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Sheep management during drought

Department of Agriculture, Western Australia
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SHEEP MANAGEMENT DURING DROUGHT

Experiencing a drought can be likened to fighting a war.

Every field commander does three things. He assesses his own resources. He assesses the enemy's resources. He then sets up a situation favourable to himself.

Each farmer should plan to set up a situation most favourable to himself, on his own farm.

The enemy (drought) attacks simultaneously in three ways:

1. **Physically.** It reduces your physical resources—water supplies, feed, sheep numbers.

2. **Financially.** It saps your financial resources. A drought crisis can be as severe as probate, financially.

3. **Emotionally.** It puts you under emotional stress. If you can't do anything about it it causes frustration, which may prevent logical planning.

Symptoms of frustration are:

- Aggressiveness—(Blame the Wheat Board! Blame the son-in-law! Blame the banker!)
- Regression—(Pretend, and hope, that the problem will go away).

The enemy (drought) plans to stop the war about mid-June, 1970.

To plan your campaign you must first assess your own resources and summarise your own situation.

Our climate is one of the most reliable in the world. We can be bet on having no useful pasture growth during the summer and more-or-less normal pasture growth after June, 1970.

List on paper your water, stored feed and paddock feed reserves, animal types and numbers.

Establish the extent of your financial resources—how much money you have on hand—how much you can borrow.

Find out the extent and type of assistance you can get from other farmers (agistment? water?) and from the Government.

Keep informed about prices and price changes.

Seek out technical information to help you plan tactics.

Carry on living in a normal way to reduce emotional tension.

Having summarised your own resources, begin calculating alternative tactics.

This article was prepared by officers of the Sheep and Wool Branch, Wheat and Sheep Division, in co-operation with the Animal Division and Rural Economics and Marketing Section. It is available as Department of Agriculture Bulletin 3676.
**ALTERNATIVE TACTICS**

There are five main alternative tactics:

1. Agistment.
2. Feed stock.
4. Do nothing.
5. A combination of any of the above.

Budget each alternative as a way of getting through the drought and as a way of recovering from the drought.

Choose the cheapest alternative.

Reconsider the other alternatives as minor tactics.

**Objects of All Tactics**

1. To preserve resources that are hard to replace, such as the breeding flock, capital resources, liquidity.
2. To set up a situation at the end of the drought (June 1970) that will enable you to recover quickly from the effects of the drought.

**Comparison of Tactics**

**Agistment** is better than prolonged hand-feeding, or selling, and is better than heavy supplementary feeding (say $3 per sheep at present charges for agistment).

An ideal solution is to send ewes to agistment until late summer, and expect a normal lambing percentage in July, 1970. The remaining sheep would then usually be carried on the affected property with relatively less grainfeeding and water-camping.

A last resort for farmers without water may be to lease a 10-acre paddock beside the nearest reliable water supply and feed a complete ration of grain to the sheep.

**Doing nothing**: Because the Western Australian climate is one of the most reliable in the world we can bet on having no effective pasture growth in summer and a resumption of more-or-less normal pasture growth by June 1970. In these conditions it will always pay to do something.

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**Feeding or Selling?**

Our budgets show that most farmers with enough water but not enough pasture and stubble feed will be wise to sell only the normal surplus of sheep. Recovery from the financial effects of the 1969 season will be faster if you have the sheep in June 1970 that you would want to carry through a normal summer.

**If more sheep must be sold ...**

Some farmers may be forced to sell more sheep. Two reasons are—

- It may not be feasible to cart the amount of water needed and no agistment can be found.
- It may not be possible to borrow the amount of money needed for feed or agistment.

If this is the case the preferred order of selling is—

1. broken mouthed wethers
2. broken mouthed ewes
3. culls
4. older wethers
5. younger wethers
6. wether weaners
7. older ewes.

The order of selling may be adjusted if some sheep are in better condition and bring a relatively better price.

The object is to keep a flock of breeding ewes. The most valuable sheep to have in June 1970 will be ewes due to lamb in July.

