GROWING AND MARKETING WOOL

BY W. C. COFFEY

FIG. 1.—A NINE-POUND FLEECE IN GOOD CONDITION AND PROPERLY TIED WITH THE FLESH SIDE OUT.
SUMMARY

To produce a desirable quality of wool in the condition most satisfactory to the market, observe the following:

1. Keep a flock uniform in breeding.
2. Keep a healthy, well fed flock.
3. Do not allow burrs, chaff and litter to collect in the wool.
4. Keep the wool as nearly free from dirt and dung as possible.
5. Do not brand the sheep with oil paint or pine tar.
6. Keep the flock free from external parasites.
7. Practice careful shearing, such as keeping the wool on a clean platform and avoiding second cuts and tearing the fleece.
8. Use care in tying the fleece. Remove all tag locks and turn the flesh side out.
9. Use smooth twine not more than one-eighth inch thick and of a type that will not shed its fiber into the wool.
10. Pack fleeces from ewes, lambs, wethers, and rams separately, if possible, and in no case bag tags and wool from dead sheep in with fleeces.
11. Store the wool in a dry, clean place. It is preferable to pack it in closely woven bags that do not shed fiber.
INTRODUCTION

Those familiar with the ways of growing and preparing wool for market in the countries of greatest production admit that the United States is behind in her methods. Since the wools produced in the farm flocks of the central and eastern parts of our country come in direct competition with foreign wools, carefully grown and prepared for market, better methods are imperative if satisfactory profits are to be made on the wool crop. The following discussion is submitted with the hope that the facts stated and the suggestions given will assist in placing on the market a better wool product from our farm flocks.

To sell at a good price, an offering of wool should be uniformly good, which means that it should be even in structure, length, and strength of fiber, and that it should be as nearly free as possible from foreign matter, such as dirt, chaff or litter, burrs, and tar or paint marks.

THE BREEDING OF THE FLOCK

If the wool is to be fairly uniform in structure and length, the individuals in the flock must be similar in breeding. By using pure bred rams of the same breed for a series of years, any flock can be graded up so that the type of wool will be sufficiently uniform in the particulars mentioned to satisfy the demands of the market, provided proper attention is paid to the fleeces of the rams purchased and of the ewes reserved for breeding. The ewes should be alike in fleece characteristics. In addition to other very necessary requirements aside from wool, they should carry fleeces even in quality, density and length. This is not meant in an absolute sense, for such is next to impossible. It is well known that the wool is almost never as fine on the thighs as on the shoulders, and that it is rarely as long on the underlines as it is on midside.

The prevailing blood in the farm flocks of the Middle West is of the English Down mutton breeds, such as Shropshire, Oxford and Hampshire. Any of these, under favorable conditions, produces wool which will meet with ready demand. So far as the wool product is concerned, the use of rams of different breeds is not only unnecessary but undesirable, as it lessens its uniformity.
FEEDING THE FLOCK

Unless the animal is properly fed the wool will not be strong and even in size. If the food supply is reduced to a point below the normal demands of the animal's body, the wool fiber is reduced in diameter and a weak place is the result. This greatly reduces the commercial value of the combing wools such as prevail in most sections where farm flocks are kept. In the process of combing, the fiber breaks at the weak place and the wool has to be put to some use of less value. It is therefore necessary for the owner to provide feed sufficient to keep his flock well fed throughout the year.

HEALTH OF THE FLOCK

If the animal is in poor health, the effect on the growth of the wool is similar to insufficient feed. Sheep often shed or slip their wool as a result of a feverish condition. Any severe illness extending over sufficient time to reduce the animal in flesh will almost invariably cause a weak place in the wool. In the production of good strong wool the health of the animal is just as essential as proper feeding.

