

Farming will never be a success unless the farmer
had more voice in the disposal of
his produce—P. Morrel.

THE JOURNAL
OF
**The Madras Agricultural Students'
Union.**

<https://doi.org/10.29321/MAJ.10.A01375>

Vol. XVI]

JUNE 1928.

[No. 6.

Sheep Breeding as a Side Industry in Southern India. †

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Sheep breeding in Southern India especially in the Madras Presidency is in a neglected state. Some people took up the work some years back and conducted experiments for sometime, they gave it up owing to some reason or other. The result was that no improvement has taken place. An idea of the present method of sheep breeding in several tracts will be of some use to realise the main causes of deterioration in sheep. Sheep breeding round about Coimbatore, Salem and Bellary is mainly done by shepherds who live by their flocks. They move with their flocks from place to place all the year round searching for good pastures and also for ryots' lands for penning them. The shepherds care very little for the season or for the health of the animals. They do not give sheep any kind of concentrates or fodder, green or dry, beyond what the animals pick up on pasture grounds. What happens in summer is these animals live on starvation diet. During the monsoons flocks of sheep suffer and the sharp winds being inimical to their health they die in numbers every year.

* Paper read at the M. A. S. U. Conference in July

The rams are always allowed to roam about with the flock and lambing continues all the year round. The ewes soon after they lamb, are generally milked and the milk is used for human consumption, leaving the young ones to suckle empty udders every day. Thus the growing lambs become very weak and succumb to disease and casualties among lambs are generally 70-80% and even the remaining ones become very sickly and inactive.

Clipping is generally done twice, once just before winter to make cumbles for the shepherds and the other sometime before the monsoons.

There are few professional shepherds on the Nilgiris and in Mysore and sheep owners are mostly ryots and landowners. Each man keeps about 50 to 80 sheep in the flock. In Mysore during the inclement weather and on the Nilgiris throughout the year owners house them.

On the Hills, sheep are housed in closed bin—like sheds with no ventilation whatever but with litter of dry leaves. This is done to collect urine and dung. Here sheep are reared mainly for manure; bedding is removed once in 2 weeks. What happens in the meantime is that the whole thing forms a mire and the leaves decompose emitting a very bad smell. Sheep are shoved in by force at about 5'o clock in the evening and they are let out at about 10 A. M. the next day. All these sheds are overcrowded and about 1 to 2 feet depth of dung and leaves mixed with urine is found inside. When sheep come out of these, they are almost wet even in summer and are found gasping for breath. Clods of moist dung would be seen hanging all over their bodies and each animal will carry about 5 to 10 pounds of extra weight with it according to the size of the animal.

Further, washing, clipping and dipping are not at all practised and the sheepowners do not gain anything in the shape of wool. They very often complain about the very high mortality among their sheep and lambs and it is only natural so long as they carry on their present practice of rearing.

Sheep are one of the principal sources of agricultural wealth and furnish both commercial and manufactured products such as, mutton, wool, bones, skins etc. Their dung and urine are very much appreciated for the improvement of the soil. The beneficial effects of sheep penning on a particular soil are generally felt for more than one year. In foreign countries ewes' milk is generally used for manufacturing cheese.

The climate and rainfall of Southern India except of the West Coast and Nilgiris are suitable for sheep breeding.

There were several breeds of sheep in Southern India many years back, but some of these have disappeared due to very rapid deterioration, and a few still found are Nellore sheep, Madras sheep, Bellary, Mysore and Coimbatore breeds of sheep.

The two breeds, Nellore's and Madras's are bred for the carcase only and are not fit for the dual purpose of mutton and wool. The other breeds i. e., Bellary, Coimbatore and Mysore are woolly breeds and give a fair quantity of mutton too. These can be improved with care and due selection and proper attention to feeding and housing. Short experience with the Bellary sheep on the Central Cattle Farm is promising. The Live Stock section took over this work only two years ago and within this short period it was possible to produce valuable ewe hogs and ram lambs out of the original lot and much more may be expected of them in future.

Recent trials with Merino Bikanir cross-bred rams and ewes from Hissar Farm have been disappointing for crossing on local sheep.

The difficulties of crossing local ewes by Merino rams at present are many. And even if tried it is very doubtful whether we can get a satisfactory result under the existing conditions.

The colour of the breed will have to be considered to some extent. White wool is found more attractive than black or mixture and it fetches more value than any other. So if a ryot should try to possess a flock of sheep with white wool he should never allow any black ram to mingle with his flock. It is always better to keep only whites or black faced whites which may also serve the purpose. To keep a pure white flock is very difficult, for black is always a dominant character over the white. Bellary and Coimbatore are black-faced-whites and Mysore is pure white. Even among these we find lots of variations.