Selling some sheep will reduce the number for which water must be carted, and will reduce the number of sheep to be fed grain, reduce the amount fed to each, and provide some funds to buy grain.

However selling sheep will—

- increase 1970 expenditures, and
- reduce 1970 incomes.
THE COST OF HAND FEEDING

On less seriously affected farms the extra supplementary grain needed to carry normal numbers of sheep through summer may cost only a dollar per sheep more than in normal summers. Supplementary feeding, to hold sheep in a safe backward-store condition until June 1970, is the obvious thing to do.

On more seriously affected farms, possible handfeeding requirements may be as shown in Table 1a.

Naturally the cheapest available feed will be used. Typical grain costs will be as shown in Table 1b.

Budgets

To compare feeding costs with costs of selling, "partial budgets" can be used. These list the costs and incomes that depend on whether you feed or sell. For partial budgets the costs of keeping sheep are the value of grain for handfeeding and the cost of watercarting.

<table>
<thead>
<tr>
<th>Table 1a.—Typical hand feeding requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Until Harvest</td>
</tr>
<tr>
<td>September, October, November</td>
</tr>
<tr>
<td>a. No handfeeding needed</td>
</tr>
<tr>
<td>b. Pasture and supplementary grain</td>
</tr>
<tr>
<td>c. Complete ration of grain for 3 months</td>
</tr>
<tr>
<td>Dec., Jan.,</td>
</tr>
<tr>
<td>After Harvest</td>
</tr>
<tr>
<td>Feb., Mar., Apr., May, June</td>
</tr>
<tr>
<td>d. Stubbles : Stubbles or pastures, with supplements</td>
</tr>
<tr>
<td>e. Stubbles and failed crops :</td>
</tr>
<tr>
<td>f. Total ration of grain for seven months</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 1b.—Typical feeding costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Harvest</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>a</td>
</tr>
<tr>
<td>b</td>
</tr>
<tr>
<td>c</td>
</tr>
<tr>
<td>c</td>
</tr>
</tbody>
</table>

Summary of your requirements:

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THE COST OF SELLING

The real cost of selling sheep that would not normally have been sold in 1969 is the 1970 price of replacement sheep less the 1969 selling price of sheep plus the nett value of production that would have been obtained if the sheep had been kept.

Nett losses of production if sheep are sold and then replaced in June, October or December, 1970, are shown in Table 2a. The budgets in which these are calculated are given in the Appendix on pages 18 to 20.

Examples of the real cost of selling for various classes of sheep sold in 1969 and replaced in October, 1970, by buying sheep one year older are given in Table 2b.

Costs of replacing by breeding are comparable but the budgets are more complex.

In every case, if the costs of grain and water-carting are cheaper than the "cost of selling", it will pay better to feed than to sell.

**Note:** In table 2b, sheep are replaced in spring. If they are replaced in June, the nett loss of production will be lower and the replacement price will probably be higher.

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**Table 2a.—Nett loss of production if sheep are sold**

<table>
<thead>
<tr>
<th>Class of sheep</th>
<th>Month of replacement</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken mouthed wethers</td>
<td>$0.62</td>
<td>$1.40</td>
<td>$1.80</td>
<td></td>
</tr>
<tr>
<td>Broken mouthed ewes</td>
<td>$0.62</td>
<td>$3.62</td>
<td>$4.00</td>
<td></td>
</tr>
<tr>
<td>Adult wethers</td>
<td>$1.09</td>
<td>$2.05</td>
<td>$2.53</td>
<td></td>
</tr>
<tr>
<td>Wether weaners</td>
<td>$0.74</td>
<td>$1.70</td>
<td>$2.18</td>
<td></td>
</tr>
<tr>
<td>Adult ewes</td>
<td>$1.09</td>
<td>$4.84</td>
<td>$5.43</td>
<td></td>
</tr>
<tr>
<td>Ewe weaners</td>
<td>$0.74</td>
<td>$1.70</td>
<td>$2.18</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** It is assumed that ewes will lamb in July, 1970.

