Running a dairy

About dairy cows

Most dairy farms are found in cooler places with a temperate climate, such as Victoria and New South Wales. In hotter, more humid climates, cows produce much less milk. That is why Brigalow is the only dairy farm in the Northern Territory.

Brigalow Dairy Farm has three types of dairy cows that produce large amounts of high-quality milk: Holstein Friesians, Jerseys and Australian Friesian Sahiwals.

Holstein Friesian cows originally came from Holland and Germany. They have the highest milk production of all dairy breeds. These cows can be seen munching grass in paddocks of many dairy farms and are the most common dairy cow in Australia.

▲ Holstein Friesian cows are large black-and-white cows.

Jersey cows are smaller and usually brown in colour. This breed of cattle originally came from the Channel Island of Jersey, off England. Jersey milk has more milk fat (cream) in it compared to the Holstein Friesian and other dairy cow breeds.

Australian Friesian Sahiwals (AFS), were bred to perform well in tropical areas of Australia. Breeders crossed a Holstein Friesian with a dairy cow from Pakistan called a Sahiwal. Besides being more tolerant to heat, the AFS is also more resistant to ticks.

Christopher pats a Jersey cow waiting to be milked.
Breeding dairy cows

On Brigalow Farm there is a paddock where a certain number of cows without calves are kept. At the right time, bulls are let in to mate with the cows. When the cows produce a calf they are ready for milking.

**Cattle Words**

There are lots of different words to describe cattle.

- A baby is a calf, its mother is the dam and its father is the sire.
- As the calves grow older, the females are called heifers until they have had a calf of their own. Sometimes calves are called poddies.
- Male cattle that have their reproductive organs removed are called steers.
- Adult females are called cows and adult males are bulls.
- A group of cattle is called a herd.

Cows produce milk to feed their calves. Not long after a calf is born, it is separated from its mother and raised by the farm workers. What may seem a bit cruel is unfortunately necessary. After all, how could you milk a cow that is suckling a calf? A good dairy cow is one that easily has lots of calves, which makes it produce milk more often.

Brigalow has about 1500 cattle. That number is made up of the milking cows, their calves, the cows that are waiting to have a calf (and therefore have no milk) and some bulls for breeding.
Feeding cows in a feedlot dairy

With 1500 cattle, Brigalow Farm is a large dairy. During the hot wet season, rain turns the soil into a muddy bog. If the cows had to walk through that mud and heat every day to find grass in the paddock to eat, they would become stressed and use up lots of energy needed to make milk. To prevent the cows becoming stressed, the cows spend most their time in a big shady shed and have their food delivered. This system of raising cows is called a feedlot dairy.

In a feedlot like Brigalow, the farm grows its own crops to feed the cows. Brigalow grows sorghum, a grain crop that thrives in hot, wet climates. Sorghum is high in carbohydrates, which are essential in a dairy cow’s diet.

The crop of sorghum is cut and delivered to the cows in their sheds. This food is called ‘green chop’. Wayne says the green chop is a lot like the grass clippings from mowing the lawn. Sorghum is an easy crop to grow, as Wayne just plants it once.

Watering sorghum

In the dry season, sorghum needs lots of water, or else it will die. Giant sprinklers water the sorghum. Water comes from underground and is pumped up from bores.
Feeding time

Once the sorghum is cut, a few things are added to it to make it tastier and better for the cows. Molasses, a byproduct of sugarcane processing, is a thick sugary substance that makes the green chop taste sweet. Wayne says cows have a sweet tooth. Vitamins and minerals are also added for the health of the cows. With water added to the sorghum mix, cows find it easier to eat. It is a bit like adding milk to cereal. Sometimes, in the wet season, the green chop is too damp, so hay is mixed in.

One of the farm workers collects the mixed green chop at 6:00 a.m. and puts it in long feed troughs that run down the side of the cowshed. This all happens while the cows are being milked in another shed. When the hungry cows return after milking, their meal is waiting for them. Cows are fed twice a day, once in the morning and then in the late afternoon.

The cows are free to wander in and out of the shed to the nearby paddock. In the heat of summer, cows like the shade of the shed. In the evening they head out for a stroll.
Diseases

The cattle tick can be a pest to dairy cows. Cattle ticks can be up to 10 millimetres in size and are related to spiders and mites. When feeling hungry, a tick latches on to a cow and lives off her blood. Cows can get diseases spread by ticks. Sometimes cows get so many ticks they loose blood and become very ill.

Special chemicals are used to kill ticks. A chemical is dusted on the cow’s neck, a bit like flea powdering a dog. The treatment lasts for three months before it needs to be reapplied.

In the tropics, dairy cattle are more prone to diseases than their cousins in cooler southern states. Around Katherine, soils get soaked in the wet season. Bacteria thrive in the hot and wet conditions. During that time, cows can get skin diseases from the soil. Luckily, these diseases are easily treated and do not hurt the cow. The cows regularly need to be checked for ticks and diseases.

