1989

Beef in Western Australia

Western Australian Department of Agriculture

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/bulletins

Part of the Beef Science Commons

Recommended Citation

Western Australian Department of Agriculture. (1989), Beef in Western Australia. Department of Agriculture and Food, Western Australia, Perth. Bulletin 4160.

This bulletin is brought to you for free and open access by the Research Publications at Research Library. It has been accepted for inclusion in Bulletins 4000 - by an authorized administrator of Research Library. For more information, please contact jennifer.heathcote@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au.
IMPORTANT DISCLAIMER

This document has been obtained from DAFWA’s research library website (researchlibrary.agric.wa.gov.au) which hosts DAFWA’s archival research publications. Although reasonable care was taken to make the information in the document accurate at the time it was first published, DAFWA does not make any representations or warranties about its accuracy, reliability, currency, completeness or suitability for any particular purpose. It may be out of date, inaccurate or misleading or conflict with current laws, polices or practices. DAFWA has not reviewed or revised the information before making the document available from its research library website. Before using the information, you should carefully evaluate its accuracy, currency, completeness and relevance for your purposes. We recommend you also search for more recent information on DAFWA’s research library website, DAFWA’s main website (https://www.agric.wa.gov.au) and other appropriate websites and sources.

Information in, or referred to in, documents on DAFWA’s research library website is not tailored to the circumstances of individual farms, people or businesses, and does not constitute legal, business, scientific, agricultural or farm management advice. We recommend before making any significant decisions, you obtain advice from appropriate professionals who have taken into account your individual circumstances and objectives.

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia and their employees and agents (collectively and individually referred to below as DAFWA) accept no liability whatsoever, by reason of negligence or otherwise, arising from any use or release of information in, or referred to in, this document, or any error, inaccuracy or omission in the information.
Western Australia's beef cattle industry is based on two distinct systems of production.

More than half the herd is in the pastoral areas of the Kimberley and Eremaean Provinces (see map) on big tracts of leasehold land. Some of these 'stations' occupy more than 400,000 hectares of rangeland country which carries native vegetation only. Most cattle stations are undeveloped apart from watering points, stock yards and sometimes - but not always - fencing.

The slightly smaller, but much more productive proportion of the herd, is run on the farms of the South-West Province - particularly in the higher rainfall south-west corner, and on the Province's south and west coastal areas.

In 1988, the beef industry was based on about 1.7 million cattle with 780,000 in the south-west agricultural areas (46%) and 924,000 in the pastoral areas (54%). Of the cattle in the south-west, over 100,000 are in the dairy herd that contributes about 45,000 head to the total of 492,000 animals slaughtered for beef and veal.

The value of the cattle turned off as beef in 1988 was about $160 million - about 6.5 per cent of the total value of Western Australia's agricultural production.

### Development of the industry

Western Australia's first European settlers introduced cattle for both milk and meat soon after a permanent colony was established in 1829.

From this time, most Western Australian beef was produced as a side-line of the dairy industry. The form of production persisted in the agricultural areas until the main emphasis in the dairy industry began to change from butterfat to fresh milk production in the 1960s.

Until the 1960s, dairy breeds, or crossbreds resulting from mating dairy cows with beef breed bulls, had contributed most of the State's beef. Then a more distinct beef herd developed, based originally on traditional beef breeds of cattle from the United Kingdom and later including other European breeds.
Meanwhile, another Western Australian beef industry had developed independently in the Kimberley. In the 1880s, pioneer pastoralists moved into the area from the east by droving cattle overland, and from the west by bringing their stock in by sea.

These herds, based largely on the Beef Shorthorn, expanded rapidly on the new country and by the 1960s had reached a total of 650,000 head in all Kimberley districts.

Cattle raised in the South-West Province provided beef for local consumption, but most of the Kimberley beef was sent overseas, and abattoirs were built at Wyndham, Broome, and later at Derby to service this export industry. Until the mid 1970s, West Kimberley cattle were also transported to southern abattoirs for slaughter, originally by sea and later by road.

An abattoir established in the rugged country north-east of Derby at Glenroy Station also slaughtered cattle in the 1940s and 1950s. The beef was air-freighted out.

Today, most Kimberley beef is still exported, though the United States of America has displaced the United Kingdom as the major customer.

The South-West Province breeding herds produce many more animals for slaughter than do those in the Kimberley Province. In recent years, the ratio has been more than three to one. This is mainly a consequence of closer management, better feed and more favourable climatic conditions in the south-west.

**Production areas**

There is a vast difference, in most aspects of beef production, between the pastoral and agricultural areas.