**Table 2b.—Calculations of the real cost of selling**

<table>
<thead>
<tr>
<th>Class of sheep</th>
<th>Replacement price 1970</th>
<th>Selling price 1969</th>
<th>Nett value of production lost</th>
<th>Real cost of selling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Broken mouthed wethers</td>
<td>1.50</td>
<td>0.50</td>
<td>+ 1.40</td>
<td>= 2.40</td>
</tr>
<tr>
<td>Broken mouthed ewes</td>
<td>1.50</td>
<td>0.50</td>
<td>+ 3.62</td>
<td>= 4.62</td>
</tr>
<tr>
<td>F.F.M. wethers</td>
<td>4.00</td>
<td>3.00</td>
<td>+ 2.05</td>
<td>= 5.05</td>
</tr>
<tr>
<td>2-tooth to 6-tooth wethers</td>
<td>6.00</td>
<td>3.00</td>
<td>+ 2.05</td>
<td>= 5.05</td>
</tr>
<tr>
<td>Wether weaners</td>
<td>6.00</td>
<td>2.50</td>
<td>+ 1.70</td>
<td>= 5.20</td>
</tr>
<tr>
<td>F.F.M. ewes</td>
<td>5.50</td>
<td>3.00</td>
<td>+ 4.84</td>
<td>= 7.84</td>
</tr>
<tr>
<td>2-tooth to 6-tooth ewes</td>
<td>10.00</td>
<td>5.00</td>
<td>+ 4.84</td>
<td>= 9.84</td>
</tr>
<tr>
<td>Ewe weaners</td>
<td>10.00</td>
<td>3.00</td>
<td>+ 1.70</td>
<td>= 8.70</td>
</tr>
</tbody>
</table>

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WATER REQUIREMENTS

Evaporation
From September to June water levels in dams will decline four or five feet through evaporation alone.

Consumption of fresh water
Sheep will drink an average of about ¾ gallon per day in the hot months, and about ¼ gallon per day in the cooler summer and autumn months. Expected consumption per sheep will be about 120 gallons in 180 days.

Water Carting
Over a period of six months, the direct cost of water carting in the farm truck would be about two cents per sheep for every mile the water is carted. However, if a five-ton truck can only make one trip per day, enough water could be carted for only about 1,300 sheep in mid-summer.

It is worth carting bore water to save mileage or queueing-time at the standpipe. Table 3 will help you estimate the “ton-miles” for carting salty water instead of fresh.

Summer thunderstorms?
Judging by previous droughts and bad years there is a 50/50 chance of summer thunderstorms occurring. In case you have this good luck, renovate or improve dam catchments now and desilt empty dams.

Salty water
Sheep should not be moved suddenly from fresh water to water with more than 400 grains per gallon. To change sheep to saltier water, mix waters so the change is made gradually.

Don’t assume that bores tested some years ago have not changed in salinity.

Water rationing
Sheep on green pasture obtain most or all their water in the green feed.

Water can be rationed to sheep in individual pens but there are no proven ways to ration water to flocks of sheep.

Watering sheep every second day does not reduce water consumption.

In experiments in South Africa, watering sheep every third day reduced water consumption by one-third. Watering every fourth day killed some sheep.

With sheep fed grain, watering every third day may cause grain poisoning.

Table 3.—Expected consumption and suitability of water for sheep

<table>
<thead>
<tr>
<th>Total soluble salts</th>
<th>Expected consumption per sheep Gallons in 180 days</th>
<th>Suitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>120 galls.</td>
<td>Suitable for all sheep.</td>
</tr>
<tr>
<td>250 grains per gallon</td>
<td>140 galls.</td>
<td></td>
</tr>
<tr>
<td>500 grains per gallon</td>
<td>160 galls.</td>
<td>Suitable for all sheep, but introduce it gradually to weaners.</td>
</tr>
<tr>
<td>750 grains per gallon</td>
<td>190 galls.</td>
<td></td>
</tr>
<tr>
<td>1,000 grains per gallon</td>
<td>260 galls.</td>
<td>Suitable for wethers, and for ewes until late pregnancy.</td>
</tr>
</tbody>
</table>
FEED REQUIREMENTS

Table 4 shows the weekly wheat ration to keep sheep vigorous but in backward store condition if there is no paddock feed. This ration should be increased by 1.4 lb. wheat from mid-April, or earlier if the weather is wet and windy.

