CHAPTER 6

FEEDLOTS

6.1 Sheep intended for export are usually assembled and held in a feedlot near the port of loading for a minimum of four to five days, as prescribed in AAHQS standards, but often for longer periods. There are several reasons for holding sheep in feedlots prior to loading onboard a ship. There is the task of actually assembling up to 125 000 sheep on a specific date or series of dates, with always the possibility of unexpected delays in the arrival of the ship. The sheep also have to be inspected and possibly innoculated under quarantine regulations. Then there are welfare considerations; sheep having been subjected to the stress of up to 36 hours in a truck or train need rest before experiencing further stress in a new environment onboard ship. The sheep also need time to adapt to a more intensive system and to a different type of feed.

Duration of Feedlotting Period

6.2 The duration of the feedlotting period is principally determined by the time the majority of sheep take to adapt to a new feed regime. The length of the period is a compromise between welfare and economic factors:

> 'The combination of conditions that lead to the maximum profitability of an animal production operation involving many animals is not necessarily the same as the combination of conditions that leads to the maximum welfare of the animals individually. For example, calculating that preparation in a feedlot costs 25c/head/day, 100 000 sheep will cost the operator $25 000 each day.

> Reducing the time in the feedlot by one day is financially balanced by the death of approximately 570 sheep (0.57 per cent). Depending on contractual arrangements, it may be more profitable to let sheep die than to allow an additional day in the feedlot for additional adaptation to pellets or rest. In 1983, insurance was used extensively by exporters and importers to cover mortality losses during transhipment from Australia to the port of cargo discharge.'[1]

6.3 The above quotation may under-estimate the present cost of feedlotting as the Committee understands that the present daily cost is about 30 cents a sheep. However, premiums for mortality insurance would have risen in recent years because of the levels of mortalities claimed by exporters.

6.4 The basic consideration for adaptation to shipboard feed is the change in gut microflora. According to Dr D. Franklin, who represented the ALEA, it takes between seven and 21 days for a complete change although most sheep adapt fairly well in five to seven days. Research done by Dr Fels has shown that it takes up to 30 days for complete adaptation by every sheep.

6.5 The AAHQS standard is:

> '2.9 Exporters should allow a minimum period of 4-5 days to prepare sheep off pasture to accommodate to the dry shipboard ration and to rest after travel.'

6.6 The source of the sheep can affect the adaptation period. The Western Australian Department of Agriculture studied 14 different sources of sheep, sheep from different properties with different backgrounds, and they found an 'enormous variation' in the acceptability of pellets and shy feeding. Some sheep readily adapted to pellets and ate them immediately, whereas other groups of sheep needed more time to adapt.[2]

6.7 The ACLA told the Committee that shippers ask livestock agents not to buy sheep from the pastoral area that have come off herbage. They prefer sheep taken off grass because their experience has shown that those sheep adapt and travel well while sheep coming off herbage tend to have problems.[3]

6.8 The Victorian Department of Agriculture believed that sheep arriving at the Portland feedlots during summer and autumn (November to May) off dry pasture could be prepared in a seven day feedlot period, whereas in winter and spring, sheep off green pasture would need a minimum of ten days.[4]

6.9 Dr Al-Dukhayyil, Managing Director of SLTT, stated that his company, on veterinary advice, specified that sheep were to spend a minimum of seven days in a feedlot before they were loaded on board a ship.

6.10 Tables 6.1 and 6.2 show the periods of feedlotting for individual shipments in Tasmania and Portland respectively. Apart from the two shipments from Tasmania in early 1983 which were not held in feedlots and, as the Committee understands, suffered high mortality levels, the average feedlotting period exceeded the prescribed AAHQS standards. However, the Victorian statistics refer to the period beginning when the first sheep entered the feedlot and ending when the last sheep left the feedlot. The average time spent in the feedlot was therefore probably between four and six days fewer than the number of days set out in the table.

