PRODUCTION AND MARKETING OF WOOL

Canada's peacetime production of wool has not varied much in 70 years and at no time has it been self-sufficient. With wool production at approximately 19,000,000 lb. from 2,824,500 sheep, Canada produces only about one-quarter of her normal wool requirements.

In pre-war years Canada exported from three to seven million pounds of wool and imported about 60 million pounds annually. Owing to the war, Canada's annual wool requirements have grown from approximately 70 million pounds to 125 million pounds; thus she is dependent upon outside sources for about 100 million pounds. Should importations be drastically restricted or entirely cut off by enemy action, Canada would be in a most difficult position with regard to wool, and for this reason the call is issued for an increase in domestic production of wool from ranch and farm throughout the Dominion. An additional clip of wool in 1943 of seven million pounds is requested and every hope is had that this amount will be reached if not surpassed. Success in production of wool, in war as in peace, depends to a large degree upon the quality of the product, and every sheep raiser should strive to produce and market wool of outstanding quality. The marketing of *REJECT WOOLS* can never be a profitable undertaking.

Factors Contributing to More High Quality Wool Production

Physical Requirements of Sheep.—Only ewes of the most serviceable type should be selected. Aged, unhealthy, broken-down, toothless ewes of nondescript breeding may be considered largely as a liability rather than an asset, and should be replaced with young, healthy, sound-mouthed ewes of improved breeding. Care should be exercised in selecting ewes free from kempy, ashen, grey hairs and black fibres in the fleece. Black wool should also be avoided. It is important that ewes for greater wool production should possess a complete body covering of wool of uniform length and quality. Maximum returns from the wool yield of the flock cannot be obtained from light wool producing sheep. The sires should be selected with a view to breeding into the progeny still greater wool yields from season to season. The careful selection of ewes and rams for reproduction of stock with still greater yields of wool, is a sure and sane way of increasing the earning power of the flocks. A sheep with an average fleece weight of seven pounds, valued at 28 cents per pound, returns $1.96. If, through the use of better wooled sires together with good management, the average fleece weight is increased by one pound, a gain of 28 cents per fleece is made. This represents an increase, based on the original fleece weight, of 4 cents a pound.

General Care and Management of the Flock.—Proper flock management has a direct bearing on the greater yield and quality of wool produced. During the pasture season burdocks and plants of a similar nature should be removed from the sheep pastures. This will in no small measure help to raise the wool from a reject class, to that of a first-class commercial grade and represent a difference of not less than nine cents per pound, based upon Wool Board values in 1942. In Western Canada where spear grass has been a real menace in some sections, this plant has caused the wool grower immeasurable loss. Shearing at the proper time would assist in eliminating this menace.

[illegible]e Winter Feeding of Roughage.—The correct method of feeding roughage in [illegible] is of great importance in the production of high quality wool, and the greatest

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care should be taken to provide feeding racks of suitable style. A rack so constructed that the small portions of feeding material such as chaff and leaves of legumes may not lodge in the fleece of the sheep as it feeds from the rack is most desirable. Different types of racks have been recommended and are in use by sheep raisers. Some are of the V-type with slats close together, while others are of the perpendicular style with slats far enough apart to permit the head of the sheep to enter the rack. The fodder or roughage is eaten from the top. Specifications are obtainable from any Agricultural College or Experimental Farm. While the feed is being carried to, and is being placed in the racks, the flock should be either removed from the pen or protected in some way from the possibility of litter falling into the fleece. Sheep should never be allowed to feed from the side of a hay or straw stack as such a method is ruinous to the production of high quality wool. If proper feeding racks cannot be furnished, roughage may be fed on the ground, although this method is somewhat wasteful. If this method is used, all roughage should be spread out before the sheep are permitted access to it.

Proper Feeds Essential.—The wool grower should keep in mind that proper nutrition plays a very important part in wool production. Half-starved sheep cannot produce wool in quantity or of high quality. Wool increases are the result of a combination of factors of which plenty of good feed is most important. Where proper food is lacking in the ration, a short, weak fibre results and the value is reduced by at least two cents per pound.

Flock Identification.—Allied with care and management for better wool production, may be included the method of flock identification. Insoluble substances such as paint, tar, linseed oil and old crankcase oil in branding range ewes or for numbering sheep for sales, is very objectionable from the wool manufacturers' point of view and should be discontinued. Branding or marking sheep with any insoluble substance is particularly injurious, since the brand or mark is usually stamped on the most valuable part of the fleece. It is difficult and costly to remove those portions of the fleece so marked, either when grading or sorting, and if overlooked the substance used will not dissolve in the scouring bath and goes forward into the manufacturing process. The finished material carries the stain of the branding liquid and cannot be cleaned by solvents used in any known cleaning process. Branding fluids which are soluble and do not stain have been prepared and are sold commercially. Only such branding fluids should be used. Other means of identification which might be substituted for insoluble substances are, the use of metal ear tags, or the notching of the ear, such marks indicating numbers according to their position in the ear.

