

CATTLE STANDARDS AND GUIDELINES – BEEF FEEDLOTS

DISCUSSION PAPER

Prepared by the Cattle Standards and Guidelines Writing Group, February 2013

A beef cattle feedlot is a confined yard area with watering and feeding facilities where cattle are completely hand or mechanically fed for the purpose of beef production. Further details are contained in Appendix 1.

ISSUES

This paper reviews a number of specific welfare issues of beef feedlots. Confinement of cattle for show or breeding purposes is not covered in this paper.

The issues addressed by this paper in four sections are:

- 1) Stocking density
- 2) Feed and water provision
- 3) Excessive heat load management
- 4) Other proposed beef feedlot specific standards and guidelines.

The paper is divided into four sections on this basis.

The overall **objective** is:

'Cattle in feedlots are managed in a way that minimises the risk to cattle welfare'.

1. STOCKING DENSITY

RATIONALE

The variable nature of the Australian climate means that the feeding of cattle for production is often required to meet market quality and supply requirements. Cattle on pasture may be supplementary fed; however in some circumstances it can be a more appropriate strategy to place cattle within a beef feedlot. Indoor feedlots are not part of the system in Australia.

The confinement of cattle is fundamental for the operation of beef feedlots for the following reasons.

- The confinement of animals within feeding pens improves control of the environmental impacts of cattle. Feedlots are constructed to allow efficient collection of manure and effluent and provide protection to surrounding land, surface and ground water resources.
- The confinement of cattle permits the close health inspection of animals on a regular basis, and the removal of ill or injured cattle for treatment.
- The confinement of cattle allows the efficient provision of feed and water.

RECOMMENDATIONS

The writing group considered current scientific knowledge and practice and agreed that a minimum stocking density of 9m² per Standard Cattle Unit (SCU) is an appropriate allowance.

STANDARDS AND GUIDELINES PROPOSAL

OBJECTIVE

Confined cattle are provided sufficient space to satisfy their physiological and behavioural needs.

STANDARDS

S10.1 A person in charge must ensure a minimum area of 9m² per Standard Cattle Unit for cattle held in external pens.

Note: Indoor feedlot systems are not used in Australia.

GUIDELINES

None at present

ANIMAL HEALTH AND WELFARE CONSIDERATIONS

Space Allowance

MLA/ALFA commissioned an independent review (Ferguson, Colditz and Fisher 2008) of the science underpinning the current feedlot code and some of the sections of the review have been included in the following discussions on pen and trough space allowance.

It should be noted that most commercial feedlots in Australia are licensed to operate at space allowances between 12m² and 20m² per SCU (Reference Manual for the Establishment of Beef Cattle Feedlots in Queensland 2000).

Most research on cattle space allowance relates to indoor housing facilities. However, Fell and Wilson (1998) compared the behavioural and physiological responses in cattle on pasture and in a conventional feedlot

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environment (external pens) at two different stocking densities; 12m² (normal) and 6m² (stressed). In addition to a reduced space allowance, the stressed feedlot treatment also included a reduced feed bunk space allowance and the feedlot pad was continually kept wet. An experimental feedlot was used and the cattle were fed over a period of 42 days.

The combination of these resource constraints in the stressed feedlot treatment would have been expected to elicit a significant difference. However, Fell and Wilson (1998) and Wilson et al (2002) found no differences in average daily gain, behaviour (lying time and social interactions) or any of the physiological measures between the two feedlot treatments. The authors concluded that the cattle had successfully adapted to the feedlot environments, despite the resource constraints, but they also expressed some caution about extrapolating the results to an industry feedlot context.

Indoor Housing Facilities

It is believed that there are only two indoor housing facilities in Australia¹ and they have been used only sporadically since their construction. It also is unlikely that any new feedlot indoor housing facilities will be constructed.

For these reasons it is proposed that references to construction and use of cattle indoor housing facilities be excluded from the new Cattle Standards and Guidelines.