Table 6.1: Tasmania - Duration of Feedlotting

Date of Departure	Ship	Number Loaded	Duration of Feedlotting (days)
January 1983	Al Yasrah	79 693	No feedlot
March 1983	Om Alqora	37 319	No feedlot
April 1983	Danny F	33 000	6
January 1984	Mawashi Al Gasseem	90 356	7
May 1984	Fernanda F	85 745	10-14
January 1985	Mawashi Al Gasseem	90 507	8
March 1985	Al Qurain	50 057	6-8

Source : Tasmanian Department of Agriculture

Table 6.2: Victoria - Duration of Feedlotting

Date of Departure	Ship	Number Loaded (Portland)	Duration of Feedlotting (days)
28/10/82	Al Shuwaikh	100 000	12
7/11/82	Al Qurain	100 000	12
25/11/82	Al Yasrah	90 000	14
11/12/82	Al Shuwaikh	110 000	10
24/12/82	Al Qurain	111 000	11
14/1/83	Al Yasrah	21 750	7
23/1/83	Al Shuwaikh	120 000	13
7/3/83	Al Shuwaikh	123 000	12
27/3/83	Al Qurain	69 000	12
19/4/83	Al Shuwaikh	126 000	15
20/5/83	Al Yasrah	98 000	10
16/6/83	Al Qurain	118 000	13
16/7/83	Al Shuwaikh	87 000	13
7/8/83	Al Yasrah	94 500	13
13/9/83	Al Qurain	88 500	12
4/11/83	Al Yasrah	103 000	14
23/11/83	Al Shuwaikh	119 000	16
9/12/83	Al Qurain	110 000	10
29/12/83	Al Yasrah	99 000	13
151/84	Al Shuwaikh	121 000	10
1/2/84	Al Qurain	88 000 (P)	7
21/2/84	Al Yasrah	60 000 (P)	7
11/3/84	Al Shuwaikh	122 000	10
29/3/84	Al Qurain	112 000	11
3/5/84	Al Shuwaikh	124 000	11
17/5/84	Al Qurain	64 000 (P)	8
7/6/84	Al Yasrah	104 000	11
19/6/84	Al Shuwaikh	57 000 (P)	8
4/7/84	Al Khaleej	36 000	8
21/7/84	Al Yasrah	106 000	10

(P) denotes part-loading at Portland.

Source : Victorian Department of Agriculture

6.11 It is obvious that the official standard of four to five days is inadequate and should be revised. The standards should also state that the specified period in the feedlot not include the days of arrival and departure from the feedlot.

6.12 The Committee RECOMMENDS that the AAHQS revise the standards to provide for a period of feedlotting of sheep of not less than seven days prior to export and that it be made clear that this period excludes the days of arrival and departure.

6.13 Further research is also necessary in this field and the main areas of research are outlined in the Brennan Report. The Committee noted that the Western Australian Department of Agriculture has being doing research in this field.

6.14 The Committee received information from a number of sources about the practice of 'topping up', where extra sheep are purchased to meet a shortfall in a shipment. Consequently, these sheep are not held in the feedlot for the required period to allow them to adapt to the new feed. Brennan refers to this practice in his report[5] and Dr Al-Dukhayyil, Managing Director of SLTT, admitted that it had occurred twice with his company's shipments. However, SLTT has given strict instructions to its agents forbidding this practice and it is adding a demurrage clause into contracts which makes the supplier responsible for any delay in the departure of a ship caused by sheep, which have been received late in the feedlot, being held there for seven days.

6.15 The Committee RECOMMENDS that the AAHQS issues instructions to quarantine veterinary officers to prevent sheep, which have not spent the specified time in a feedlot, from being loaded on to a sheep carrier.

Feedlot facilities

Feed Troughing

6.16 According to the ALEA, about 85 to 90 per cent of feedlots have feed troughs. The others spread the feed on the ground. Brennan reported, however, that 'on ground feeding is still practiced in many instances'.[6]

6.17 At the feedlot near Devonport in Tasmania, where there were no troughs, it was explained that ground feeding was more natural for the sheep and encouraged 'shy feeders' to eat dry feed.