FOREIGN MATERIAL IN WOOL

While lack of uniformity in breeding, improper feeding, and disease each contribute to the criticism made against the wools produced in farm flocks, by far the greatest amount of fault is found because of the foreign substances they contain. Some of these substances get into the wool while it is on the sheep, while others gain entrance thru faulty methods of shearing and packing. If there is a great deal of foreign material in wool, it is impossible to remove all of it thru the process of scouring. If it is left in, the result is a fabric with noticeable defects; if it is removed, it is by treating with a weak solution of sulfuric acid and heating (a process known as carbonizing), which may weaken the wool fibers. This not only lowers the value of the wool for manufacturing purposes, but also adds to its cost to the manufacturer because he has to spend upon it the extra labor of carbonizing.

Farm flocks as a rule are small, and in many cases they are kept to eat down the weeds that grow in pastures, wood lots, and truck patches. After the corn is harvested, they are usually given a run in the stalks. In all of these places burrs are likely, unless the farmer uses care in keeping them down. The cockle burr, so
common in nearly every locality, is very injurious, because it becomes so completely entangled in the wool that in its removal fibers are broken and small woody particles from the burr are left in the fleece. Not infrequently the statement is made that sheep are kept to gather cockle burrs. Whether the statement is made in seriousness or in jest, the point in question is that the practice would be a poor one. Not all the burrs are gathered by the sheep; a sufficient number for the next year's crop are left on the infested ground, and not all the burrs that cling to the wool get such a hold that they will remain in it permanently. They are dropped at various places over the farm, and instead of an effective gathering there is a scattering.

Carelessness in feeding causes a great deal of foreign material to be deposited in wool. Racks for roughages such as hay, fodder and straw, should be constructed so that chaff cannot fall out and lodge on the shoulders and necks of the sheep. Barns and lots should be arranged so that it is unnecessary to pass amongst the sheep in carrying loose straw to the racks. It is well to remember that the equipment necessary to keep chaff and litter out of the wool, as suggested above, also results in a saving of feed. Usually that which sifts out and is lost is the most palatable and nutritious part of the feed; hence there is good reason for keeping it out of the fleece aside from the damage it does to the wool.

Care should be taken to keep dirt and dung out of the wool; neither of these damages wool as much as burrs, chaff and litter, but they do some damage, and they most certainly make it less attractive to the buyer and add to the shrinkage in the process of scouring. Sheep should not be forced to lie in mud, nor should
they be allowed to lie in dusty places. Those who run their sheep on plowed lands have difficulty in providing clean resting places for them and we cannot expect the wool to be as clean as it would be were their sheep kept on pastures. Tags of dung in wool are very objectionable to buyers. They are very heavy, and since they usually contain much moisture they often cause the wool to mold. There is no excuse for wrapping dung tags in wool if proper care is taken at shearing time, but it is better to handle sheep so that comparatively little dung will cling to the wool. All the sheep in the flock should be docked, and, late in the autumn, the wool should be sheared off around the dock. Dung clings to the wool only when the feces are soft or when the animal is scouring. When the animal scours it should have a change of feed and possibly medical attention so that a case of chronic scours will not develop. If these suggestions are put into practice, there are not likely to be many dung tags at shearing time.

PAINT AND TAR MARKS

Oil paint and tar marks are very objectionable in wool, but their use is not common in farm flocks. They are objectionable because they cannot be removed in scouring. The manufacturer is obliged to employ labor to cut them out before the wool is scoured. This reduces the length of the wool to such extent that its value is impaired. The paint and tar clippings are of very low value and hence the objection to them is thrice emphasized. In case it is desirable to wool-brand, there are marking inks or fluids on the market which do no damage to the wool because they come out in the process of scouring.

INFLUENCE OF EXTERNAL PARASITES

Keeping the flock free from external parasites does much toward bettering the wool product. They irritate the skin and cause the sheep so much discomfort that they do a great deal of rubbing against fences, barns and racks in an effort to obtain relief. This tangles and breaks the wool and in many cases pulls it out. The fleece is left in a broken condition, which is objected to by the buyer, and it is not possible to tie it up in attractive condition. If the flock is badly infested with ticks, the good appearance of the wool is lessened by the eggs and dead bodies of the parasites, and their presence would lead the buyer to suspicion the condition of the wool.