REVIEW OF NATIONAL POLICIES AND POSITIONS

The current Australian **Model Code of Practice for Cattle** 2nd edition (2004) states that:

2.2.6.4 The stocking density of pens or yards must take into account age, size, behavioural needs, movement and feeding patterns of cattle. In any event, an absolute minimum space requirement of 9m² must be provided.

The **Australian Veterinary Association (AVA)** 8.8 Beef and sheep feedlots policy states:

“Beef cattle and sheep/lamb feedlots must be operated in compliance with the Primary Industries Standing Committee (PISC) Model Code of Practice for the Welfare of Animals: Cattle, Second Edition, and the Model Code of Practice for the Welfare of Animals: The Sheep, Second Edition.”

The AVA also supports a guideline that says: *“For beef cattle feedlots, the standards set out in the National Feedlot Accreditation Scheme of the Australian Lot Feeders’ Association (ALFA) should be followed.”*

RSPCA Australia does not have a specific policy on beef cattle feedlot stocking density, however RSPCA Policy B2 Intensive farming practices (2008) states that:

2.7 Feedlots

“2.7.1 Feedlots are yarded areas in which cattle and sheep are held in close confinement and where food and water must be supplied mechanically or by hand for the duration of the confinement.”

¹ These facilities represent less than 1% of domestic feedlot capacity.

2.7.2 RSPCA Australia advocates that the establishment and continued operation of feedlots be regulated, independently audited and, at the very minimum, operated in accordance with the relevant Standard/Model Code of Practice for the Welfare of Animals. The feedlot must provide for:

- The proper construction and maintenance of facilities to high standards and the employment of full time, well trained and sufficient personnel.
- The correct siting of the feedlot to meet the needs of the confined animals for proper shelter from the weather, a well drained, hard standing surface and a constant supply of suitable and sufficient food and water.
- The full-time employment of veterinarians experienced with feedlot animals whose instructions regarding the maintenance of animal health and welfare must be followed.
- Sick animals to be quickly identified and isolated in proper sick bay facilities with appropriate treatment instituted.
- Special facilities for the proper care and handling of offspring born to confined mothers.
- Constant monitoring of food quality, palatability, and disease processes.

2.7.3 RSPCA Australia supports the adoption of strategies to prevent heat stress in feedlot animals during periods of the year that present a risk of such a condition occurring”.

The **National Feedlot Accreditation Scheme (NFAS) Standard** (2002) states:

2.2 Stocking Density

To ensure the welfare and environmental objectives are maintained at the Feedlot, the Feedlot is required to establish and implement procedures to meet stocking density requirements of NFAS. To comply with the stocking density requirements, the Feedlot must ensure that:

- 2.2.1 *Stocking density is managed within the range of 9 to 25 square meters per head or per SCU, whichever is applicable in their State. Exemptions may be granted by AUS-MEAT when the Feedlot has obtained approval in writing from the relevant State authority allowing it to operate outside 9 to 25 square meters per head or per SCU stocking density (See the SCU conversion table at Appendix 6).*
- 2.2.2 *A minimum stocking density of 2.5 square meters per head or per SCU must be provided for shedded cattle.*

REVIEW OF INTERNATIONAL POLICIES AND POSITIONS

This section is included to provide a brief international context, while acknowledging that Australia’s cattle production systems may vary from production systems, cattle breeds and climatic conditions in other countries. Comparable beef cattle feedlot industries operate in the United States of America and Canada.

- *No standards or guidelines regarding feedlot stocking densities for the **United States** could be identified.*
- *Within an article contributed by Temple Grandin to an industry text (Cattle Feeding: A Guide to Management 1996), it is recommended that a space requirement of 150 ft² – 800 ft² (14m² – 75m²) for all classes of cattle is provided.*

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- The **Canadian Recommended Code of Practice for the Care and Handling of Farm Animals – Beef Cattle (1991)** suggests:

Type of floor	Calves 225 kg (500 lb)		Yearlings		Cows, bred heifers, or heavy feeders	
	m ²	(sq ft)	m ²	(sq ft)	m ²	(sq ft)
	Feedlot without shed					
Unpaved ground*	14	(155)	22	(250)	27	(300)
Paved ground**	4	(45)	5	(55)	8	(90)
Feedlot with shed						
Unpaved ground*	14	(155)	22	(250)	27	(300)
Paved ground**	2.3	(25)	3	(30)	4.5	(50)
Shed area***	1.4	(15)	1.8	(20)	2.7	(30)
Slatted floors	1.5	(17)	2	(22)	—	—

* Unpaved lot slopes 4–8%.
 ** Paved lot slopes 2–4%.
 *** Shed minimum clear height 2.4 m (8 ft) for calves; 3.0 m (10 ft) for yearlings and cows.
 Source: F. Hurnik.

It is understood that the suggested Canadian stocking densities take into account space provision for snow drifts against wind breaks/walls in winter, and the extremely wet, boggy pen conditions experienced in spring.

2. FEED AND WATER PROVISION

RATIONALE

Cattle are confined within feedlots for a number of reasons including:

- *Control of production to meet market supply requirements*
- *Control of production to meet market quality requirements*
- *Emergency/drought feeding.*

These varying reasons for the feeding cattle within feedlots influence the quantity and composition of nutrition provided to the animals.

Cattle held within a beef feedlot are provided with their entire dietary and water requirements by the feedlot operator. The total provision of feed and water provides a high level of control of the production of feedlot cattle; it also carries a high level of responsibility for feedlot operators to ensure the water and nutritional requirements of cattle within their care are met.

RECOMMENDATIONS

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The writing group has proposed a number of universal and feedlot –specific standards to ensure feedlot cattle are provided with sufficient feed and water of an appropriate quality to ensure their health and maintenance.

STANDARDS AND GUIDELINES PROPOSAL

OBJECTIVE

Cattle have access to feed and water to minimise the risk to their welfare.

STANDARDS

S10.2 A person in charge must ensure that the diet composition and quantities fed are recorded, and that records are maintained for the duration of the feeding period of each group of cattle.

S10.3 A person in charge must ensure feed is available daily to cattle in the beef feedlot.

GUIDELINES

G.1 Stale or spoiled feed should be removed daily.

G.2 Changes in diet should be managed to minimise digestive upset to cattle.

G.3 Daily feed consumption should be monitored.

G.4 Water troughs should be inspected daily and cleaned regularly.

G.5 Shy feeders should be removed to pens with a lower stocking density and / or fed a higher roughage diet.

ANIMAL HEALTH AND WELFARE CONSIDERATIONS

In commercial Australian feedlots, only a proportion of cattle can access the feed bunk when the pen is fully stocked. Feeding management practices ensure that sufficient feed is delivered for all animals for the day to maximise feed intake. It is for this reason that the writing group has recommended that a standard requiring the recording of diet composition and quantity fed is appropriate to ensure compliance with the objective rather than the previous recommendation of a minimum feed trough space per animal.

As a general industry practice in Australia, feed is delivered to each pen a number of times each day. At a specific time (usually mid-morning), feed troughs are inspected, and the budgeted feed allocation for the following day is increased or decreased based on the quantity to feed remaining in the trough. This process is called “bunk calling”.

Cattle have access to feed for almost all of the day and night, with some troughs only emptying around the time of the feedlot allocation inspection. It is important that the quantity of feed is allowed to reduce daily to allow identification of spoiled feed or foreign objects in the trough.

Some research into feed trough space allowances has been done. Much of this work was conducted into restricted feeding, dissimilar to Australian commercial feedlot practice.

In a feedlot study, Zinn (1989) evaluated different feed bunk space allowances from 150 – 600 mm/animal in restricted fed crossbred steers (234 kg) fed for 76 days. He reported no effect on average daily gain, feed intake or feed conversion efficiency. In a more recent study by Gottardo et al. (2004), bunk space allowance (600 versus 800 mm/animal) was not found to influence daily gain or feed intake in housed bulls.

The current Australian **Model Code of Practice for Cattle** 2nd edition (2004) recommends a minimum trough space allowance as a means to ensuring equitable access to feed. However, in practice it is the feeding management procedures employed by feedlot operations which affect animal access to feed.