6.18 Dr Temple Grandin reported, however, that feeding on the ground is undesirable because it may predispose sheep to salmonella infection or it may allow the feed to become contaminated.[7]

6.19 Sheep are kept in feedlots for five days or longer to enable them to adapt to the new feed regime. This includes the need to adapt to dry feed and to eating from a trough. If troughs are not used in the feedlot, the sheep have to adapt to them, as well as many other facets of a confined shipboard environment, onboard ship.

6.20 If ground feeding is provided initially to sheep in a feedlot, sheep should still be introduced to troughs at some stage in the feedlotting process.

6.21 The Committee received information about the fouling of troughs in feedlots. It was suggested that feed troughs should be raised off the ground to prevent sheep from lying in and fouling them. It was also pointed out that sheep have to feed from raised troughs onboard ship. The Committee is of the view that feeding arrangements in feedlots should approximate those on the carriers to facilitate adaptation to those conditions. The Committee understands, however, that only one feedlot has raised troughs.[8]

6.22 The Committee RECOMMENDS that troughs in feedlots be raised to approximately the height of troughs onboard carriers.

Length of Feed Troughs

6.23 There was not unanimity of opinion among witnesses on the ratio of trough length to feedlot capacity. Both Dr Arnold and Dr Franklin of the ALTV criticised the current ratio in feedlots. It was explained that more troughs were needed for rationed feeding than for ad lib feeding. With rationed feeding, some sheep ate more than their quota thereby depriving other sheep of enough feed. Mr W. Gee, Acting Director of the AAHQS, told the Committee that research in this area is presently being done. The Committee is of the view that, in feedlots which use rationed feeding, there should be enough troughing for all sheep to feed simultaneously, unless the results of the research show unequivocally that sheep are not disadvantaged by not being able to feed at the same time.

Feeding Regime

6.24 A central component of the process of adaptation to a pellet diet is the feeding regime, but the question of adaptation duration and optimum feeding regimes has not been adequately researched.[9] There is also the relative merits of a gradual introduction to pellets or ad lib feeding.

> 'It is very important in your adaptation period, if you are limiting fodder or restricting starch intake that you make available equal access to every animal.'[10]

Truscott et al. have suggested that feed be offered on an ad lib basis so that all sheep have access to the fodder.[11] There is also concern that allowance should be made in the feeding regime for climatic conditions such as, for example, additional hay at Portland during bad weather, and for the physiology of different groups of sheep such as cross-bred lambs off green feed.

Covered Feed Troughs

6.25 Many feedlots do not have covered feed troughs. Wet pellets disintegrate and any prolonged period of wet weather upsets the programme of adapting sheep to a pellet diet. Failure to adapt sheep to such feed may increase the mortality level at sea. This is contrary to good animal husbandry and welfare.

6.26 Officers of the Victorian Department of Agriculture expressed concern to the Committee about the lack of cover for troughs at the feedlots at Portland.[12] The AAHQS expressed a similar disquiet about Portland, which is prone to wet and cold weather in winter months, but indicated that the covering of troughs is not necessary for all feedlots in other areas which are not subject to the same type of adverse weather conditions.

6.27 Brennan reported that 'there is a general resistance within the industry to use covered feed troughs'. Dr Turner of the Victorian Department of Agriculture told the Committee:

> 'We have been working with our own officers in the Department seeking to lay down what might be an acceptable standard as feed trough coverage. For me to say that that was required, as it was pointed out to me by one of the exporters, is probably not right. What we should be seeking is a national standard.'[13]

Although national standards for the live sheep export trade are desirable, the existence or lack of a national standard should not prevent the adoption of measures to solve particular local problems. Both the Victorian and Federal authorities have acknowledged the need for covered feed troughs at the Portland feedlot. The absence of a national standard should not impede the installation of feed trough covering at those feedlots.

