

Northern Australia



Geography

- Northern area is tropical savannah with a hot, moist climate
- A marked dry season occurs in winter (April–October)
- South of this is a zone of hot grassland with a dry winter
- Annual rainfall ranges from 400–1,400mm

Production system

- Extensive grazing systems with low stocking rates and large properties
- Primarily a breeding area with calves born during spring
- Most cattle are only mustered once at the end of the wet season (April or May) for weaning and sale
- Cattle are mainly *Bos indicus* and their crosses, with most sold to the live feeder market of Asia and Australia

Summary

- *Buffalo fly* is widespread but should only be treated when there are at least 200 flies per animal.
- In cattle tick areas, cattle with at least five-eighths *Bos indicus* blood should be used to reduce the need for tick treatments.
- Vaccinate all cattle against tick fever at three to nine months of age.
- *Blacks scours* (Coccidiosis) is common in young cattle around weaning.

Major parasites

- Buffalo fly (*Haematobia irritans exigua*) in the Darwin, Katherine and Gulf districts of NT and Qld with heaviest infestations in the wet season
- Cattle tick (*Boophilus microplus*) and tick fever (*Anaplasma* and *Babesia*)
- Black scours (*Coccidiosis*) around weaning time

Other parasites

- Barber's pole worm (*Haemonchus placei*)
- Nodule worm (*Oesophagostomum radiatum*)
- Small intestinal worm (*Cooperia punctata* and *C. pectinata*)
- Biting lice (*Bovicola bovis*) and sucking lice (*Linognathus vituli*, *Haematopinus eurysternus*, *Solenopotes capillatus*)

Grazing management

- Vaccinate cattle from southern areas with few or no cattle ticks, prior to moving to tick endemic areas
- Young cattle held in yards or concentrated around watering or feeding points should receive preventative treatment against *Coccidiosis*
- Incidence of roundworms is low and specific grazing strategies are seldom required or practical

Economics

- Vaccination against tick fever in tick affected areas can produce excellent returns
- Cattle which are five-eighths or more *Bos indicus* are largely resistant to cattle tick
- Treatment of cattle with less than 200 buffalo flies per animal is unlikely to be cost effective
- Steers protected from buffalo fly can increase weight gains by 33kg

Calendar for fly, tick and fluke control

Spring calving herds

Time of year	Parasite	Control and treatment		
Onset of wet season	Buffalo fly	Treat only when there are more than 200 flies per animal (100 each side)	Chemical options – Back rubbers are useful in extensive areas and in the wet season where mustering is impossible – Back rubbers will be most effective if begun early in the season	Non-chemical options – Purchase the correct dung beetles and encourage their proliferation to help reduce the breeding environment for flies – Cull hypersensitive animals – Use fly traps where feasible
Wet season	Ticks	Utilise the innate resistance of <i>Bos indicus</i> breeds and their crosses – see DPI Notes at http://www.dpi.qld.gov.au/thematiclists/1175.html All cattle should be vaccinated against tick fever between three and nine months of age		
End of wet season (weaning time)	Black scours (<i>Coccidiosis</i>)	Consider monensin medicated feed where <i>Coccidia</i> are diagnosed as a problem		

CATTLE TICK AND TICK FEVER

Cattle tick is endemic from north-western Queensland to the Northern Territory and west to the Kimberly region of WA.

In endemic areas the innate resistance of *Bos indicus* cattle largely removes the need for routine treatments. Ticks still pose a problem however, because of their ability to spread the tick fever parasites *Babesia* and *Anaplasma*. Cattle with greater than five-eighths *Bos indicus* blood are more resistant to *Babesia* but are still susceptible to *Anaplasma marginale*. If treatments are required a number of options are available.

Ticks are most active from December to June, spending their parasitic stage (about 21 days) on one host. Adult females feed for about a week then drop onto pasture to lay eggs and subsequently die. Larvae can survive in the pasture for up to two months during summer and six to seven months in winter. Egg numbers decline during winter and the wet season.