The Health of the Flock.—Unhealthy sheep are usually poor producers of both quantity and quality in wool. When for any reason a sheep suffers a set-back or illness, it has been stated that such sickness is shown in weakness of the wool fibre which reduces the tensile strength and renders such wool unsuitable for certain types of manufacture. This of course reduces the actual value of the fleece. In some instances where the sheep has endured high body temperature, the entire fleece has been cast. It is imperative therefore that an effort be made to keep the flock in a healthy state.

***Internal Parasites.**—Internal parasites are a great hindrance to maximum wool yield, retarding development of the body, creating physical weakness, and reducing the production of strong, useful, wool fibre.

***External Parasites.**—External parasites result in an emaciated condition of body and great loss of wool through the effort of the sheep to relieve itself of constant irritation which such parasites produce, by rubbing against stationary objects or by actualling tearing the wool from its body.

Factors Contributing to the Successful Marketing of Wool

As has been pointed out in the section of this pamphlet dealing with wool production, the feeding and management of the flock throughout the year is of great importance in producing wool of high market value. The proper procedure to be followed in shearing the wool and in rolling, tying and packing the fleeces is outlined below. An explanation of the present wool marketing system is also given together with a few comments on the grades and classes of Canadian wool.

Shearing.—Shearing should be done as soon as the weather permits. It is most important that it be done on a clean surface free from litter, chaff, straw and dust. Sheep should not be shorn when the fleece is wet or damp. Every effort should be made to keep the fleece in one piece and to avoid making second cuts in the wool staple.

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* The internal and external parasites of sheep are dealt with fully in Special Pamphlet No. 67 in the Wartime Production Series, entitled, Prevention of Disease in Sheep. (Including Control of Internal and External Parasites.)

Rolling and Tying the Fleece.—After shearing, the fleece should be spread on a clean surface, flesh side down. If there is any dark coloured face or shank wool it should be put to one side and packed separately in a small bag when shearing is completed. All manure locks or tags, as they are called, should be detached from the fleece by pulling but not cutting, and also should be packed separately. The fleece should then be folded in, from both sides, until it lies in a strip 15 or 18 inches wide, and rolled like a pelt. The ragged ends around the neck should be folded back part way and then the fleece should be rolled up from the breech end so that the bright or skin side of the shoulder wool shows on the outside. The fleece should then be tied with paper twine. *Binder twine or other sisal string of like nature should never be used for tying fleeces. A penalty of one cent per pound is made under present wool marketing regulations for wool tied with twine of this nature.* Paper twine may be secured from registered wool warehouses and from many of their agents.

Packing and Storing Wool.—Wool should be packed in clean sacks or bags after shearing and should not be left lying exposed in a corner of the barn, shed or granary, where it usually gets mixed with objectionable foreign matter such as grain, chaff, straw, feathers, fowl droppings, etc. Wool should be marketed as soon as possible after shearing, especially under present war conditions when every pound of wool is required. If the sacked wool must be kept on the farm for a few weeks before being shipped to a wool warehouse it should be stored in a fairly dry place and in no case should the sacks be piled on the bare ground as wool absorbs moisture like a sponge.

Wartime Marketing of Canadian Wool

In 1940, regulations were enacted by the Dominion Government providing that all Canadian grown fleece wool must be marketed on a graded basis. In March, 1942, the Canadian Wool Board Ltd. was set up under the Wartime Prices and Trade Board and was authorized to purchase all Canadian grown wool at prices to be approved by the Wartime Prices and Trade Board according to grade and condition. Except for limited quantities required for home use, all Canadian grown wool must therefore be graded and turned over to the Canadian Wool Board for the duration of the war and one year thereafter. The grading is done in warehouses authorized by the Dominion Department of Agriculture and under the supervision of inspectors appointed by that Department. Growers may consign their wool directly to these warehouses or through the agency of collectors licensed by the Canadian Wool Board who operate for these warehouses. The names and location of these warehouses may be secured from the Marketing Service of the Department of Agriculture, Ottawa.