6.28 The Committee is of the view that feed troughs in export feedlots should be covered where there are problems or potential problems with weather conditions affecting the adaptation of sheep to a pellet diet.

6.29 The Committee RECOMMENDS that feed troughs be covered in export feedlots at Portland and in other places where there are problems or potential problems with weather conditions affecting the adaptation of sheep to a pellet diet.

Water

6.30 The provision of water to feedlots is generally considered to be adequate. The ALTV did comment, however, that 'there can be a lack of a backup system'.[14]

6.31 The Committee is of the view that government authorities should ensure that feedlots have an adequate water system which can maintain supply if breakdowns in the system occur.

Feedlot Layout and Capacity

6.32 Individual export companies have their own specifications for yard shape, yard size, flock size, stocking density and location of facilities. There is little research work available on any of these specifications and there is difference of opinion as to the merits of a highly intensive as opposed to a semi-intensive feedlot. The trend is away from the older highly intensive feedlot pens to the semi-intensive paddocks of five acres holding 1000 to 2000 sheep.[15] In Perth, Siba manage a highly intensive system where the sheep are placed on grating floors and totally confined within a shed complex.

6.33 There is evidence that some feedlots accept more sheep than their normal capacities. For example, the ALTV commented that 'there are many feedlots that take (sheep) beyond their normal limits'.[16]

6.34 The Committee RECOMMENDS that the State Departments of Agriculture assess the capacity of each feedlot and ensure that the capacity is not exceeded at any time.

Dust and Drainage

6.35 The ALEA indicated that most, if not all, feedlots have sprinklers to keep dust down to minimum levels.[17] The Victorian Government indicated that sprinklers had been in operation at both Portland feedlots for a number of years.[18] The Committee encountered a dust problem at the feedlot near Devonport, Tasmania. No sprinkling system was installed but attempts were made to suppress the worst of the dust by watering the forcing yards and laneways near the loading ramps.

6.36 Dust was far more severe at the Elders Feedlot at The Levels near Adelaide at the time of the Committee's visit. Although the weather conditions were abnormal, it appeared that management had not done enough to establish windbreaks and to dampen the ground to reduce the intensity of the dust storm. Although some of the dust might have originated outside the feedlot, much of it seemed to be generated by the movement of sheep within the feedlot.

6.37 Drainage is also a problem for some feedlots. When the Committee inspected the feedlot at Fremantle, water was lying in the paddocks and spread onto the main laneway. Gateways and other heavily trafficked areas had become pugged. Under these conditions there is a potential danger of footrot occurring although the incidence of footrot in Western Australia is very low. Grandin reports that, to help control salmonella infections

and other diseases, puddles that sheep can walk through and defecate in should be filled in.[19] At Portland, the feedlot management have complied with a request from the Victorian Department of Agriculture to fence off areas with bad drainage.[20]

Shelter

6.38 Although very little accurate data has been collected on the need for shelter in feedlots, the lack of shelter at the Kobo Feedlot at Portland in March 1983 contributed to the death of 15 000 sheep in conditions of high winds and low temperatures.[21]

6.39 Dr P. Arnold told the Committee that shelter in feedlots was inadequate:

> 'We are concentrating 100 000 or more sheep in one area and the animals have virtually nowhere to go. So therefore we must be totally responsible for sheltering them from the extremes of their environment. Very few feedlots have organised, catered-for, shelter to protect 100 000 sheep.'[22]

6.40 As a result of that disaster the Victorian Government required that no bare shorn sheep were to be accepted in the feedlot; that increased rations of hay be provided during cold, windy periods; that shelter belts be planted on the feedlots and that shelter sheds be erected. Shelter belts have been planted at Portland but they are a long-term solution to a pressing, immediate problem. The feedlot companies purchased scrubland adjoining the feedlot and the use of this as shelter has reduced losses. Five shelter sheds have also been erected.[23]

6.41 The Victorian and Tasmanian Departments of Agriculture provided the Committee with details of feedlot mortalities. These are shown in Table 6.3.