REVIEW OF NATIONAL POLICIES AND POSITIONS

The current Australian **Model Code of Practice for Cattle** 2nd edition (2004) states that:

2.2.6.7 Water troughs should be large enough and designed in such a way that the cattle have easy access. Feed troughs should be designed with the same basic parameters in mind allowing sufficient space for all cattle to eat without competition. Actual space needed, will vary with rations, cattle size and feeding frequency. A minimum space of 150mm/head is recommended for young cattle and 180mm/head for steers and bullocks.

The **Australian Veterinary Association (AVA)** 8.8 Beef and sheep feedlots policy states:

“Beef cattle and sheep/lamb feedlots must be operated in compliance with the Primary Industries Standing Committee (PISC) Model Code of Practice for the Welfare of Animals: Cattle, Second Edition, and the Model Code of Practice for the Welfare of Animals: The Sheep, Second Edition.”

These requirements have been extracted from the Model Code of Practice for the Welfare of Animals: Cattle.

Feed troughs

- *Yearlings: 250-300 mm/head*
- *15 months: 2 years 300-380 mm/head*
- *Bullocks: 380-460 mm/head*

Self feeders

- *75-100 mm/head minimum (ie 1 metre/10-12 head)*
- *Recommended space: 1 metre/ 6 head*

Other relevant AVA Policy (8.11 - Feed requirements guidelines) states;

These guidelines have been extracted from the Model Code of Practice for the Welfare of Animals: Cattle.

General statement

Cattle should have their appetites satisfied, which requires about 2.5% of their bodyweight per day on a dry matter basis. Dry feeds normally contain about 10% moisture. Feed mixtures should contain sufficient digestible energy, protein and minerals to allow for the healthy growth of different classes of stock. Requirements vary with age, growth rate, pregnancy and lactation, so the quality and digestibility of the ration must be adjusted to supply

the needs of the animals within the limits of appetite. Diets should be formulated with reference to tables of nutritional data on feeds and tables showing the requirements of different classes of livestock.

Advice should be sought from various publications on the subject, from State/Territory Departments of Agriculture or Primary Industry advisers or private consultants. Computer programs are available to assist in feed formulation.

The most important feed characteristic is its energy content, which must be matched to the needs of the particular class of animals. Various units are used to measure digestible energy values in formulating feeds, eg mega joules (MJ) of metabolisable (useable) energy (ME) per kg of feed.

The **RSPCA policy B2** Intensive farming practices states (2008):

2.7.1 Feedlots are yarded areas in which cattle and sheep are held in close confinement and where food and water must be supplied mechanically or by hand for the duration of the confinement.

The **National Feedlot Accreditation Scheme (NFAS) Standard** (2002) states:

9.2.2 Feed Commodity Control

Records of stock feed purchased and used are maintained, including the following information:

- *Date received*
- *Feedstuff description*
- *Origin*
- *Analysis performed (if applicable)*
- *Lots fed*
- *Period of feeding.*

REVIEW OF INTERNATIONAL POLICIES AND POSITIONS

Comparable beef cattle feedlot industries operate in the United States of America and Canada.

- *No standards or guidelines regarding feed and water trough space allowance for the **United States** could be identified.*
- *The **Canadian** Recommended Code of Practice for the Care and Handling of Farm Animals – Beef Cattle (1991) states:*