Heavier feeding will not pay.

Comparative Feeding Values of Common Feeds

1.0 lb. of wheat has the same feeding value as—
1.0 lb. of barley
1.1 lb. of sheep nuts
1.2 lb. of oats
2.0 lb. of hay;

or

1 bushel of wheat has the same feeding value as—
1.2 bushels of barley
66 lb. of sheep nuts
1.8 bushels of oats
3 bales of hay.

Protein requirement

Grains contain 8-12 per cent. protein. Additional protein will not be required.

Vitamin requirement

The only vitamin which may be required when drought feeding is vitamin A. Lambs obtain this in milk and later from green feed. Sheep normally store enough in their livers to last the summer.

Table 4.—Weekly wheat ration

<table>
<thead>
<tr>
<th>Class of Sheep</th>
<th>Wheat Ration per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb. per head</td>
</tr>
<tr>
<td>1. Weaned lambs greater than 30 lb. and/or 6 months</td>
<td>4.2</td>
</tr>
<tr>
<td>2. Adult dry sheep and pregnant ewes in the first 3/8 of pregnancy—</td>
<td></td>
</tr>
<tr>
<td>Small merinos—backward store condition at 75 lb.</td>
<td>5.5</td>
</tr>
<tr>
<td>Normal merinos—backward store condition at 80 lb.</td>
<td>6.2</td>
</tr>
<tr>
<td>Cross bred or large merinos—backward store condition</td>
<td>7.0</td>
</tr>
<tr>
<td>at 85 lb.</td>
<td>increase to</td>
</tr>
<tr>
<td>Paddock roughage can replace the hay</td>
<td>8.0*</td>
</tr>
<tr>
<td>+ 2 lb. of hay</td>
<td>10.0*</td>
</tr>
<tr>
<td>+ 4 lb. hay</td>
<td>9.0*</td>
</tr>
<tr>
<td>Paddock roughage can replace the hay</td>
<td>13*</td>
</tr>
<tr>
<td>+ 5 bales of hay</td>
<td></td>
</tr>
<tr>
<td>3. Pregnant ewes in the last six weeks of pregnancy</td>
<td></td>
</tr>
<tr>
<td>4. Ewes with lambs at foot</td>
<td></td>
</tr>
<tr>
<td>5. Rams before mating</td>
<td></td>
</tr>
</tbody>
</table>

* Any more grain would cause some digestive upsets, so hay, or paddock grazing, should be used to provide the extra feed required.
RAMS: If rams are mated more than six months after their last green pick, they should be given 1,000,000 I.U.'s of vitamin A at least six weeks before mating.

WEANERS: If ewes had no green pick during lactation and lambs had no green pick before summer, the lambs should be given 500,000 I.U.'s of vitamin A.

Mineral requirement

Grain and cereal straw contain little calcium, and weaners may become deficient after three or four months on a total ration of grain (or grain and cereal straw). Autumn-lambing ewes that have been on a total diet of grain (or grain and cereal straw) for some months may need calcium supplements.

These two classes of sheep should receive calcium supplements:
- either 1¼ lb. finely ground limestone per 100 lb. of grain, mixed with or sprinkled over the grain,
- or a lick, comprising 2 parts finely ground limestone or rock phosphate and 1 part salt (avoid using the lick if water is being carted or if water is salty).

NOTE: We recommend that weaners should have the best of whatever paddock feed is available, and that ewes should lamb in July. Such weaners and ewes will not need calcium supplements.

Other minerals will be required only where they are needed in normal years.

