# CATTLE

Bos Taurus, Bos Indicus

## varietal range

Although many different and distinct breeds exist, cattle are usually divided into two groups:

* Dairy cattle, used for milk production, e.g.: Holstein, Jersey and Illawara Shorthorn
* Beef cattle, used for meat production, e.g.: Hereford, Angus and Murray Grey

Cattle may also be divided into Bos indicus (tropical cattle breeds) and Bos taurus varieties (temperate cattle breeds).

## PHYSICAL CHARACTERISTICS

* **Size:** varies greatly between breeds – mature height up to 1500mm at the shoulder, or taller for some large breeds
* **Weight**: varies greatly with breed and stage of growth – from 400kg to 800kg
* **Age at adult size:** varies between breeds – between 2 and 4 years
* **Weight at birth:** small breeds 15kg – 20kg, large breeds 35kg – 40+kg
* **Gestation period:** average 282 days, range 275-290 days
* **Number of offspring:** normally one per gestation, up to one gestation per year
* **Weaning age:** 6-8 months
* **Range of breeding ages:** mating begins from 15-24 months, reproductive life 8-10 years
* **Body temperature:** 38.6C, range 37C – 39C
* **Heart rate:** 40 – 80 beats/minute
* **Respiration rate:** 20 – 40 breaths/minute.

## ENVIRONMENT

Cattle may be kept in extensive situations in paddocks or in more intensive situations, such as feedlots. A feedlot is a confined yard area with watering and feeding facilities where cattle are held and completely hand or mechanically fed for the purpose of production.

Feelot cattle are fed a defined ration for an extended period of time, generally without access to pasture or grazing crop. They perform well in open pastures; plenty of clean fresh water must be made available, as well as shelter from the wind, rain and sun. The minimum space required in extensive situations is one hectare per head, assuming pasture is balanced and well maintained.

Cattle kept in intensive situations should be exercised daily. Heat stress can be a concern. In stalls, adequate ventilation must be provided; in feedlots, access to adequate shade, such as good tree cover and/or artificial shelter, is necessary. At least 2.8m2/head of shade should be provided.

Insufficient shade/shelter may cause cattle to crowd together under the shade and restrict heat loss. Stocking densities should not exceed those specified in the Code of Practice for the Welfare of Cattle (i.e. 9 metres squared per head for feedlot animals or 2.5 metres squared per head for shedded cattle). If cattle are kept indoors, the area should be well lit. Allow free air movement in stalls, without creating draughts. Suitable materials for stalls include straw, sand and sawdust. Flooring material and maintenance is very important: floors should be non-slip (not concrete), provide for adequate drainage and should be of a material that dries quickly after rainfall. Stalls should be kept clean and tidy.

Feedlot operations must comply with conditions specified in:

* Model Code of Practice for the Welfare of Animals, Cattle, 2nd Edition, 2004, PISC Report 85, CSIRO
* Model Code of Practice for the Welfare of Animals, Land Transport of Cattle, 2002, SCARM Report 77, CSIRO
* National Guidelines for Beef Cattle Feedlots in Australia, 3rd Edition, SCARM

## FOOD AND WATER

Cattle are highly efficient in terms of digestion, and good-quality pasture comprises a balance of grasses and legumes. However, care must be taken when cattle are put on pastures with high legume content, as bloat can occur.

When hand-feeding cattle, the rule is to introduce new food types slowly and carefully. Do not feed excessive quantities of grains, feed plenty of high quality roughage and feed small amounts at frequent intervals. As a herd of cattle will have a well developed dominance hierarchy, trough dimensions should allow for all age groups to access feed with the minimum of competition.

Monitoring of live weight and condition scoring will indicate the adequacy or otherwise of the feed conditions.

Young calves are suckled or a milk replacement is used. For older cattle, grazing is the most economical means of feeding. Supplementary feeding with hay and concentrate mixes may be necessary. If the cattle are always grazed, veterinarians or the DEPI should be consulted to determine if there is a need for specific supplementation. Pasture and soil deficiencies will vary depending on the geographic location and climatic variations.

Food quantities vary with animals' weight, stages of growth and stages of production. As a guide, an average 450kg cows require one hectare of good-quality pasture. To hand feed the same cow requires approximately 10kg of concentrates, plus hay, each day.

For hand feeding, provide food twice daily for young calves and daily for other cattle. Food should be of high quality, fresh and provide complete nutrition for the stage of growth.

Newborn calves must get colostrum in the first 24 hours. This will be provided in the first milk of the cow if naturally mothered, but must be provided by the caregiver in handraised calves. Colostrum is available as a commercial preparation if required.

Fresh, clean, readily-accessible water supplies must also be provided.

As a guide to water requirements, a small cow requires 30L – 50L per day and more if she is lactating.

For cattle kept in intensive systems, feed bins should be off the ground and automatic waterers, which supply clean, fresh water at all times, installed and checked daily.

## handling

Cattle need to be handled calmly and with care to prevent distress and injury to the animals and the handlers. Training or habituating cattle to management procedures such as mustering and drafting is best commenced at time of weaning, and should be made as positive experience as possible to minimise aversive behaviour.

A good knowledge of the instinctive behaviour of cattle and an understanding of the way cattle respond to forced movement is essential to apply the techniques of 'natural stockmanship'.