**The Kimberley**

The Kimberley Province (see map) has a tropical climate. Most rains fall in summer from monsoon systems, but they are variable and sporadic. Some parts of the coast receive up to 1,150 mm a year, but parts of the inland get an average of less than 350 mm. Day temperatures are high in summer and medium in winter; inland, night temperatures can drop to near-zero in winter.

Most of the area used for beef production comprises broad river valleys and heavy, cracking clay plains associated with old lake deposits, flanked by ranges of stony and sparsely vegetated hills, and extensive areas of sand-plain known locally as 'pindan'.
CLIMATIC PROVINCES OF WESTERN AUSTRALIA SHOWING VEGETATION AND AGRICULTURAL REGIONS

A. Kimberley Province - Mainly summer rainfall. North of the 350 mm summer rainfall isohyet - pastoral.
B. Eremaean Province - Transitional rainfall. From the summer rainfall 350 mm isohyet to the winter rainfall 275 mm isohyet - pastoral.
   1. North-West Spinifex Region. From the Tropic of Capricorn north to the 350 mm summer rainfall isohyet.
   2. Mulga Scrubland Region. From the Tropic of Capricorn south to the 275 mm winter rainfall isohyet.
   3. Arid Interior Region. Rainfall less than 200 mm per year.
C. South-West Province - Mainly winter rainfall, above 275 mm - mainly non-irrigated agriculture.

Note: The Kimberley Province as determined by the 350 mm northern rainfall isohyet, roughly equates with the Land Act definition of the Kimberley as, "all that land north of parallel 19°30' south latitude." The southern 275 mm winter rainfall isohyet broadly defines the outer limits of the non-irrigated agricultural areas of the State, which is determined principally by rainfall distribution.
Kimberley plains country is destined for market. For this reason, predominantly grassy, but carries a few short trees in some areas. The rivers, and some creeks, are tree-lined.

The pindan carries sparse to dense stands of trees, mostly Acacia species, with an understorey of annual and perennial grasses and many species of shrubs. Spinifex, a spiky-leafed and relatively unpalatable hummocky grass, is a major component in some areas.

Throughout the Kimberley, the grasses offer good quality grazing only through the ‘wet’ - the relatively short summer growing season. From the time the grasses set seed, their quality deteriorates steadily so that by the end of the ‘dry’ season some species are virtually useless as feed.

Big areas of the Kimberley plains country, which carried better quality grass species when the first cattle were introduced, are now so denuded by over-grazing that the Western Australian Government has mounted major regeneration projects to restore them.

In other pindan areas, palatable grasses and shrubs have given way to unpalatable and even damaging species, such as corkscrew grass.

Introduced species such as buffel and Birdwood grasses and kapok bush have been used with great success to revegetate parts of the formerly bare plains in the catchment of the Ord River in the east Kimberley, and on stations south of Broome. The plains of the Fitzroy, the major river in the central and west Kimberley, are now to be regenerated in a programme started recently.

**Breeding and production**

Harsh conditions, poor quality feed and open range management in the region combine to hold down fertility and survival, hence the relatively low turn-off of cattle for slaughter from Kimberley stations. Another feature of this industry is the relatively slow rate of growth of animals destined for market. For this reason, steers, heifers and spayed (desexed) cows usually must be over four years old before they reach suitable slaughter weights of 500 to 550 kg liveweight.

Because of the age of most of the cattle slaughtered, nearly all Kimberley beef is classed as ‘manufacturing quality’. It is exported and used mainly for hamburgers and small goods.

Until about 20 years ago, Kimberley cattle were mustered during the ‘dry’ season by stockmen on horseback, so that calves could be branded and animals suitable for slaughter selected. These were usually held in a bullock paddock, often the only fenced area on a station. Later in the ‘dry’, mobs of up to 2,000 were driven in easy stages, by drovers on horseback, to be slaughtered or shipped. Sometimes the journey covered hundreds of kilometres.

Today, light aircraft, helicopters, specially-adapted vehicles and motorbikes all play a part in Kimberley cattle mustering, but horses are still used extensively.

The drovers have been displaced by big stock trucks, usually towing up to three trailers. Such units are appropriately named ‘road trains’. They travel on all-weather roads which now service the main centres of the Kimberley.

Traditionally, cattle turned off from the Kimberley were older bullocks and cows and were ready for slaughter. In recent years there has been an increasing number of younger ‘store’ cattle turned off. These animals are not ready for slaughter and are usually grown out and fattened in other areas of Australia. In addition, each year, there are also a few thousand head shipped alive to other countries either for fattening or immediate slaughter.
Prospects for Improvement

Over the past 10 years there has been a great increase in the introduction of Brahman cattle in the Kimberley - a large proportion of the cattle now include some Brahman blood.