BLACK SCOURS (*Coccidia*)

Coccidia are microscopic organisms which live in the intestine of young cattle. Severe infection produces profuse dark watery diarrhoea. Infected animals become dehydrated and some may die. Recovered animals often have a long period of low food consumption and poor weight gain. Disease is most common in young cattle around the time of weaning or during prolonged yarding.

Lifecycle

Coccidia have lifecycle stages in cattle and on the pasture. In cattle, *coccidia* breed and multiply in the wall of the small and large intestine. Eggs (oocysts) are excreted in the faeces. They become infective (sporozoites) and after ingestion the sporozoites penetrate the gut wall and the lifecycle is complete.

Signs

- Sudden onset of severe, foul smelling diarrhoea which may be blood-stained – either dark, tarry stain or fresh, red clots – and may also contain shreds of gut lining
- Straining
- Anaemia
- Decreased appetite
- Dehydration and recumbency
- Death

Epidemiology

The parasite lives and proliferates in the lining of the intestines. Almost every animal becomes infected with *coccidia* during their life, usually as a calf or weaner. In most cases the infection passes uneventfully and the animal becomes immune. In some cattle the infection can become overwhelming, particularly when the animal is experiencing some other form of stress, such as weaning, poor nutrition or close confinement.

During weaning or confinement, yards or areas around watering holes become rapidly contaminated with faecal material from infected animals. The parasite then spreads through young, susceptible cattle. The sporozoites are tough and survive for long periods in the soil. If a set of weaning yards become infected producers should consider moving future weaning to new yards.

After infection, cattle develop strong immunity to coccidiosis. A small number of animals may become permanent carriers, shedding small numbers of oocysts in their faeces.

Risk factors

- Young animals (calves and weaners)
- Low body weight at weaning
- Confinement in small areas
- Feed or watering points contaminated with faecal material

- Stress such as weaning, cold weather or poor nutrition

Control

Where early weaning occurs, or weaners are held in yards for more than a week, preventative measures should be used. Coccidiosis can be prevented by feeding a medicated ration or supplement containing monensin. Monensin is included in the diet at the rate of 10–20mg per head per day.

Infected animals should be isolated and overcrowding eased. Electrolytes can be added to the water and water troughs should be raised to prevent faecal contamination.

Once a calf has severe scours, treatment is difficult and consists largely of supportive treatment to correct dehydration. Electrolyte solutions should be administered. Euthanasia should be considered for animals that have become recumbent.

WORMS

There are few roundworms in this region and clinical disease is extremely rare. Despite this, it is not uncommon for producers to drench at weaning, although this is not routinely recommended.

BUFFALO FLY (*Haematobia irritans exigua*)

Buffalo fly is a blood-sucking parasite of cattle in warm, moist areas of northern Australia.

Lifecycle

Adult flies live on the cattle. Adult females lay eggs in cattle dung. Larvae hatch within 24 hours and feed in the dung for 9–40 days as they mature to adulthood. In hot, humid conditions the fly lifecycle takes less than two weeks.

Effect on cattle

Blood sucking by flies causes severe skin irritation. Cattle rub vigorously, disrupting grazing time and damaging the hide. Some cattle are allergic to fly bites and rub excessively, causing severe ulcers.

Studies in Queensland showed steers protected from buffalo fly gained an extra 14% body weight over a 13-month period. In another study cattle protected from flies gained an extra 33kg over a 21-week period.

If buffalo fly is not effectively treated it can cost up to \$30 per head in lost production.

Control

Cattle can tolerate small numbers of flies without losing production. Treatment is only required when there are 200 flies per animal or when susceptible animals, such as bulls, show 'fly worry'.

A range of chemical and non-chemical treatments are available. Prior to the use of chemical options all non-chemical options should be explored.

Non-chemical options

- Cull hypersensitive animals
- Install buffalo fly traps
- Introduce dung beetles to break down dung pats and reduce fly breeding habitat.

Chemical control

A range of chemical options is available (see the 'Buffalo fly' factsheet).

Some chemicals adversely affect dung beetles. This can be minimised by the use of insecticidal ear tags, treating only when necessary, avoiding SPs during spring when dung beetles are emerging and using ML pour-ons in autumn and only when control of other parasites is required.