Feed :—The sheep require fodder and concentrates. The only question is when to feed fodder and concentrates and how much. We all know that sheep can bite close to the ground and for this reason they can thrive on scanty pastures. Hence, these can be grazed on field bunds and on scanty pastures left by cattle. They can also be grazed on live fences and hedges, for they eat almost all sorts of leaves. The main thing that a shepherd or a

ryot has to see is that his flock returns to the shed with well filled stomachs. This is easy just after the monsoon, when fresh grass is up. But this time eating too much fresh grass may bring on diarrhoea. A dose of $\frac{1}{4}$ oz. of salt and a quarter pound of rice bran will easily check this tendency. This will harden the droppings and the complaint may not last many days. Shifting sheep from one pasture to another at least once in two weeks is also desirable.

The difficulty of feeding them arises only in summer, when they have to be fed on leaves and also concentrates if possible. Sheep eat almost all sorts of leaves such as wild fig leaves, jack tree leaves, banian leaves, korukapalli leaves and so on. They also eat the fallen fruits and pods of the (avenue) trees such as korukapali pods, fig fruits, babul pods and so on. And some of these are waste products of the farm. Agathi leaves also were found quite fit. Some of these leaves and fruits were found to have as good an effect as concentrates.

Fodder cholam, fodder maize, grasses, lucerne and silage chopped can also be given. Silage did immense good on the Central Cattle Farm during the last summer (1927) when all the pastures had failed. Sheep were found a little bit shy in the beginning, but gradually they ate the grass and cholam silage with eagerness and they were mainly living on this for two months and were quite healthy. Even the lambed ewes were quite all right with the sweet silage made in the farm this year.

Concentrates need not be given throughout the year. The proper time to feed sheep on concentrates is just a month before and also at the time of mating. This will not only improve their condition but will also induce them to come to heat sooner. The proper quantity to feed is about $\frac{1}{4}$ pound cake, $\frac{1}{4}$ pound rice bran and $\frac{1}{4}$ oz. salt per head per day. This must be continued for two months. Salt is essential and must be given now and then throughout the year. This can be given mixed with some food or rock salt may be left in the stalls or pens for them to lick whenever they like, failing this they will eat earth and diarrhoea or dysentery will set in and may do havoc. Feeding concentrates to the ewes before mating has another important effect and i. e., the percentage of twins born in lambing will be more. Generally woolly sheep will drop only one lamb, but it has been experienced that ewes fed with concentrates just before and at the time of mating gave more number of twins than

those without it. In this way also the owner will not be a loser, by feeding his flock with concentrates. Lambed ewes should get no rice bran and cake at least for a few weeks after lambing. For, the percentage of deaths among lambs will be more, due to the very rich milk the dams give.

For disposal, the owner can also feed with concentrates certain selected undesirable animals. It is advantageous to sell sheep after fattening, rather than selling them in their poor condition. This he will have to do once a year after overhauling his sheep. Lambs should never be sold before fattening for it will never pay.

There is another important thing for a ryot to consider. Just like cattle sheep too require shelter during the inclement weather. The shed need not be costly but it must be put up on an elevated place and should be kept dry throughout. It must also be raised from the surrounding ground level and must be disinfected at least once a week. It must be well ventilated and must contain 4 to 5 compartments. These compartments will be useful at the time of mating, and secondly at the time of lambing to put different classes of animals in different compartments. For example, during the mating season lambs must be put in one compartment, served in another, grown up rams in the third, ram with the ewes in the fourth and so on. During lambing the parturition ewes must be kept apart, the lambed ewes in one, grown up lambs in another and so on. It is also desirable to provide them with bedding of hay or dry soft leaves during the monsoons, provided the stalls are cleaned every day and the floor allowed to dry. Wet beddings should never be used in the stalls and the damp front is also objectionable. For, the sheep are liable to catch cold in the first instance and may develop pneumonia to which sheep are particularly liable.