Research by the Department of Agriculture has shown that Brahman and Brahman cross cattle have lower mortality rates and higher growth rates than the traditional 'Kimberley Shorthorn'.

The open range management system used in the Kimberley, and the rugged nature of much of the country, has prevented pastoralists from maintaining close control of cattle breeding programmes. One of their biggest problems has always been the big number of wild 'scrub' bulls, which has made the management of breeding virtually impossible.

Improvements in management and breeding are not possible in the Kimberley without investment in improvements such as fencing, water supplies and yards. Once areas are fenced then stock and grazing pressure can be controlled. This provides opportunities to improve the condition of the rangeland as well as adoption of simple management procedures. Research has shown that weaning calves at about six months of age can greatly increase calving rates and cow survival, both of which increase production.

Introducing different plant species has also shown promise. A hardy group of legumes - particularly *Stylosanthes* species - are showing promise in parts of the Kimberley and the adjacent Northern Territory.

Experiments with feedlot fattening in the Kimberley have indicated that this could be a means of improving quality and offering younger animals for slaughter. But to date, most commercial ventures have been unsuccessful because the premiums paid for lot-finished animals have been too low to provide a satisfactory margin over the costs involved.
In the past eight years, studies have been made on the trans-shipment of young cattle by road to the agricultural areas for 'finishing'. Weaner cattle transferred at six months of age can reach slaughter weights in excess of 400 kg by the time they are about two years of age. The carcass characteristics and meat quality of these animals makes them suitable for the high value 'table meat' trade. These weaner cattle can also be grown out and finished on irrigated *Leucaena* pastures in the Ord Irrigation Area. In this case they attain slaughter weights when they are 18 months old.

**The spinifex and mulga areas**

Traditionally, the spinifex and mulga pastoral leases of the Eremaean Province were developed to run sheep for wool production. Leases were fenced and 'watered' for this purpose. But dingo attacks, droughts and rangeland degradation induced a number of pastoralists to replace their sheep with beef cattle.

The low, highly variable rainfall which characterizes the Eremaean Province, along with the poor quality of much of the native vegetation which is virtually the only feed for livestock, results in very low carrying capacities - about one beast to 100 hectares. These areas carry only about 10 per cent of Australia's beef herd.

Most cattle turned-off from Eremaean pastoral leases are transported by road for slaughter in the southern parts of the State.

**The agricultural areas**

Forecasts of the likely turn-off of cattle from the two major segments of Western Australia's beef herd, indicate that the agricultural areas will continue to produce about three times as much beef as the pastoral areas. Also, most of it will continue to be of far better quality.

The agricultural areas of the South-West Province are broadly categorized by rainfall, the length of growing season, the
frequency of drought and types of soil. All vary widely, and stock carrying capacities and agricultural practices vary accordingly.

The farm size required for a full-time agricultural enterprise varies from about 2,500 hectares in the mainly cereal-growing eastern wheatbelt, to about 300 hectares in the higher rainfall south-west corner of the Province.

Most beef production is concentrated in the areas of more than 650 mm annual rainfall. Carrying capacities range from about 0.8 to 2.5 hectares per breeding cow, depending on rainfall, soil type, pasture and fertilizer use.

The 450 to 650 mm rainfall area of the South-West Province, which includes big sections of the western and southern coastal plains, also carries a large proportion of Western Australia's beef cattle.

During the 1960s, a series of above-average rainfall years and good beef prices encouraged many wheatbelt farmers to build up herds of beef cattle. Falling beef prices in the mid-1970s, and the high costs of feeding cattle compared with sheep caused these farmers to sell off their cattle or drastically reduce their numbers. Economic pressures also induced them to increase the proportion of their farms sown to crops.

**Breeding and production**

Control of mating and grazing is practised on nearly all farms in the agricultural areas. Fodder conservation, as hay or silage, is common practice.

Calving is restricted mainly to the early part of the growing season (April, May and June), and calves are weaned at seven to ten months old soon after the feed dries

Supplements are often fed during the summer months when dry pasture is in short supply.
off in November to January. Hay is used mainly as a supplement to pasture for breeders during early lactation in autumn and winter.

Most beef calves are allowed to suckle on their own mothers until weaning. Many prime baby beef calves are slaughtered at weaning at about 135 to 165 kg carcass weight, but increasing numbers are carried through to slaughter as prime yearling beef at 15 to 20 months and 200 to 250 kg carcass weight.