Section 3. Feed and water

3.1 General

- 3.1.1 Diets for all classes of beef cattle should be formulated in accordance with the recommendations of the National Research Council (US) subcommittee on beef cattle nutrition in *Nutrient requirements of beef cattle*. In formulating diets producers should consider the environmental conditions, breed or breed cross, age, body condition, intake levels, and reproductive status of the animals. Additional dietary energy is needed in the last third of pregnancy and for about 2 months following calving.
- 3.1.2 When animals are fed high-energy diets, increased and regular attention should be paid to avoid nutrition-related health problems, such as grain overload and bloat. Abrupt changes in diet should be avoided.
- 3.1.3 All feed components used in the diet must be good quality and free of spoilage that might be detrimental to the animal. Unusual feedstuffs may be incorporated into the diet only when research has shown that they have no adverse effect on the animal's health or on the quality of the final product.
- 3.1.4 All feed and water additives must be approved by the appropriate government agencies and be administered accordingly. If used, growth promotants must be government approved and must be administered in accordance with label recommendations.
- 3.1.5 Cattle should have access to fresh clean water at all times. The average daily demand for cattle weighing 500 kg (1100 lb) is about 45 L (10 gal) per animal and increases in hot weather up to 90 L (20 gal) per animal.
- 3.1.6 Adequate feed must be provided regularly. Feed interruption longer than 24 h should be avoided.
- 3.1.7 When cattle are fed in groups, all animals must have access to feed. Whenever restricted feeding is practiced, all animals should have simultaneous access to the feeders so that they may eat at the same time.

3. EXCESSIVE HEAT LOAD MANAGEMENT

RATIONALE

Excessive heat load (EHL) in feedlot cattle during the summer months can result in significant animal welfare considerations in any part of Australia where feedlots are sited. High body heat loads can develop in feedlot cattle when a combination of local environmental conditions and animal factors exceed the animal's ability to dissipate body heat.

The Australian feedlot industry has recognised this risk, and has worked with the RSPCA, the Australian Veterinary Association, Meat & Livestock Australia, researchers and government to develop a suite of management strategies to reduce the risk of EHL to animal health and welfare.

In 2007, standards addressing EHL management were introduced into the feedlot industry quality assurance scheme (the National Feedlot Accreditation Scheme – NFAS). The standards are science based, and were

developed utilising findings from an extensive heat load research and development program. Industry has contributed over \$2 million into EHL research and development over the last decade.

RECOMMENDATIONS

The writing group has considered industry quality assurance scheme standards and their appropriate adoption into the welfare standards or guidelines for cattle. The feedlot industry has recognised that the key to successful management of heat load in feedlot cattle is to adopt a proactive management approach before the need to implement a contingency Excessive Heat Load Action Plan.

STANDARDS AND GUIDELINES PROPOSAL

OBJECTIVE

Excessive heat load is managed to reduce the welfare impacts on cattle.

STANDARDS

- S10.4 A person in charge must do a risk assessment each year for the heat load risk at the feedlot, and implement appropriate actions to manage ongoing heat load risk.
- S10.5 A person in charge must have a documented Excessive Heat Load Action Plan, and must implement appropriate actions in the event of a heat load emergency.

GUIDELINES

- G.6 Feedlot operators should manage heat load risk by observing the excessive heat load specific standards of the National Feedlot Accreditation Scheme.
- G.7 Heat load risk assessments should be documented and include:
- Site climatic factors for the feedlot location
 - Animal factors including genotype, coat colour, days on feed and health status
 - Management factors, which may include the provision of shade, provision of additional water troughs, water temperature, ration type and manure management practices.
 - Each class of cattle at the feedlot.
- G.8 Feedlot operators should develop, document and implement routine management procedures to reduce the excessive heat load risks identified before they occur.

These proactive strategies should include:

- Identification of at-risk cattle source regions and groups of cattle
- Specific selection of cattle for summer feeding programs
- Establishment and maintenance of facilities such as shade, sprinklers, weather stations and emergency watering troughs

- Implementation of summer diet and feeding programs
- Implementation of strategic pen cleaning programs
- Excessive heat load training and management of personnel
- Implementation of monitoring programs of weather, cattle behaviour, heat load index (HLI) and accumulated heat load units (AHLU) Index.

G.9 The Excessive Heat Load Action Plan should include the following minimum information / actions:

- Name of the feedlot
- Name and contact details of the person responsible at the feedlot
- Name and contact details of the consulting veterinarian and nutritionist
- Allocation of responsibilities to relevant personnel
- Threshold for activation of the Excessive Heat Load Action Plan
- Actions to manage the excessive heat load event and the welfare of animals at that time which may include:
 - Monitoring of cattle, weather conditions, pen conditions, water and feed
 - Operational practices to be implemented for the management of cattle, pens, feed, water and personnel.