RELATIVE FEED COSTS

Cereal grains (wheat, barley and oats) are about as digestible as pastures in early or mid spring. Hays are a little more digestible than dry pasture. Some unusual feeds will be used this summer, including softwood sawdust, waste paper and "deep litter" from poultry houses, as well as molasses and urea.

We recommend cereal grain because grain feeding is straightforward and reliable and because there are unlimited supplies of grain in Western Australia at reasonable prices.

Table 5 shows the quantities of different feeds equivalent to 6½ pounds of wheat (recommended weekly ration for a dry sheep) and the costs of a week's ration at a range of feed prices.
When to Start Feeding

Hand feeding of sheep should begin early, before the stock need the full supplement. It takes time for sheep to become accustomed to hand feeding and to build up to a useful intake, and it may be difficult to pull them back if they have been allowed to slip too far before the feeding is commenced.

Hand feeding should be planned well in advance and sheep should be introduced to a light ration a month or more before it is planned to have them on their full ration.

Dry sheep that are in forward store or fat condition at the start of a period of feed shortage should be gradually dropped down to strong backward store condition. This period of controlled weight loss can be arranged to coincide with the grain introduction programme. Feeding should begin while the sheep still weigh 90-95 lb.

Introduction to Grain

To avoid possible digestive upsets and/or deaths grain should not be introduced at more than the amounts shown in Table 6.

How Often to Feed

After following the above introduction programme, sheep should be fed at the following intervals:

- Dry sheep—twice weekly.
- Ewes in late pregnancy—every second day.
- Lactating ewes (after lambing is finished) twice weekly.
- Weaners—every second day.

How to Feed

The grain should be trailed onto hard ground if possible, so all sheep can get some. In yards or on sandy paddocks improvised troughing will usually be needed to avoid waste.

A complete ration can be fed in open paddocks, in small sheltered paddocks or in yards.

How Long to Feed

If sheep have been hand fed under drought conditions, feeding should continue for a few weeks after the arrival of green feed, to avoid losses. The feeding should be gradually phased out over 3 to 4 weeks after the break of the season.

Treating Grain

No benefit can be expected from crushing, soaking or sprouting grain.

Table 6.—Introduction of sheep to grain

<table>
<thead>
<tr>
<th>Day</th>
<th>Ration per Sheep</th>
<th>Amount per 100 Sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 oz.</td>
<td>12½ lb.</td>
</tr>
<tr>
<td>2</td>
<td>2 oz.</td>
<td>12½ lb.</td>
</tr>
<tr>
<td>3</td>
<td>4 oz.</td>
<td>25 lb.</td>
</tr>
<tr>
<td>4</td>
<td>4 oz.</td>
<td>25 lb.</td>
</tr>
<tr>
<td>5</td>
<td>6 oz.</td>
<td>37½ lb.</td>
</tr>
<tr>
<td>6</td>
<td>6 oz.</td>
<td>37½ lb.</td>
</tr>
<tr>
<td>7</td>
<td>8 oz.</td>
<td>50 lb.</td>
</tr>
<tr>
<td>8</td>
<td>8 oz.</td>
<td>50 lb.</td>
</tr>
<tr>
<td>9</td>
<td>10 oz.</td>
<td>62½ lb.</td>
</tr>
<tr>
<td>10</td>
<td>10 oz.</td>
<td>62½ lb.</td>
</tr>
<tr>
<td>11</td>
<td>12 oz.</td>
<td>75 lb.</td>
</tr>
<tr>
<td>12</td>
<td>12 oz.</td>
<td>75 lb.</td>
</tr>
<tr>
<td>13</td>
<td>12 oz.</td>
<td>75 lb.</td>
</tr>
<tr>
<td>14</td>
<td>12 oz.</td>
<td>75 lb.</td>
</tr>
<tr>
<td>15</td>
<td>1½ lb.</td>
<td>150 lb.</td>
</tr>
<tr>
<td>17</td>
<td>1½ lb.</td>
<td>150 lb.</td>
</tr>
<tr>
<td>19</td>
<td>2 lb.</td>
<td>200 lb.</td>
</tr>
<tr>
<td>21</td>
<td>2 lb.</td>
<td>200 lb.</td>
</tr>
<tr>
<td>23</td>
<td>3 lb.</td>
<td>300 lb.</td>
</tr>
<tr>
<td>26</td>
<td>3 lb.</td>
<td>300 lb.</td>
</tr>
<tr>
<td>29 onwards</td>
<td>Required</td>
<td>amount as two feeds per week</td>
</tr>
</tbody>
</table>
MANAGEMENT

Weaners

Autumn Lambing

Lambs that have reached 30 lb. liveweight or 6 months of age can be safely weaned onto an all-grain ration.