Table 6.3: Tasmania - Feedlot Mortalities

Date	Ship	No. of sheep	A	B	C
January 1983	Al Yasrah	79 693	10	-	11
March 1983	Om Alqora	37 319	7	-	2
April 1983	Danny F	33 000	8	23	12
January 1984	Mawashi Al Gasseem	90 356	32	130	75
May 1984	Fernanda F	85 745	21	97	23
January 1985	Mawashi Al Gasseem	90 507	33	32	32
March 1985	Al Qurain	50 057	12	32	25

A: Number of mortalities during transport to the feedlot.

B: Number of mortalities in the feedlot.

C: Number of mortalities during loading from feedlot to ship.

NOTE: Figures given for mortalities include sheep which are euthanased because of serious transport injury or serious illness.

Source : Tasmanian Department of Agriculture

Table 6.4: Victoria: Feedlot Mortalities

Date of Departure	Vessel	Number Loaded (Portland)	Feedlot Mort-alities	Rejects by D of A	Prepar-ation 'losses' %
28/10/82	Al Shuwaikh	100 000	100	679	0.8
7/11/82	Al Qurain	100 000	180	690	0.9
25/11/82	Al Yasrah	90 000	315	515	0.9
11/12/82	Al Shuwaikh	110 000	105	472	0.5
24/12/82	Al Qurain	111 000	285	531	0.7
14/1/83	Al Yasrah	21 750	40	316	1.6
23/1/83	Al Shuwaikh	120 000	118	641	0.6
7/3/83	Al Shuwaikh	123 000	366	1302	1.3
27/3/83	Al Qurain	69 000	15 000	3189	20.8
19/4/83	Al Shuwaikh	126 000	1439	2250	2.9
20/5/83	Al Yasrah	98 000	1700	4219	6.0
16/6/83	Al Qurain	118 000	1770	5130	4.8
16/7/83	Al Shuwaikh	87 000	801	1049	2.0
7/8/83	Al Yasrah	94 500	230	2312	2.6
13/9/83	Al Qurain	88 500	438	1057	1.6
4/11/83	Al Yasrah	103 000	332	722	1.0
23/11/83	Al Shuwaikh	119 000	1718	1398	2.6
9/12/83	Al Qurain	110 000	270	996	1.1
29/12/83	Al Yasrah	99 000	127	618	0.7
15/1/84	Al Shuwaikh	121 000	100	715	0.7
1/2/84	Al Qurain	88 000(P)	42	666	0.8
21/2/84	Al Yasrah	60 000(P)	62	366	0.7
11/3/84	Al Shuwaikh	122 000	102	633	0.6
29/3/84	Al Qurain	112 000	306	900	1.0
3/5/84	Al Shuwaikh	124 000	102	973	0.8
17/5/84	Al Qurain	64 000(P)	64	305	0.6
7/6/84	Al Yasrah	104 000	100	440	0.5
19/6/84	Al Shuwaikh	57 000(P)	38	194	0.4
4/7/84	Al Khaleej	36 000	116	254	1.0
21/7/84	Al Yasrah	106 000	164	994	1.0

(P) denotes part-loading at Portland.

Source : Victorian Department of Agriculture

6.42 At Portland, the danger to the welfare of the sheep is wind, rain and cold. In other feedlots there is the problem of heat in summer. One solution to the maintenance of a satisfactory environment under all weather conditions has been the intensive shedding of sheep. The Siba complex at Perth has a

capacity approaching 80 000 sheep. Each shed houses 6000 sheep and provides all food and water within a completely enclosed environment. Dr Batey testified that those sheds did experience lower mortalities but this could also be explained by the use of young sheep.[24]

6.43 Feedlots are used to rest sheep after transport to the point of assembly and prior to the rigours of shipboard conditions. At the same time, sheep are adapted to a new feed regime. The value of feedlotting sheep is wasted if sheep are not protected from the stress of adverse weather conditions. Adequate protection from extremes of weather conditions must be supplied to the sheep in feedlots. The nature of that shelter will vary from one feedlot to another depending on the situation of each and the varying weather conditions to which each is subject.