The most common external parasites in farm flocks are ticks and lice. These can be kept down to a minimum by regular and
careful dipping. As a rule it does not pay the owner of a farm flock to make the small quantity of dip necessary for his sheep, as the proprietary dips advertised in leading live stock and agricultural journals can be had at less expense. Most manufacturers and agents of proprietary dips also handle the equipment necessary for dipping. In case they do not, they are prepared to refer to supply houses who keep such equipment in stock. To be most effective, dipping should be practiced twice a year. The whole flock should be dipped a few weeks after shearing, and again in the autumn before the weather is cold enough to make the wet sheep suffer.

On rare occasions farm flocks may be infested with scabies. The eradication of this parasite requires such care and observance of details that owners would do well to write to the Bureau of Animal Industry, Washington, D. C., for instructions. The Bureau has made scabies, or scab, a thorof study both in the laboratory and in the field amongst the large range flocks of the West, and hence is in position to give definite instructions for its eradication.

**TIME OF SHEARING**

To a limited extent, the condition of the wool depends on the time shearing is done. The normal time for shearing farm flocks is from the middle of April to the middle of May, after the cold weather is over and there have been a number of days too warm for the comfort of unshorn sheep. As a rule the wool would be in better condition if shearing were done early, say about March first. This is true particularly of wool from breeding ewes. Where there are barns and equipment for keeping them comfortable, it perhaps pays to shear them before they lamb. Often a feverish condition immediately after lambing causes them to slip their wool, with the result that the fleece is broken and the amount of wool secured is less than if the shearing were done before lambing. Then, too, the growth of wool after lambing is likely to be weak, because much of the ewe's energy is expended toward the production of milk. Another argument for early shearing is that there are likely to be fewer dung tags. When sheep are turned on the fresh young grass in the spring, the dung becomes soft and inclined to cling to the wool. A frequent objection to shearing early is that the weight of the fleece is considerably lighter than it would be later on, because there has not been enough warm weather to cause the yolk (composed of oil and perspiration) to rise in large quantity. The foregoing statement is true, and since small lots of wool, such as are usually offered from farm flocks, are not purchased on the scoured basis—i. e., the percent of actual
wool in the fleece shorn from the sheep—there is legitimate reason for not shearing until warm weather. Even if the wools in question were purchased on the scoured basis, another argument for late shearing would be consideration for the animal’s health. This is an important matter in those sections where the spring season often is exceedingly variable and the shelter is not adequate for comfortably housing the flock. Because of sudden changes from warm to cold windy weather, shorn sheep are likely to contract severe colds, which may result in death. This is particularly true of sheep shorn by machine, as this process takes the wool off very close to the body.

Shearing

Up to this point we have considered what the grower can do toward producing wool of desirable quality and condition. Granting that he succeeds in doing this, it is necessary for him to observe care in shearing and in packing for market, if his product is to find favor with the manufacturer.

The first requisite in careful shearing is to provide a clean place to do the work. A platform made of surfaced lumber is best, and it should be of sufficient size to insure that none of the wool will be crowded off by nervous, unruly sheep. For the amateur this platform will be none too large if ten feet square.

The second requisite is to cut the wool off smoothly close to the body. The power machine will cut closer than the hand shears, but satisfactory work may be done with the latter if the operator is careful and possesses some skill. It is the tendency of the unskilled shearer, whether using the machine or hand shears, to fail to cut close to the sheep’s body. For example, the shearer may start to cut close to the body, but in advancing the shears he cannot follow the shape of the animal, and hence some of the wool is cut from a half to an inch away from the skin. He can, and usually does, back up and cut close where he failed in his first attempt. This makes what is known as second cuts. Because they are so short they are of low value for manufacturing purposes. It is also obvious that the evil of making second cuts makes the fibers in the main body of the fleece shorter and uneven in length, and therefore less desirable.

