool blind, but has more wool in the face than desirable.

Photos courtesy of Elmer Kelton, San Angelo Standard Times.

WHEN TO SELECT

The fleece is the most accurate record that can be kept. It not only tells the wool-producing ability of the sheep, but how well the animal has done through the year. The fleece is used as the basis for making selections on wool production.

Selections should not be made until 4 months or more after shearing. This gives the ewes an equal time to produce wool and makes it easy to detect differences in wool production. Because of possible age differences, ewe lambs and yearling ewes that have not been shorn previously are more difficult to judge. They may vary as much as 2 months in age, which could mean as much as ½-inch difference in staple length.

Some people prefer to select in the fall after the ewes have been shorn in the spring, while others make selections in the spring when the sheep have a 12 months' growth of wool. Good results can be obtained at either time.

POINTS TO CONSIDER IN SELECTION

Both the wool and mutton-producing qualities of the ewes must be considered. Experimental work has shown that large, smooth, open-face, finewool sheep are the most profitable to retain in the breeding flock in Texas range production. In this type of production about ⅔ of the income is derived from the sale of lambs and about ⅓ from the sale of wool. With practice, a ranchman should become quite proficient in sheep selection by considering the following points.

Mutton-producing Qualities

Large, smooth ewes with a good mutton conformation produce the type of lambs that is most popular with the buyers.

It was found at the U. S. Sheep Experiment Station at Dubois, Idaho, that ewes with open faces produced 11.3 percent more lambs and 11.1 more pounds of lamb per ewe bred than those with covered faces. Ewes with partially covered faces weaned 8.6 percent more lambs and 7.7 more pounds of lamb per ewe bred than those with covered faces. This was due mainly to the higher percentage of lambs born and weaned from the ewes with open faces. There was also an advantage of 1.5 pounds per head in weaning weight of lambs from open-face ewes over lambs from ewes with partially covered faces. The lambs from open-face ewes had a 2.9-pound weaning weight advantage over lambs from ewes with closed faces. These differences may be attributed to the detrimental effects of wool blindness in both ewes and lambs. Open-face ewes are more apt to have lambs with open faces, and ewes with covered faces are more apt to have lambs with covered faces. Periodic shearing around the eyes, which means additional expense to the ranchman, did not increase the production in the ewes with covered faces.

Select ewes with wide, deep bodies; full heartgirths; wide loins and well-developed legs of mutton. This type of ewe should have adequate size and a good constitution.

Length of leg does not indicate size. Just because a ewe is tall does not mean that she is a big ewe. Many times the tall ewe has a long, narrow body.

Wool-producing Qualities

Points to consider in selecting for fleece are quantity and quality.

QUANTITY

Quantity depends on length, density, completeness of covering and size of the sheep.

Length.—Staple length probably is the most important single factor affecting the quantity of wool that one sheep can produce. Average fleece weights were obtained on approximately 20,000 graded fleeces from 17

different ranches in the Sonora area. Fine Staple fleeces, 2½ to 3½ inches in length, had an average grease fleece weight of 8.2 pounds; Fine French Combing, 2 to 2½ inches in length, 7.2 pounds; and Fine Clothing, 1½ to 2 inches in length, 6.3 pounds. This means that with each increase of approximately 1 inch in staple length it is reasonable to expect about 1 pound of increase in grease fleece weight. Like increases occur in the clean fleece weights.

Density.—Density is the closeness with which the wool grows on a given area of body surface, which is much more difficult to determine than length is. The following methods can be used to judge density:

1. Open the fleece and note the amount of skin area exposed. The more skin area exposed, the less density the sheep may possess.
2. Note the resistance of the fleece to opening. This method is useful in judging comparatively fine fleeces which are of average length.
3. Grasp a portion of the fleece in the hand and note whether a large or small amount of wool is included in the grasp.

These methods will give a satisfactory field indication of density. Although there are several ways to measure density accurately, they are too technical and slow to use in a rapid selection method.

The following conditions may cause mistaken judgment of density when one of the rapid selection methods is used:

1. Differences in length—short wool always appears more dense than long wool of a similar density.
2. Excessive yolk may add to the bulk of the fleece and cause a false estimate of density.
3. The open tips of yearling fleeces make them appear less dense than fleeces from sheep that have been shorn previously.
4. A harsh, wiry fleece appears to be more dense than a softer type of fleece.

Completeness of Covering.—The sheep should have a uniform covering of wool over the entire body, except for wool on the face and on the legs below the knees and hocks, which is of little value and adds little to the weight of the fleece. Range sheep should have a good covering on the head down to the eyes and on the legs down to the knees and hocks.

There has been a tendency for breeders to neglect the wool on the belly. During the last several years, however, breeders have paid a great deal more attention to the covering of wool on the belly, especially breeders of registered sheep. In practical selection, it is a waste of time to look for good wool on the sheep's belly if it does not have a good fleece on its back.

Rams also should be selected carefully for completeness of covering, except on the face.

Size of the Animal.—The practical sheepman prefers a big sheep; and, other things being equal, a big sheep produces more wool than a small one. The relative efficiency of wool production has not been worked out completely. The most efficient wool producer *possibly is* a sheep of medium size.