The weaners should have access to the best paddock grazing possible.

The grain ration will be about 5 lb. of oats or 4 lb. of wheat per head per week. Oats are preferable.

Care should be taken to introduce the grain gradually. (See "Techniques of Feeding", page 413.)

Winter/Spring Lambing

Lambs that have reached 20 lb. liveweight or 6 weeks of age can be safely weaned onto a 50/50 hay/grain ration or grain plus good paddock feed.

If hay or good paddock grazing is not available then the lambs should not be weaned until they reach approximately 30 lb. liveweight, when they can safely be fed a total grain ration.

Early Weaning When Paddock Grazing is available.

Trail grain to ewes and lambs (See "Techniques of Feeding", page 413.)

After lambs have become accustomed to grain, wean onto the best available paddock feed, and feed 3-4 lb. oats per head per week.

Early Weaning When No Paddock Feed is available.

If hay is available, wean into a small paddock with shade and good water.

Feed a ration containing 50 per cent. hay and 50 per cent. oats, as much as can be consumed.

On reaching 30 lb. liveweight at about 22 weeks of age they can be transferred gradually to a total grain ration.

If there is no paddock feed and no hay, feed the ewes enough grain for lactation and wean when the lambs reach 30 lb., following procedures suggested for autumn lambs.

Time of lambing

Mate in February 1970, to lamb in July. If you mate to lamb in April the ewes will need an extra bushel of wheat, or if no paddock feed is available, an extra 1½ bales of hay and half a bushel of wheat.

Ewes mated in backward store condition should produce about 60 per cent. of lambs.

It may pay to feed extra grain from two weeks before mating until the sixth week of mating, to improve body condition and lambing percentage.

If carry-on finance is scarce, this will not be the most profitable way to invest it.

Shearing

Wet, windy weather soon after shearing will cause severe losses in any flock that lost condition in the weeks before shearing. Such flocks should be held in sheltered paddocks if a cold front is forecast during the weeks after shearing. The shelter should be on the downwind side of the paddock.

Soil conservation

Keep the sheep off eaten-out paddocks that become erosion risks.

Sheep fed a total ration of grain can be fed in a normal paddock until it becomes an erosion risk. Then feed in small subdivisions on non-erodable land near water and shelter, or feed in yards.

If you have only one water supply, it is better to reticulate or cart water to the other paddocks than to leave all the gates open.

Finance for cropping

If carry-on finance is not adequate for cropping as well as handfeeding, and cannot be borrowed, consider selling more sheep (see p. 407).
ANIMAL HEALTH NOTES

Drought imposes severe stress on most classes of stock but particularly on breeding animals. The combination of shortage of feed, coupled with heavy concentrations of animals around handfeeding areas and, in some cases, contaminated water supplies may lead to outbreaks of disease.

Contaminated Dams

As the water level in dams falls and stock concentrations rise the water may become foul with sheep droppings. This may lead to outbreaks of salmonellosis (paratyphoid), which causes severe scouring and death in sheep of any age or sex.

Such waters can be purified by adding 10-15 lb. of bleaching powder per million gallons of water. Bleaching powder is also known as chlorinated lime or chloride of lime. It gives the water a slight taste but is harmless.

Internal Parasites

Sheep in a run-down condition are very susceptible to all the effects of worms.

It is recommended that all sheep under 12 months of age in areas with average annual rainfall greater than 15 inches, be drenched 6 weeks after the feed has dried off. A broad-spectrum drench should be used. This will kill virtually all adult and immature worms and there will be little further pick up of worm larvae.