The third requisite in good shearing is to get the fleece off the sheep without getting it torn apart. There is a knack in holding a sheep so it will not kick and struggle violently; if the shearer is fortunate enough to possess this knack, he is in fair way to have the fleece intact when the operation of shearing is finished. It is not our purpose here to describe shearing in detail, but perhaps it should be said that our most skillful shearsers set the sheep on its
FIG. 3.—IN THE FLEECE.

FIG. 4.—THE SAME SHEEP AS IN FIG. 3 OUT OF THE FLEECE, SHOWING A GOOD JOB OF SHEARING.
rump while shearing it. Its body is tilted back towards the knees of the operator so that its hind legs cannot get sufficient contact with the floor to make effective resistance. It is the adjustment of this position that amounts to the knack in holding.

Sheep should not be shorn when the wool is damp or wet, for when packed in this condition it will mold and deteriorate to such an extent that the fibers are weakened.

TYING THE FLEECE

After shearing, the next important step is tying the fleece. Several things must be done to make this job a good one. First, all tag locks must be removed whether they be of dung or grease and dirt. Second, the fleece should be carefully rolled up by hand (not in a wool box), with no ends and stray locks protruding, and with the flesh side out. Third, the fleece should be tied with a hard, glazed twine, not larger than one-eighth inch in diameter. In tying

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**FIG. 5.—A. 90 FEET OF JUTE TWINE WEIGHING ONE-HALF POUND, THE AMOUNT TAKEN FROM ONE FARM FLEECE BY A PROMINENT WOOL HOUSE. B. 7½ FEET PAPER TWINE, ALL THAT IS NECESSARY TO TIE THE FLEECE ILLUSTRATED ON FIRST PAGE.**
the ends of the twine especial care should be taken to make a firm, hard knot that will not slip.

The first thing mentioned with respect to tying involves packing nothing but merchantable wool in fleeces. Weighty materials, such as bricks, stones, and sheep heads, should not be rolled up in fleeces, and fortunately such instances are relatively few. But tag locks are so common that their presence in fleeces from farm flocks is the rule rather than the exception. The total effect of such a practice is bad. It puts our wools in bad standing with wool houses and manufacturers. Long continued, it has led to the only logical result; namely, discrimination in price against our wools.

Careful rolling, with the flesh side of the fleece out, and no ends or stray locks showing, adds greatly to the appearance of the fleece. It also prevents mixing the wool in different fleeces; and, by the way, each fleece should be tied to itself. In wool warehouses it is a pretty sight to see the heaps of graded wool faced with a tier of carefully rolled and tied fleeces.

**TYING TWINE**

The use of wrong kinds of tying twine has caused the manufacturer more trouble than any other one thing, with the wools marketed from the farms of the central and eastern United States. A hard, glazed twine should be used in order to avoid getting any of its fiber mixed with the wool. During the last three or four years paper wool twine has been introduced which is entirely satisfactory to the manufacturer. Rough, loosely woven twine made of vegetable fiber is not desirable because some of the fiber gets into the wool. It is impossible to remove it. It will not take the dyes used in coloring wool and it is detrimental to the strength and finish of the cloth. The only way to get rid of it is to pick it out of the finished cloth, which is an expensive process. Sisal twine is the most objectionable of all employed for tying wool. The mills have objected to it so strenuously that its use is being largely discontinued. In no event should it be used; better not tie at all than use it. There have been placed on the market jute products, called wool twine, which are not at all satisfactory. They are so loose and rough that many of the fibers cling to the wool and cause defects in the goods. Undoubtedly the wool trade the world over will institute a war against this type of twine. These so-called wool twines are also unnecessarily heavy. The best wool buyers object to excessive size and length of string. A well known wool house in the middle west informed the writer that they had removed more than one pound of twine from a single
fleece. The use of so much cheap stuff amounts to unfair packing. It is not necessary to wrap the string more than three times around the fleece—twice is usually sufficient—and the size of the string should be no greater than needed to give it the strength to stand the strain of drawing it in tightly on the wool for the purpose of tying. As stated above, it should not be more than one-eighth inch in diameter. "India" three-ply size No. 4½ is a type suitable for tying wool; so are the paper wool twines. Some of the latter, however, are stiff, and therefore difficult to tie in a firm, hard knot that will not slip and release the wool. In selecting from them care should be taken to secure a kind that is soft and pliable.