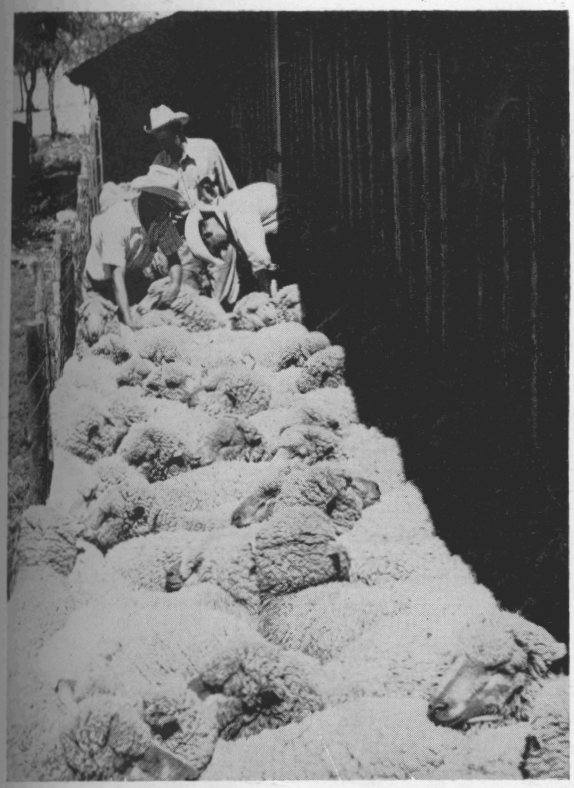
QUALITY

Quality is determined by fineness, length, soundness and purity.

Fineness.—Texas has established a reputation for the production of fine wool of excellent quality. Wool market statistics show that, over a long period of time, fine wool outsells wool of the coarser grades because it takes fine wool to make a soft worsted fabric.

Cull and keep. Left, the culled ewe is shallow-bodied, has several skin folds, short-staple fleece and has had the wool clipped from her face to prevent wool blindness. Right, the retained ewe has an open face, wide deep body, smooth skin and ½ inch more staple length of wool.

Photo courtesy of Elmer Kelton, San Angelo Standard Times.



Breeding ewes being selected on the basis of characteristics such as conformation, size and wool-producing ability.

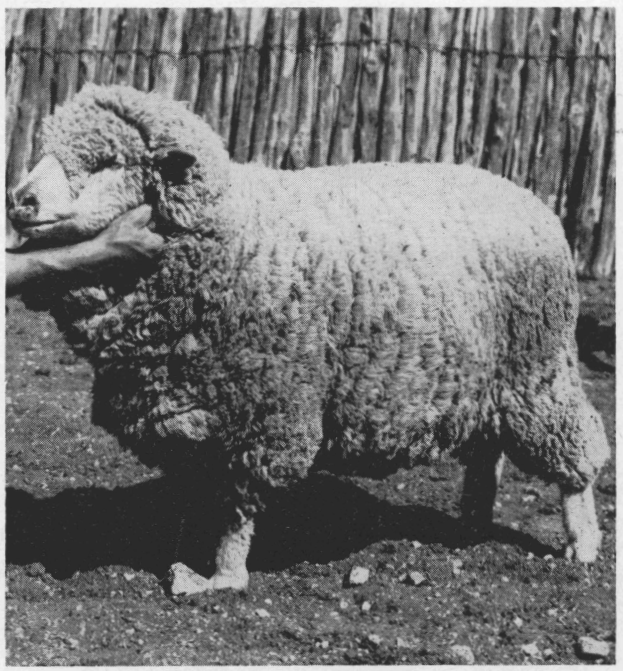
Uniformity of fineness on the individual sheep as well as in the flock should be considered by the person making selections.

Coarse hairy britches should be eliminated from the flock through selection. Hairiness has caused wool buyers to reject certain clips of wool in the last several years because it increases the amount of waste fibers in the manufacturing process. These coarse britches can be detected most easily in the fall after the sheep have been shorn in the spring, and such animals should be eliminated.

Length. — Staple length helps determine the grade. The longer the wool of a given fineness, the higher the grade, but it is possible to obtain length in excess of grade requirements, in which case the extra length merely means pounds. A 3-inch staple should be obtained for the best fine wool.

Soundness.—Whenever a sheep has fever, it causes a weak spot to appear in the fleece. When severe enough, the sheep sheds its fleece. Sheep that shed their wool or "brush off" or pull their wool out on the brush should be eliminated.

Purity.—Purity of fleece is highly important in selecting for quality. Animals with black or brown faces or black or brown spots in the fleeces should be eliminated. Wool that contains dark-colored fibers cannot be used to make white or light-colored fabrics.



An excellent type of finewool ewe. Note the open face, freedom from wrinkles, good conformation, excellent body depth, straightness of legs and completeness of wool covering.

RECORDS TO MEASURE PROGRESS

Some records should be kept to determine the progress being made. It is helpful to know the percentage of lamb crop, the weaning weights of the lambs and the average fleece weights of the ewes. Registered breeders may want to keep a more complete record or even an individual record on each ewe.

Records of individual fleece weights on the rams will help the ranchman eliminate the light shearers from his flock.

Following are some suggested forms for commercial and registered flocks:

COMMERCIAL FLOCK RECORD

DATE_____

Description	Number of head	Total pounds of wool	Average fleece weight	Average percent lamb crop weaned	Average weaning weight of lambs	Average weight of lambs sold	Remarks
Top ewes							
Middle ewes							
Bottom ewes							
Replacement yearlings							
Bucks							

INDIVIDUAL RECORD FOR RAMS

DATE_____

Number	Length of staple	Weight of fleece	Shorn body weight	Remarks

INDIVIDUAL RECORD FOR REGISTERED SHEEP

DATE_____

Number	Length of staple	Weight of fleece	Shorn body weight	Weaning weight of lambs	Remarks

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