If summer rains occur sheep may be affected with the barber's pole worm (Haemonchus). The most obvious sign of this is anaemia (very pale mouth, eye membranes and skin), and sometimes a swelling under the jaw (bottle jaw).

To prevent haemonchosis, drench sheep 18 days after any summer rains which give damp humid weather for several days. One of the cheaper, narrow-spectrum drenches is quite suitable for this purpose.

Barber's pole worm may affect sheep of any age, so after summer rains, all classes of sheep should be watched carefully for signs of infestation.

Over-feeding With Grain

There are two dangers to sheep associated with heavy grain feeding. These are:

- Grain engorgement
- Enterotoxaemia

Grain Engorgement

Grain engorgement is particularly likely to occur during the first couple of weeks after sheep are introduced to grain.

Affected animals will be seen standing by themselves looking very dull. More severely affected cases will show rapid breathing, grinding of their teeth and a light coloured, mild diarrhoea. There are likely to be quite a few cases of lameness (founder). Bad cases go down and die in 24-72 hours.

The best thing to do is to remove these sheep from the main flock and reintroduce them to the grain much more slowly and carefully than the original mob. Badly affected cases may be helped by 12-hourly drenches of 2 fluid ounces of magnesium hydroxide. For valuable animals, such as rams, further treatment may be obtained by consulting a veterinary surgeon.

Enterotoxaemia

Severe losses from enterotoxaemia have occurred in flocks of sheep on heavy grain feeding regimes, particularly during the first few weeks.

It is a wise precaution to vaccinate sheep against this disease at least 14 days before starting grain feeding, unless they have been vaccinated during the preceding 6 months.

If the sheep have not had any vaccination previously, a course of two injections 30-40 days apart provides maximum protection.

Botulism (Toxic Paralysis)

Botulism is usually caused by sheep eating carcasses in which the botulinus
organism has grown and produced its toxin.

The disease can be recognised by sheep becoming weak in the hind limbs and showing a peculiar 'tail wriggling' symptom, and sometimes drooling saliva. Death is almost invariable after several days.

To prevent this, all carcasses should be removed from sheep paddocks.

Should the disease occur, further losses can be prevented by vaccination with botulinum vaccine (cost $15 per 1000 sheep).

Coccidiosis

This disease is a bowel infection leading to severe scouring and is usually seen in young lambs. It has been seen frequently in recent months in lambs whose mothers are in poor condition and therefore have an inadequate milk supply.

To reduce the chances of this disease occurring it is recommended that the lactating ewes be given the best feed available and that where grain is being fed on the ground, the site of feeding be changed frequently to avoid the ground becoming contaminated.

Once affected, lambs can be treated by giving sulphadimidine 33½ per cent. solution at 3 cc per 15 lb. bodyweight. Before going to the trouble and expense of treatment however it is recommended that veterinary help be obtained to confirm the diagnosis, as the infection can easily be confused with other causes of scouring.

Deaths of sheep on salty water

Most deaths caused by salty water involve water containing more than 1000 grains per gallon. The worst affected sheep stand apart from the rest and scour almost constantly. Usually the whole flock does poorly.

Weaner deaths occur on waters containing more than 500 grains per gallon, and are due to loss of appetite rather than direct salt poisoning.

The limit for lactating ewes is not known, but would be in the region of 600 or perhaps 800 grains per gallon.

APPENDIX

COSTS OF SELLING AND REPLACEMENT

If you are considering selling sheep now and replacing them after the drought, you should compare the cost of selling and replacement with the probable cost of feeding until the end of the drought.

In calculating the cost of selling and replacement, the value of lost production during and after the drought should be added to the loss involved in selling sheep at a low price now and replacing them at a high price after the drought.

Wool production under drought feeding conditions will be reduced.

If replacement is delayed after the end of the drought in June, 1970, additional losses in production are incurred. The most serious losses will be with ewes, as a lamb "crop" will be missed.