About 90 per cent of the beef sold for local consumption is classified according to age, sex and fatness. The carcasses of a big proportion of the young animals slaughtered in Western Australian abattoirs are electrically stimulated to enhance tenderness. These are specially identified with a gold strip band, or in the case of lot-fed cattle, a purple strip brand.

Western Australia's main beef breeds in the agricultural areas are the Hereford (polled and horned), Shorthorn (polled and horned), Angus, Murray Grey, Devon, Simmental, Charolais, Limousin and Santa Gertrudis.

Grazed pasture is the major feed supply on most beef-producing farms. But unfattened 'store' weaners are also finished on grain in autumn for slaughter in winter at about 14 to 16 months. At this stage they are about 150 to 180 kg carcass weight and usually command a higher price. This helps maintain the continuity of supply of prime beef to the local market. Conserved fodder, as hay or silage, is also fed in autumn to give yearling cattle a good start for winter, before sale off spring pasture.

Annual liveweight gains of 200 kg are common in the mixed farming area. They range up to 250 kg in the high rainfall pasture area.

Improved pastures containing legumes such as subterranean clover supply relatively nutritious feed in the growing season. This ranges from four or five months in the lower rainfall parts of the agricultural areas to nine months in the higher rainfall parts in the south-west corner of the State.

Such pastures, when they dry off in summer, are adequate to maintain dry stock, but not cows in milk. Nor will they allow beasts to fatten at acceptable rates.

In general, the relative prices of land, labour, grain and beef have tended to discourage the development of fully-intensive beef production systems such as feed-lotting as practised in Europe and North America.

The Western Australian dairy industry, concentrated in parts of the high rainfall areas, represents only about 14.8 per cent of the cattle in the agricultural areas. The practice of hand rearing surplus dairy calves for beef production, together with culling of dairy cows, contributes about 14 per cent of agricultural area cattle sent for slaughter. The calves are 'grown out' and finished on pasture at 18 to 30 months of age. Dairy cattle are used for the manufacturing beef trade or for those markets requiring heavier or leaner carcasses.

**Herd trends**

Beef cattle numbers in the agricultural areas have been relatively stable over the last five years following the rapid decline between 1976 and 1983. In 1989, there were 664,000 head in the agricultural areas. Increased prices are predicted in response to the de-regulation of the Japanese beef market and this may encourage farmers to increase their herd numbers.

In 1989 herd size in the agricultural areas ranged up to 10,000 head, but about half the 6,000 beef producers had fewer than 50.
Servicing

Beef producers in the agricultural areas are well serviced with abattoirs with six licenced export works, and smaller works licenced for slaughtering for the domestic market. Many Western Australian country towns have small abattoirs slaughtering for the local butchers' shops.

In the agricultural areas, cattle may be transported to saleyards for live auction, or they may be sold on the property to wholesale buyers. From the property they may be sold for a negotiated price per kilogram by carcass weight and buyer's grade, or sold at a negotiated price per head.

C.A.L.M. - a computer aided livestock marketing system is now also available to beef producers. In this system the cattle are weighed and assessed by a trained assessor before the sale. The sale is conducted via a computer network and the stock can be auctioned without leaving the property.

Selling agents charge five per cent commission at auction sales conducted at saleyards. Saleyard handling fees and the State levy on sales are also charged to the producer, but the buyer pays transport from the saleyard and costs of slaughter and meat inspection. A lower commission is usually charged for sales arranged by direct consignment to the abattoir. No saleyard costs are incurred, but the producer pays slaughter levies and meat inspection. No commission is payable on private sales.

Beef cattle diseases

Western Australia is free of the major epidemic cattle diseases. Tuberculosis is present, but only at a very low level in particular pockets in the pastoral areas.

A programme, now in progress, is aimed at eradicating the disease by 1992.

The State is now free of brucellosis as a result of an eradication campaign.

Parasites, both internal and external, are widespread in the higher rainfall districts. Internal parasites mainly affect cattle in the south-west. Cattle ticks constitute major problems in the Kimberley. Cattle moved from north to south are subject to a dipping programme to prevent the transport of ticks to areas outside the Kimberley region.

Seasonal deficiencies of phosphorus and protein are frequent in the open range properties of the Kimberley, north-west and other pastoral areas.

Deficiencies of the trace elements copper and cobalt are evident in south-west coastal areas, but appropriate fertilizer or supplementation programmes correct the deficiency.

Leptospirosis and vibriosis affect some beef herds. Carceral eyes in white-faced cattle and contagious ophthalmitis ('pinkeye') are also frequent. Outbreaks of enteritis cause sporadic problems in suckling herds.

In general, the main health problems of cattle are related to major nutrients, minerals and trace elements, and parasites.