ANIMAL HEALTH AND WELFARE CONSIDERATIONS

In Australia, persistent hot or humid weather conditions can affect the welfare of feedlot cattle. In extreme cases, a significant number of cattle have died as a result of excessive heat load (EHL).

EHL occurs when a combination of local environmental conditions and animal factors lead to an increase in body heat load beyond the animal's ability to cope. With severe or prolonged elevations in body temperature above acceptable levels, body tissues and organs can be damaged and the animal may die.

The main source of body heat accumulation in cattle is metabolic heat. Cattle also can accumulate heat from solar radiation, reflected radiation from the feedlot pad and other physical structures in the pen, and from the air itself, if air temperature is higher than the animal's body temperature.

The ability to dissipate heat can be reduced or prevented by environmental factors. A combination of two or more of these environmental factors has been present in recorded instances where EHL has caused cattle deaths in Australia:

- Recent rainfall
- A high ongoing minimum and maximum ambient temperature
- A high ongoing relative humidity
- An absence of cloud cover with a high solar radiation level
- Minimal air movement over an extended period (4–5 days)
- A sudden change to adverse climatic conditions.

The Australian feedlot industry has developed management strategies to address the EHL issue. These strategies are either proactive or reactive.

Proactive strategies include:

- Identification of at-risk cattle source regions and groups of cattle
- Specific selection of cattle for summer feeding programs
- Establishment and maintenance of facilities such as shade, sprinklers, weather stations and emergency watering troughs
- Implementation of summer diet and feeding programs
- Implementation of strategic pen cleaning programs
- EHL training and management of personnel
- Implementation of monitoring programs of weather, animal behaviour, Heat Load Index (HLI) and Accumulated Heat Load Units (AHLU) Index.

Reactive strategies include:

- Installation of extra temporary water troughs
- Introduction of a heat load feeding strategy and diet
- Cessation of animal movements, handling and any other practices that may increase cattle stress
- Use of sprinklers if humidity is low
- Strategic cleaning of high manure deposition areas.

The key to successful management of heat load in feedlot cattle is to adopt a proactive management approach. In just two summers, more than 90 percent of feedlots accredited under NFAS have developed management plans to offset excessive heat load events. The accumulated benefit of the industry's initiatives in this area has seen a significant decline in the number of heat load episodes taking place within the industry each summer.

REVIEW OF NATIONAL POLICIES AND POSITIONS

The current Australian **Model Code of Practice for Cattle** 2nd edition (2004) states that:

2.2.7 Protection from climatic extremes

2.2.7.1 Cattle should be protected from extreme adverse weather conditions causing cold stress or heat stress, as far as practicable. This is also important where cattle are moved from one climatic zone to a feedlot situation is a significantly different zone.

2.2.7.2 Feedlot management and staff must be aware of the climatic conditions and the clinical signs in cattle that are associated with heat stress. At the first instance of such climatic conditions and clinical signs, remedial action as stated in the individual feedlot's Animal Care Statement shall be implemented.

The provision of shed or alternative means of cooling, such as misters or sprays, may be required and should be considered particularly where:

- a) *the duration of prolonged high temperature and high humidity with decreased air movement is likely; or*
- b) *the temperature exceeds 30°C for an annual period of 750 hours – see the Bureau of Meteorology Temperature Map in Appendix 2.2A.1 of the National Feedlot Guidelines.*

Movement of cattle should not be attempted during extreme heat conditions.

The **Australian Veterinary Association (AVA)** 8.8 Beef and sheep feedlots policy states:

“Beef cattle and sheep/lamb feedlots must be operated in compliance with the Primary Industries Standing Committee (PISC) Model Code of Practice for the Welfare of Animals: Cattle, Second Edition, and the Model Code of Practice for the Welfare of Animals: The Sheep, Second Edition.”