A. YOUNG EWES

Assumptions:

In the following calculations it is assumed that:

1. Young ewes would realise $3 in the spring of 1969.

2. The death rate would be
   7 per cent. during drought.
   5 per cent. after drought.

3. Sheep costs are
   5 cents per month, September to June.
   8 cents per month, June to October.

4. Wool production will be
   0.5 lb. a month during drought.
   0.9 lb. a month after drought.
5. Lambs will be worth $5.00 per head in October/November, 1970.

6. Lambing percentage would be 60 per cent. after the drought.

7. The budgets assume that ewes bought in June, 1970 will lamb in July, and ewes bought in spring 1970 will have already lambed.

Production Missed During the Drought if Ewes are Sold:

Wool production during drought
10 months × 0.5 lb. = 5 lb. sold for
38c/lb. Gross return ... ... $1.90
Less sheep costs 10 months @ 5c .50
Less production lost from 7 per
cent. deaths ... ... .10
Less proportion of value of sheep
lost due to deaths, i.e. 7 per
cent. of $3.00 ... ... .21
Net “loss” per sheep ... ... $1.09

Production missed after the drought until ewes are replaced:

Adult Wool Production (per month)
Wool production per month 0.9 lb.
Gross return 0.9 × 40c ... $0.36
Less sheep costs 8 (cents per
month) ... ... 0.08
Less production lost from 5 per
cent. deaths ... ... 0.01
Less proportion of value of sheep
lost through death ... ... 0.01
This is 26c from each live sheep
Return per ewe present in 1969
would be 93 per cent. (the sur-
vival rate) of 26c ... ... $0.24
per month

Lamb Production—(60 per cent. Lambing)
Return per ewe present in 1969
60/100 × $5.00 × 93/100 = ... $2.79

Weaner Production
Wool 3/4 lb. per month—0.5 lb. @
40c lb. = ... ... ... $0.20
Less 5 per cent. deaths 5/100 ×
$5.00 × 1/12 = ... ... 0.02
Less sheep costs, 8c per month 0.08
Less production lost from deaths 0.01
Wool production per weaner ... $0.09
(per month)

Return per ewe present in 1969 from
weaners = 93/100 × 9c × 60/100 = .5c per
ewe per month after October 1970.

From the calculations above it can be
seen that the production missed by selling
a ewe now and repurchasing in June
(pregnant) is $1.09.

If repurchase is delayed until October
an additional 24 cents per month is lost in
wool production from July to October, as
well as the loss in lamb production, $2.79.

This makes the total loss—
$1.09 + $0.96 + $2.79 = $4.84.

All this means that if a farmer were to
purchase ewes for $8.00 in October, 1970
similar to ewes he had sold for $3.00 in
August, 1969, then his real cost of replace-
ment would be $9.84. If feed could have
been purchased for less than $9.84, he
would have been better off hand feeding
than selling.

B. OLD EWES (Broken mouthed)
Assumptions:
1. Ewes would realise $1.00 in August,
1969.

2. Death rate—
during drought—20 per cent. per
year.
after drought—10 per cent. per
year.
3. Sheep costs—
   5 cents per month, September to June.
   8 cents per month after June.

4. Wool production—
   0.4 lb. per month during drought.
   0.7 lb. per month after June, 1970.

5. Lambs will be worth $5.00 per head—October/November, 1970.

6. Lambing percentage—60 per cent. after drought.

C. YOUNG WETHERS
Assumptions:
1. Wethers would realise $3.00 in spring 1969.
2. Death rate—
   during drought 7 per cent. per annum.
   after drought 5 per cent. per annum.
3. Sheep costs—5 cents per month.
4. Wool production—
   0.5 lb. per month during drought.
   1.0 lb. per month after drought.

REAL COST OF SELLING IN 1969 AND REPLACING IN 1970

The real cost in each case is Net production loss (calculated as shown) plus Cost of purchase of replacements in 1970 minus Income from sale of sheep in 1969.

Net production loss if replacements are bought in:

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<td>$2.05</td>
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Examples

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