**Foot-and-mouth disease**

Possibly the most serious problem affecting cattle is a disease with a strange name called foot and mouth. Recently, millions of cattle had to be destroyed in Europe because of an outbreak of this very dangerous disease. Luckily, Australia has no foot and mouth because of very strict quarantine laws. If this disease managed to sneak into Australia, it could destroy the whole dairy, cattle and sheep industry.
Environmental issues

Feral pigs have become a huge problem in many parts of Australia, including Brigalow Farm. Feral pigs were once domestic farm pigs that escaped and became wild. These pigs survive well in the bush, where they destroy native vegetation and erode riverbanks in their search for food and water. Pigs can also destroy a crop by flattening it and digging it up.

Big male feral pigs have large tusks and, when cornered or frightened, can become extremely dangerous to people and other farm animals. In the wet season, when there is lots of water around, the pigs spread throughout the land. As the land dries up in the dry season, pigs come to Brigalow Dairy Farm in search of water.

Feral pigs love the same feed that cattle eat. Under the cover of darkness, pigs mooch around cowsheds at night, searching for any grain or stored sorghum. Any workers starting early must look out for pigs that may still be around before the sun comes up. A frightened male pig could attack a worker, causing serious injuries. Wayne thinks there are about 50 pigs on the farm.
Looking after calves

Not long after they are born, calves are separated from their mothers. Calves of the same age are kept together in pens in groups of 11. A plastic container full of milk is hung on the pen fence. The container has 11 spouts from which the calves suck the milk. They often push each other to get to the milk. They are all very cute, are used to people and can be patted. When the calves get a bit older, they are weaned. In this process the calves are slowly given less and less milk while getting more solid food. When the calves are completely used to solid food, they stop drinking milk.

Christopher checks that the calves are feeding properly.

Christopher pours the milk into the calf troughs.

A dairy-farm worker prepares feed for calves being weaned off milk.

Calves sucking on the teats to get the milk

The staff feed the calves with milk, special pellets and hay. Christopher often helps around the dairy by feeding calves during school holidays and on weekends. He supplies milk to each pen and water troughs are thoroughly cleaned and refilled. Once the calves are old enough to eat hay, they are moved to their own paddock where they are free to run around.
Milking the cows

In the old days, cows were milked by hand. Today, modern machinery makes the job a lot easier and faster. At the unbelievably early time of 4.45 a.m., workers arrive at the farm to start milking. The cows are divided up into six groups, depending on their breed and when they had their calves.

The dairy platform is a large circular base that looks and works like a merry-go-round. On the platform each cow has its own compartment for milking. Long tubes with milking cups are attached to each cow's udder and a machine sucks out the milk. This process does not harm or hurt the cows one bit.

Even in the milking shed, computers do a lot of work. Each cow wears a collar that has a number and a sensor. As the cow walks onto the platform, the computer identifies each cow. The computer then measures how much milk each cow produces and the thickness of the milk. If a cow's milk is different to usual, the computer does a printout. This could mean the cow is sick or is beginning to run out of milk before its next calf. While the cows are being milked, other workers hose down and clean out the cowshed. Milking happens again at 3.30 p.m.
Transporting the milk to Darwin

The milk comes out of the udder of a cow at body temperature, between 38.5 and 39 degrees Celsius. It passes through pipes into a machine called a heat exchanger. This machine drops the milk temperature down to about 2 degrees Celsius. The milk must be kept at less than 4 degrees Celsius, or it will go off.

The milk is drained into a big tanker truck. The tanker needs to be insulated so that the milk stays cold for the 310-kilometre drive to Darwin. The tanker is driven to Darwin during the cool night to avoid the hotter daytime. If the milk leaves Brigalow Farm at 2 degrees Celsius, it will arrive in Darwin at 3 degrees Celsius, still under the 4 degrees Celsius regulation.

All the milk from Brigalow Farm goes to Darwin. Brigalow supplies about half of the Northern Territory’s milk.

The tanker that takes the milk to Darwin holds 27 500 litres of milk. A truck usually takes two tankers at one time. That is 55 000 litres of fresh milk, full of nutrients such as riboflavin, protein, calcium, vitamin C and thiamine.
Darwin Dairy

Milk is brought to Darwin from many areas of Australia, including Queensland and South Australia. When milk arrives from Brigalow and other dairy farms outside the Northern Territory to Pauls milk-processing factory in Darwin, it is tested to make sure it meets quality specifications. The milk is then pumped into stainless steel storage containers. From there, the milk passes through a milk separator, milk homogeniser and milk pasteuriser.

Milk separator

The separator removes the cream from full-cream milk to make reduced-fat milk and low-fat or skim milk.

Milk homogeniser

The milk homogeniser is a machine that makes the milk smooth and creamy by mixing the milk fat evenly through. It also stops the cream from forming a layer at the top of the milk.

Milk pasteuriser

Pasteurisation is a very important process which makes milk safe for people to drink. To kill bacteria and enzymes, the milk is heated to 75 degrees Celsius for 17 seconds. The milk is then cooled back to 2 degrees Celsius.

The milk is then poured into the containers that we all see in shops. The containers might hold 300 millilitres, 500 millilitres, 1 litre or 3 litres of milk. The dairy also makes milks with iced-coffee or chocolate flavour.