Each animal (and each herd) will have a 'flight zone' which, when penetrated, causes the animal (or the herd as a collective) to move away. The size of this zone will depend on variables including the animal's breed, age and degree of prior handling. A good stock handler will learn when to penetrate this zone and when to retreat, so that cattle will move quietly in the desired direction with the minimum of stress.

The handler should also be aware that their position relative to the animal's shoulder will determine the direction of movement of that animal: this is referred to as their 'point of balance'. If the stockperson goes behind a line drawn through this point, the animal will move forward, if they go in front of it, the animal will back away.

If standing in front of the animal, the handler can deflect cattle movement by moving to either side of an imaginary line drawn through the length of the animal.

A set of solid yards, preferably including a race and crush or headbail, is necessary for adequate handling. Design of these facilities should allow for the natural (instinctive) behaviour of cattle to occur and preferably to aid in movement of animals through yards.

Cattle prods not be used. Cattle that are kept in schools should not require handling in this manner. Handling aids including drafting sticks and canes should be used only to extend the distance of control by the handler (by extending the length of the handler's arm) and not to physically harm the animal.

## NORMAL BEHAVIOUR

Cattle in the school or college situation should be docile, spending most of their time grazing or chewing the cud. They are social and will herd if kept in numbers, and will develop a well organised dominance hierarchy that is seen most obviously when they are moved and when hand feeding occurs. Each time a group of cattle is mixed, the hierarchy will have to be re-established and this should be kept in mind when mustering and managing the herd.

Cattle have panoramic vision of 330 degrees and binocular vision of 25-50 degrees, which facilitates predator awareness and must be considered when handling animals. When threatened, their first response will be to remain immobile, if frightened they will attempt to escape.

Cattle that show difficult temperaments should be removed from the herd and not used in the school situation. Particular care should be taken when handling bulls and cows with young calves as they tend to have a high level of arousal and may be unpredictable.

## MOVEMENT

There are a number of restrictions relating to the movement of cattle. To ensure that the appropriate legislation is followed, contact the Department of Environment and Primary Industries.

## DISEASE PREVENTION

Disease control methods and internal and external parasite control programs should be developed in consultation with veterinarians or the Department of Environment and Primary Industries. All activities should be documented in the appropriate records.

## SIGNS Of ILLNESS

The health of stock should be monitored at least daily and preferably more often. The first sign of ill-health noticed is often a change in the animals' natural demeanour. They may be listless or lethargic.

Closer examination may show variations in:

* body temperature
* gastrointestinal function, such as diarrhoea, weight loss, or loss of appetite
* urogenital function eg: abortion, infertility, or abdominal discharges
* respiratory function, eg: such as persistent coughing, gasping or panting

or evidence of:

* skin conditions, such as lesions or abnormal growths
* a tucked-up appearance, stiff gait, abnormal posture, patchy coat or loss of hair
* excessive scratching or rubbing
* swollen joints or lameness
* bellowing

A failure to thrive or grow is another sign of illness.

Common ailments include mastitis, bloat, internal parasites or milk fever.

If the cause of ill-health cannot be identified and corrected, assistance should be sought from veterinarians who are familiar with cattle. Illness or injuries, and treatments given, should be documented in the appropriate records.

## Euthanasia

In the case of cattle that become so sick, diseased or injured that recovery is unlikely or undesirable, on humane grounds euthanasia must be arranged with a veterinarian or a person competent in the technique for cattle.

A record of deaths is required for the annual report to VSAEC.

## Fate planning

A fate plan should be considered before using cattle in any programs. Cattle can be sold privately, at auction or consigned to abattoirs. Carcasses must be disposed of in accordance with local council regulations. Herd animals should not be sold individually unless they are joining an existing herd.

More information

* [Victorian Department of Environment and Primary Industries](https://www2.delwp.vic.gov.au/)
* [New South Wales Department of Primary Industries](http://www.dpi.nsw.gov.au/)
* [Universities Federation for Animal Welfare](https://www.ufaw.org.uk/)
* [University of California - Davis, Veterinary Medicine extension](http://www.vetmed.ucdavis.edu/vetext/)
* [Breeds of Livestock - Oklahoma State University](http://www.ansi.okstate.edu/breeds/)
* Enterprising Agriculture, Bannerman S., Thornthwaite S. and Gant L. (2001), MacMillan, Australia
* The Story of Beef in Australia, Field, K. (2002), Workboot Series, Kondinin Group, Western Australia
* The Stockman's Handbook, Kaus R., Lapworth J. and Carroll P. (1997), 6th Edition, Department of Primary Industries Queensland, Brisbane
* Practical Farming: Beef Cattle, Breeding, Feeding and Showing, Newman L. (1994), Inkata Press, Australia
* Dairy: The Story of Dairy Farming in Australia, Taylor N. (1995), Workboot Series, Kondinin Group, Western Australia
* The Management and Welfare of Farm Animals, Universities Federation for Animal Welfare (UFAW) (1988), Hertfordshire, UK
* Keeping a Cow, Wilson J. (1983), Kangaroo Press, Australia
* Farming in a Small Way, Yabsley G. (1983), NSW Agriculture, Sydney