Mating:—Mating sheep is another important thing and during that period a shepherd has to pay a little more attention towards his flock, because it is then that he lays the foundation of his future stock. A month before mating he should select all good ewes from his flock and feed them on concentrates till they are mated. In selecting ewes he must see that ewe lambs under one year and eight months (which period has been considered enough for ewe lambs to become adults) are not included in the mating batches. Rams selected for breeding must also be fed on concentrates to an equal period or sometimes even longer, to have

sufficient vigour and strength to cover all the ewes put under a particular ram during the prescribed period. In-breeding should not be carried out and to avoid this he will have to change his breeding ram once in every $2\frac{1}{2}$ years or $3\frac{1}{2}$ years. He should also see that no young ram under 3 years or old rams over 8 years are used for mating. A good ram in his prime i.e., between 3 and 6 years will easily serve about 30 to 40 ewes in 3 weeks. He must also see that the selected rams have not got more black patches on their coats if he is having a white flock. Further, the ram must be of a very good constitution and must have a good appearance with a broad pelvic region and strong hind quarters. He must be of a very good pedigree, i. e., his sire and dam should be very good wool and mutton yielders. The shepherd must also see that all the parts of that particular ram and also lambs are in proper form and size. The above points will be enough for the ryots to keep their stock to a standard and it will not also be very difficult for them to select one of this kind. If a ryot has not good rams with him, it is always better to go in for good ones, rather than spoil his flocks by using bad ones.

The period of mating should not be lengthened, simply because one or two ewes were left uncovered. For, the lambing also will be prolonged to an equal period, which must be as short a period as possible. Else, the owner may not find it convenient to pay as much care and attention throughout, which the young lambs may require.

Another thing to be noticed in mating is the season. This can be regulated according to the owner's convenience and also according to the weather and rainfall conditions of the locality. A ryot or shepherd should adjust his mating in such a way as to get his lambs just after the rain, when fresh grass is up and before winter. It has been experienced that the percentage of mortality among lambs born in this season was very much lower than in any other season. In South India, since we get rain in June, July and August, the proper time for mating sheep will be the end of March or earlier part of April. The period of gestation among sheep is only 150 days and the owner can expect the lambings in September-October when it will be easy for him to feed his lamb-ed ewes and lambs with tender grass and leaves.

A month before the expected lambing the owner has to see to the following particulars because at this time many ewes will be in

an advanced state of pregnancy. The owner must be very kind to these parturition ewes. These must have tender leaves and dry pasture and also a fair amount of exercise. Shifting ewes from place to place, changing pastures every now and then and also the change of fodder will do them good. A shifting fold will have to be used in such cases to facilitate their folding in different places, but all the same, he must be careful to fold them only on dry and never on moist lands.

A week or so before parturition, the owners will have to isolate all ewes that are very much advanced in pregnancy into one group and should graze them separately. They must be housed in a separate compartment away from the main flock with ample space inside, that is to say, they should never be overcrowded.

During this time the owner or at least the shepherd boy must sleep in the stalls very near to the parturition pen to give prompt help and also to attend on the lambed ewes and lambs. Help at the time of parturition is important. The shepherd must visit the ewes from time to time during nights so as to afford assistance when really required. Many lambs and ewes are being lost for want of proper assistance while lambing, but he must also be careful to avoid unnecessary interference, which may also be detrimental to their health. As soon as one ewe lams he must remove her from the pen to another adjacent pen and must allow her to remain quiet for sometime at least till she drops the placenta which may come off in two hours. Meanwhile the boy must dry the lamb, always keeping it near the mother for fear that she may forget her lamb. Then the lamb must be made to suck the udder for sometime. Then give the mother some tender grass or leaves to eat. She must be allowed to remain with her lamb away from the other flock at least for one full day. The following troubles are met with at this time and many lambs die for want of proper attention to these tiny ones which after all is not very difficult:

Young ewes may neglect their lambs after lambing, also weak and old ewes may sometimes do the same. In such cases the lambs will have to be forced on them for 2 or 3 days after which period the ewes will themselves take them and there would not be any further trouble.

In certain cases, the outward opening of the milk teat will be blocked up by a gummy substance and the milk may not flow even if the lamb suckle for a very long time. In such cases the ewe must be handled slowly and keeping the lamb near the teat the gummy substance must be drawn out before forcing the lamb to suckle the teat. After a few minutes' suckling, the milk will begin to flow as usual.

In some cases the mothers would not have any milk at all and the owner will have to feed the lambs on cows milk. In places like Mysore and Coimbatore, there is a practice of keeping milk goats to act as wet nurses to the deserted lambs. There is nothing but the owners' eye to find out all the troubles mentioned above and also to remedy them then and there, failing which many may die within few days after their birth.