6.44 The Committee RECOMMENDS that adequate shelter be provided to sheep in the feedlots.

Feedlot Management

6.45 The health and welfare of sheep in export feedlots are dependent, not only upon feedlot facilities, but also upon the quality of feedlot management. Good management will make a feedlot with poor facilities work reasonably well but, conversely, a well designed feedlot with incompetent management may work quite inefficiently.[25]

6.46 Responsibility for the welfare of the sheep in the feedlot rests with the feedlot management.[26] It was alleged from a number of sources that in some feedlots welfare matters were subordinated to other considerations. The main problem has been that no person, with either the authority or influence within the company, has been designated to oversight animal welfare from feedlot to loading onboard the carrier.

6.47 It was suggested by the ALTV that this task should be done by a company veterinarian. They argued that company veterinarians are aware of local problems and have enough influence or authority to take action in the interests of animal health and welfare.[27] The AVA has commented that situations occur where government veterinarians report a malpractice to a senior person in the shipping company and can only request that it be stopped. The AVA believes that the veterinarian should be given the necessary authority to stop that malpractice.[28]

6.48 There has been a reluctance to innovate in animal welfare and management practices because failure might give a commercial advantage to competitors. Where innovation has occurred, it has been on a trial and error, rather than on a scientific, basis. The ALEA acknowledged this,[29] but added that 'over the last three to four years, conditions have changed quite dramatically to the point where there is an increased interest in pure scientific research in areas within the trade'.[30] The majority of that research has been done within the company itself, and not on a co-ordinated industry basis.[31]

6.49 A major research project funded by the AMRC will examine the scale of feedlot mortalities and its causes.[32]

6.50 The Western Australian Government estimated feedlot mortalities at one per cent but this figure has not been confirmed.[33] The Victorian Government and the ALEA supplied details of losses at the Kobo feedlot, Portland, from October 1982 to July 1984. Mortalities were 0.92 per cent and rejects were 1.19 per cent giving total 'losses' of 2.11 per cent.[34]

6.51 The Committee RECOMMENDS that details of sheep mortalities sustained during the period of feedlotting prior to export be forwarded to the AAHQS for collation and analysis.

Industry Feedlot Statistics

6.52 Statistics of feedlot operations, including mortalities, rejects, live weights, and age groups are kept within individual companies but are not forwarded to a central body from which industry statistics can be compiled. The ALEA acknowledged the need for compiling such statistics provided that they were used for the benefit of the industry.[35] The ALEA indicated that the AAHQS would be an appropriate body to undertake such a task.

6.53 Statistics of this part of the export operation need to be added to statistics of preceding and succeeding stages, to provide a basis for research into causes of death and other areas of concern.

On-Farm Feedlots and Specialisation

6.54 There is evidence that specialisation of sheep production for the live export trade has occurred, especially in Western Australia.[36] It is, however, difficult to estimate the number of enterprises specialising in this way.

6.55 There is also evidence of the lot feeding of wethers, including wether weaners for the export trade.[37] This latter practice is not very extensive. It is not practised, according to the ACLA, in NSW. However, in Victoria there have been some experiments in preparing sheep for the trade but these have not proved to be viable.[38]

6.56 The Committee RECOMMENDS that the AAHQS, in consultation with the State Departments of Agriculture and the ALEA, draw up national standards for export feedlots.

6.57 The Committee further RECOMMENDS that the State Governments license export feedlots based on the proposed national standards and, should a feedlot fail to observe these standards, the licence for that feedlot be revoked, suspended or not renewed, as appropriate.