PACKING AND STORING

When packing, the fleeces of ewes, lambs, rams, and wethers should be packed separately. In small flocks it is hardly advisable to pack them in separate bags, but they can be separated in the bag by sheets of stiff, strong paper so that they can be easily sorted at
the market. A bag containing a certain kind or kinds of wool should be marked so that its contents are known. Tags and wool from dead sheep should be packed separately. If there are black or grey fleeces, either they should be packed separately or their location should be designated. For example, a bag containing forty ewe fleeces, two of which are black, could be marked as follows: 38 white—2 black.

If the wool is not sold immediately after shearing, it should be stored in a clean, dry place. It should not be left on the bare ground even tho it is placed in bags. It is the better method to store and market wool in bags, as it is the more likely to be kept clean. The bags should be closely woven, so that they will effectively keep out dust and dirt. They should also be of a type that will not shed particles of fiber into the wool. The loosely woven jute bags commonly used are satisfactory in neither particular. In Australia the bags or sheets are lined with paper to insure keeping the wool clean. In England and Scotland the bagging or sheeting is made from selected fiber of the best long hemp, thoroly scoured after weaving and carefully examined before it is cut up into sheets. We must exhibit the same sort of care if we are to keep pace with them in the quality of the product we offer for sale. If the clip is contracted for before it is shorn and immediate delivery is planned, it is not necessary to bag the wool unless at the request of the purchaser. If it is packed in a clean wagon box and a canvas is thrown over the top, it can be delivered in desirable condition.

The writer is fully aware that some of the preceding suggestions with respect to growing and marketing will appeal to the sheep owner as hardly worth while. Nearly all small clips are sold to local dealers who oftentimes do not discriminate sharply in favor of wool of desirable quality and in good condition. The man who offers the good product is discouraged because he secures little if any more than his careless neighbor. We must admit the seemingly hopeless condition of his case, but it is not entirely hopeless. When the majority of producers in a community adopt and practice better methods, the chances are that something distinctly in their favor will happen. Some one will find them and reward them for the extra care they have taken. If not that, wide-awake, live producers will find the market that is willing to pay for careful growing and packing.

Early in this discussion it was stated that the type of wool produced by farm flocks in the central and eastern states comes in direct competition with foreign wools that are carefully grown and
FIG. 7.—SISAL FIBERS PICKED FROM ONE DAY’S PRODUCT OF A WORSTED MILL. THERE ARE ABOUT 11,000 FIBERS IN THIS BUNCH. (BY COURTESY MR. SAMUEL S. DALE, EDITOR, TEXTILE WORLD’S RECORD.)
prepared for market. These foreign wools are so much better prepared for the needs of the manufacturer that we cannot blame him for preferring them. It is said that worsted manufacturers cannot use tags. If included in fleeces they must either re-sell them or stop buying fleeces, and many prefer the latter procedure. After buyers have turned in another direction for their supplies, it is not easy to draw them back, and we cannot hope to have them look on our wools with favor unless we do everything possible to make of them what the manufacturer wants. Let us remember that any one manufacturer cannot use everything in a “tumble jumble” offering of wool, and that he therefore dislikes it to the point of refusing to bid up for it.

In these days we, as producers of wool, are absolutely dependent on the market for the disposal of our product. The day of homespun is gone. The world supply of wool is limited to such an extent that we may be confident of receiving a profitable return on our wool crop if we only do our share in meeting market requirements.
Fig. 8.—A Sisal Fiber in the Warp of Worsted Cloth. (By Courtesy Mr. Samuel S. Dale, Editor Textile World's Record.)