For eight or nine weeks the lambs are able to live on mothers' milk alone, but it is advisable to feed them with tender grass after 3 or 4 weeks. The lambed ewes with the lambs should never be let out when there is dew on the grass. For they will catch severe types of dysentery and many will die at one stretch. They should not also be exposed to the severe sun or rain and they must be well sheltered till the lambs are strong and ewes healthy.

A shepherd or a ryot will have to be extra careful about his lambs only for about a month or 5 weeks after which period he can leave them to Nature to some extent. When the lambs are about a month and a half old, they may be mixed with the main flock.

Weaning of Lambs :—Lambs must be weaned when they are about 3 months old. The process is very simple, i. e., all the lambs after 3 months must be picked up separately one evening and must be housed and grazed separately for 3 consecutive days. On the 4th or 5th day, these can be mixed again with the main flock during which period, the dams will forget their lambs and may not allow them to suckle. Weaning must be done for two reasons. If the lambs are allowed to suckling till they attain 6 or 7 months old, this will tell very badly on the constitution and health of the dams, for they would not have sufficient time to recoup their health before the next mating season. Secondly after 3 months, the lambs will begin to eat grass and fodder avariciously and if rich milk also is taken with it they may get jaundice and will die in numbers.

After 3 months the ryots have to select lambs for their breeding purpose. They must select and keep them separate and must also give some special attention to these. The remaining ram lambs must be castrated and fattened during the remaining 9 months and when they are a year old, they must be disposed of. The ewe lambs must be looked after properly, for they replace the old and weak ones in his flock.

Overhauling of sheep :—The last item in stock keeping is overhauling. Overhauling of sheep must be done every year. It is then that the ryot selects the good ewes for breeding. The remaining bad ones go to the butcher after fattening. The best time for overhauling sheep is just after shearing. Because this will help the owner to see the condition of the sheep and also whether a particular sheep is suffering from any skin disease and so on. Yearling rams, old and condemned ewes are the animals that a shepherd has to sell every year. In selecting old ewes he must know that the fifth year is said to be the prime in sheep i. e., no improvements can be expected from a sheep when he or she has passed the fifth year. As in cattle, the age of sheep can be detected by looking at the teeth. At the end of 5 years their mouths will be 'full' and after sixth year the sheep begin to lose their teeth, when they are called broke-mouthed. Up to 8th year they may be kept if in good condition and health, but not beyond.

In the case of an ordinary ryot who owns about 20 to 25 acres of land, it will be profitable to keep a flock of about 100 sheep on his farm as a side industry. A rough estimate of maintaining them is given below :—

ATTENDANCE.

	Rs. A. P.
A cooly on 5 annas a day for a year	... 112 8 0
A boy on 4 annas for 3 months i. e., one month for mating and 2 months for lambing	... 22 8 0
Cost of concentrates for 100 sheep for 2 months at present rates	... 103 4 0
Depreciation on a shed costing Rs. 200	... 20 0 0
Cost of fodder during summer apart from the by-products of the farm, a rupee worth of green fodder per day three months	... 90 0 0

Sundries to meet clipping charges, etc.	...	50 0 0
		<hr/>
Total Rs.	...	398 4 0
		<hr/>
		Or Rs. 400

INCOME.

The present yield of wool of local sheep is very low. And we can take it as a minimum of $1\frac{1}{2}$ lbs. per head and at 6 annas a pound	...	56 4 0
Out of 100 sheep one can expect at least 80 lambs to come up, to be on the safest side we will take it as 70. Out of these 50 per cent will be ram lambs and these 35 at Rs. 6 each will fetch	...	210 0 0
For 25 old owes to be sold every year at Rs. 5 each. For 35 young ones will be coming to replace them	...	125 0 0
Apart from the above the owner can gain at least 8 annas per night for penning sheep round about Coimbatore by penning them either on his own lands or on any other neighbour's lands. He can do this for a period of 8 months	...	120 0 0
During the other 4 months when he houses them in the sheds, he can at least collect about 4 cartloads of manure per month, being sheep manure each cartload can at least be valued at Rs. 3 each. Thus for 16 cartloads	...	48 0 0
		<hr/>
Total Rs.	...	559 4 0
		<hr/>
		Say Rs. 560

In the above estimate, the depreciation on owes and the value of ewe lambs are not included, because owner is expected to replace his old stock by ewe lambs. From the above figures we see by keeping a flock of 100 sheep as a side industry a ryot can realise Rs. 560 for which he has to spend only Rs. 400. Thus he can make a clean profit of about Rs. 160 at the end of every year. This estimate is based on the present state of sheep, but when improved a ryot may gain double or three times the amount.