Wool Grades

The standard Canadian staple grades of wool are as follows: Fine Staple, Fine Medium Staple, Medium Staple, Low Medium Staple, Low Staple, and Coarse. The first three grades have a corresponding "clothing" grade for wool which is short in the staple and of less value than the longer "staple" grades. The grades of wool produced by the more popular breeds of sheep in Canada should be as follows:—

Breed	*Canadian Grade*	*Corresponding American Grade.*
Rambouillet	Fine Staple and Fine Medium Staple	Fine and ½ Blood Staple
Southdown	Fine Medium and Medium Staple and Clothing	½ and ⅜ Blood Staple and Clothing
Shropshire	Medium Staple	⅜ Blood Staple
Hampshire, Suffolk, Dorset Horn	Medium and Low Medium Staple	⅜ and ¼ Blood Staple
Oxford	Low Medium Staple	¼ Blood Staple
Cheviot	Low Medium Staple	¼ Blood Staple
Leicester	Low Staple	Low ¼ Blood Staple
Lincoln	Coarse	Braid
Cotswold	Coarse	Braid

Grade sheep sired by a purebred ram should produce wool similar to that of the sire although variation in some of the fleeces may be expected.

Wartime Grades.—As a wartime measure a large percentage of the wool from farm flocks in Eastern Canada is being graded into two main grades only, namely "Military Style" and "Felting Style". The Military Style wool includes the medium and low medium grades and also the higher edge of the Low Staple grade. It is suited for manufacture of military clothing and blankets. The Felting Style wool comprises long strong bright wool of Low Staple and Coarse grades derived largely from the Leicester, Lincoln and Cotswold breeds and their crosses.

Wool Classes.—Canadian wool is also classified into Eastern Domestic, Western Domestic and Western Range. The Domestic wool is produced from farm flocks. Range wool comes from the large bands of sheep raised on the ranches of Western Canada. Western Domestic wool is further divided into three sub-classes—Bright, Semi-Bright and Dark, while Range wool may be either Choice or Average. These latter sub-classes are necessary because there is a large variation in the amount of sand and grease in western wool.

Defective Grades.—Wool which is impaired in value for manufacturing purposes is classified into defective or "reject" grades. *These defective wools are from 30 per cent to 60 per cent lower in value than the clean standard grades and their use is limited.* Some of the more common of these grades include the following:—

Chaffy and Burry.—Wool containing chaff, straw, seeds and burrs of various kinds must undergo expensive processing to render it suitable for manufacture and in some cases the treatment undergone impairs the strength and quality of the fibre. This wool is worth from six to ten cents less per pound than the clean grades under the wartime schedule of prices.

Black and Grey.—Black and brown fleeces can be used only for dark coloured goods and are discounted somewhat in value on account of this limitation. White fleeces with dark fibres in them are objectionable because the dark wool cannot be separated in the manufacturing process. The utmost care should therefore be used to keep black wool separate from white wool when fleeces are being rolled and packed.

Cotted Wool.—A fleece in which the wool is matted together when shorn is called a cott. A cotted fleece is termed "hard" or "soft" according to the degree of matting which has taken place. The hard cotts are found mostly in the coarser grades of wool. Cotted fleeces must be specially processed to separate the fibres and in the operation many fibres are broken thus making them unsuitable for high quality woollen goods. This fact together with the expense of processing it lowers the value of the greasy wool about five cents per pound at present values.

Damp and Discoloured Wool.—Wool which is packed while damp or which later becomes damp through storage in an unsuitable place or from being left on the bare ground soon becomes discoloured and musty. The strength of the wool fibre is weakened. This reduces the value of the wool from four to seven cents per pound or even more, if the fibre is badly damaged.

Tags.—These are the manure or mud covered locks which are frequently found adhering to the breech end of a fleece. Tags should never be rolled up inside a fleece as the surrounding wool becomes discoloured and damp, and considerable labour is required to remove them at time of grading. Hard, matted chunks weighing 1 or 2 pounds often have to be removed from fleeces at time of grading. They should be separated at time of shearing and packed separately. If heavy and wet they should be discarded entirely.

Dead Wool.—Wool pulled from dead sheep is graded separately as it frequently loses its elasticity and often has parts of the skin adhering to the ends of the fibres. Wool should be removed from dead sheep as soon as possible after death to prevent weathering and discoloration.

Paint Locks.—Insoluble substances such as paint, tar, linseed oil and old crankcase oil should not be used for branding or numbering sheep. It is very difficult to detect and remove all traces of these materials from the wool and as a result much valuable cloth is frequently spoiled. Only soluble branding fluids should be used for marking sheep.

Mothy Wool.—Wool which is held on the farm from one season to another is frequently badly infested with moths, with the result that the owner suffers considerable loss. The best policy is to market wool soon after it is shorn, and it should certainly not be held on any farm premises longer than 12 months.

Kempy.—Kemp is an opaque and structureless fibre present in badly bred wools which will not absorb dye and consequently appears prominent in the finished fabric.

General.—All these "Defective Wools" can be eliminated with proper care and selection and one of the best means to secure higher net returns for any individual clip involves close study and attention to detail at the "production end". There is no excuse for inferior wool.

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Special Pamphlet 17—Care of the Fleece.
Special Pamphlet 18—Canadian Fleece Wool.
Special Pamphlet 65—Canada Urgently Needs More Wool.

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