The **RSPCA policy** B2 Intensive farming practices states:

2.7.3 *RSPCA Australia supports the adoption of strategies to prevent heat stress in feedlot animals during periods of the year that present a risk of such a condition occurring.*

REVIEW OF INTERNATIONAL POLICIES AND POSITIONS

Comparable beef cattle feedlot industries operate in the United States of America and Canada.

- No standards or guidelines regarding excessive heat load for the **United States** could be identified. A number of heat stress forecast services exist, as well as producer extension programs and services such as the two examples given below.
- <http://www.ars.usda.gov/Main/docs.htm?docid=21306>
- <http://www.mesonet.org/index.php/agriculture/monitor>
- The **Canadian** Recommended Code of Practice for the Care and Handling of Farm Animals – Beef Cattle (1991) does not contain any reference to cattle heat stress.

4. OTHER BEEF FEEDLOT SPECIFIC STANDARDS & GUIDELINES

Note: that non-specific beef feedlot standards and guidelines, such as the provision of water, are also included in the general cattle standards and guidelines.

STANDARDS AND GUIDELINES PROPOSAL

OBJECTIVE

Cattle in feedlots are managed in a way that minimises the risk to cattle welfare.

STANDARDS

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- S10.6 A person in charge must have a documented contingency plan in case of failure of feed or water supply, and must implement appropriate actions in the event of feed or water supply failure.
- S10.7 A person in charge must have a documented contingency plan in case of an emergency animal disease, and must implement appropriate actions in the event of an emergency animal disease.
- S10.8 A person in charge must ensure the daily inspection of all cattle within the feedlot.
- S10.9 A person in charge must ensure the appropriate management of calves born in the feed yards, to ensure the welfare of the calves.
- S10.10 A person in charge must ensure the cleaning of feed yards and maintenance of surfaces on a planned basis, to ensure that pen surfaces can drain freely.

GUIDELINES

- G.10 Feedlots should be part of a third party, audited quality-assurance system.
- G.11 Feedlot operators should document aspects of a beef feedlot management plan that is not already required to be documented in the standards including:
- Frequency of cleaning
 - Feed yards
 - Water troughs
 - Feed troughs
 - Drains, sedimentation and holding ponds
 - Details of the records maintained and practices employed to manage the health of cattle held within the feedlot, including:
 - Receival and induction
 - Monitoring / inspection
 - Disease or injury diagnosis and all treatments of cattle, including the method and records used to ensure the observance of withholding periods and / or export slaughter intervals for any chemical used
 - Mortality and post mortems
 - Biosecurity / disease risk mitigation measures.

Note: The requirements are fulfilled by the National Feedlot Accreditation Scheme.

- G.12 All cattle should be observed standing and moving during daily inspections.
- G.13 Bulling behaviour should be managed by segregation.
- G.14 Cattle should be subjected to programs that improve their capacity to adapt before entering the feedlot.
- G.15 New arrivals to a feedlot should be closely inspected for injury and illness.

- G.16 Horned cattle in the feedlot should only be tipped if horns are dangerous.
- G.17 Heavily pregnant cattle should be transferred to a pen with lower stocking density or to a paddock before calving.
- G.18 Calves born in feed yards should be segregated with their mothers or humanely killed.
- G.19 Feed yard facilities should comply with the requirements of the National Beef Cattle Feedlot Environmental Code of Practice, 2nd edition, as amended or superseded.

DEFINITIONS

beef feedlot	A confined yard area with watering and feeding facilities where cattle are completely hand or mechanically fed for the purpose of beef production. <i>Other cattle yards, lairage, saleyards, dairy feedlots, trucking yards and live export depots are not beef feedlots for the purpose of this document.</i>
Excessive Heat Load Action Plan (EHLAP)	A written contingency plan to address excessive heat load conditions for a feedlot operation. <i>Note: These are audited every year for NFAS feedlots.</i>
heat stress	When the response by animals to hot conditions above their thermo-neutral limit (heat load) exceeds the ability of their behavioural, physiological or psychological coping mechanisms.
inspect	The visual check of the health and welfare of cattle on an individual or herd basis.
National Feedlot Accreditation Scheme (NFAS)	The National Feedlot Accreditation Scheme (NFAS). NFAS is owned by the Australian Lot Feeding Industry through AUS-MEAT Limited.
risk assessment	A logical and systematic process of establishing the context, identifying, analysing, evaluating, developing treatment strategies for, documenting and communicating risks associated with an activity, function or process. For the feedlot operation as described by the NFAS.
risk management	The term applied to a logical and systematic process of conducting a risk assessment, treating, monitoring and communicating risks associated with any activity, function or process in a way that will enable organisations to minimise losses and maximise opportunities.
Standard Cattle Unit (SCU)	A Standard Cattle Unit is equivalent to an animal with a live-weight of 600kg.

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- Zinn RA 1989. Manger space requirements for limit-fed feedlot steers. J. Anim. Sci. 67:853-857.

		units i.e. \$1,575 > 60,000 tonnes 50 units i.e. \$5,250	
Further information	http://www.legislation.qld.gov.au/LEGISLTN/SLS/2008/08SL370.pdf http://www.legislation.qld.gov.au/LEGISLTN/SLS/2008/08SL370.pdf	http://www.environment.nsw.gov.au/licensing/licenceguide.htm	http://www.epa.vic.gov.au/bus/licences/licences.asp http://www.austlii.edu.au/au/legis/vic/nun_reg/eppaer2007n77o2007788/ http://www.austlii.edu.au/au/legis/vic/nun_reg/eppaer2007n77o2007788/
	Western Australia	South Australia	
Relevant legislation	<i>Environmental Protection Act 1986</i> <i>Environmental Protection Regulation 1987</i>	<i>Environmental Protection Act 1993</i> <i>Environmental Protection Regulation 2009</i>	
Relevant authority	Department of Environment and Conservation	Environment Protection Authority	
License threshold	>500 head capacity	Under Schedule 1 of the Act feedlots are defined as an activity of major environmental significance and as such need a license if they: <ul style="list-style-type: none"> - feed an average of 500 or more cattle per day over any period of 12 months; or - feed an average of 200 or more cattle per day over any period of 12 months where the feedlot is situated in a water protection area. 	
Length	Feedlots with a capacity of 500 head or more require a Works Approval and either License or Registration. Works Approvals specify construction conditions and are usually issued for a three year period. Works Approval and License are required when the feedlot: <ul style="list-style-type: none"> - has a capacity of over 500 head; AND - has a stocking rate over 50 head per hectare (200 sq m per animal); AND - is less than 100 meters from a water body. A License is generally issued for a period of one to five years. Works Approval and Registration are required when the feedlot: <ul style="list-style-type: none"> - has a capacity of over 500 head; AND - has a stocking rate over 50 head per hectare (200 sq m per animal); AND - is more than 100 meters from a water body. A Registration lasts for the life of the operation.	Licenses operate in perpetuity. A development planning approval is also required. The development approval operates in perpetuity.	
Other license conditions	Feedlots with a Registration are required to comply with industry guidelines. Feedlots with a License are required to comply with specified license conditions and DEC may amend the conditions of the license with notice. Annual fees and reporting requirements apply (i.e. soil/ water monitoring and manure/ effluent disposal etc). Physical audits of registered feedlots are based on a risk management approach.	Annual fees and reporting and monitoring requirements may apply (i.e. soil/ water monitoring and manure/ effluent disposal etc)	
License fees	An annual fee is required. Determined by multiplying the aggregate fee unit score by \$15/ unit. Registration: (all sizes) Fee units 24 i.e.	An annual fee is levied. Determined by adding a flat minimum fee of \$52.50 plus the environment management fee, calculated by multiplying the number of fee units by \$551/ unit. All feedlots that meet above criteria accrue 4 fee units (i.e. \$2,204) in environment management fees.	

	<p>\$360 License: (a) not more than 2000 head 25 i.e. \$375 (b) more than 2000 to 5000 head 50 i.e. \$750 (c) more than 5000 head 100 i.e. \$1,500</p>	
Further information	http://www.environment.wa.gov.au	http://www.epa.sa.gov/documents