W.A. dairying : progress in 42 years

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From hardship and elementary standards, West Australian dairying has developed into a consolidated industry with larger herds, increased output and high quality production. The changes he has seen are reviewed by Mr. M. Cullity who retired last month from the position of Chief of the Division of Dairying, after 42 years of service to the industry.

THE history of Western Australia's dairying industry has been a story of struggle against hardship, marketing problems and adverse criticism. In spite of this the industry has steadily grown and greatly improved its efficiency.

It is now going through a period of consolidation and present indications are that it is recovering from a setback in the past two years.

**Pastures**

My early association with the establishment of pasture was with demonstrations of the sowing of subterranean clover "on the burn," that is, in the cold ashes after a clearing fire. These demonstrations were very successful and enabled large areas of pasture to be established in partially cleared country even where logs were still lying on the ground.

The development of cheaper forms of clearing speeded up an increase in acreage on the group settlement farms. At that time the older settlers relied on ring-barking and fire to develop the country, and this method was relatively cheap because many newcomers to Australia were prepared to accept low wages and live in primitive conditions.

The real advance in clearing methods came after the World War when bulldozers became available and demonstrations in clearing techniques were carried out by Government machines. Later, contract clearing was carried out by these machines and this eventually led to the system of private contractors doing the work.

In the early 1920's a large number of demonstrations were conducted to show that superphosphate was necessary to get good establishment of clover. Subterranean clover proved to be the only reliable productive species. Later other demonstrations included the use of strains of *Phalaris tuberosa* and Perennial ryegrass.

Unfortunately, the strains available did not prove persistent except in a few localities. Lucerne was successfully grown at this time but the increasing incidence of lucerne flea and red mite made it an unreliable crop. It became largely neglected until special chemicals used at the time of germination proved successful in suppressing these insects.

Later success was achieved in the selection of strains of perennial ryegrass, kikuyu and cocksfoot. Cocksfoot and
various phalaris varieties are gradually producing more productive pastures in several areas.

Kikuyu grass has been known in W.A. for about 50 years. At first it was considered to be a pest. It received little attention also because of the amount of labour required in planting runners. Despite this the grass has forced attention to itself and its value is more widely appreciated.

A seeding strain became available and the older strain seemed to become acclimatised and began to seed. This resulted in a more rapid expansion of the use of this grass, particularly in the more southerly districts.

Fertilisers
Superphosphate was necessary for all soils and at first relatively low rates were applied. Later higher applications at the time of sowing proved successful as did also higher rates of seeding.

In the 1930's pasture deterioration was extremely severe, especially in the districts south of Busselton. No area could more truly be described as “depressed.” About 1939 a deficiency of copper was discovered. When this element was used, mixed with superphosphate, the response in pasture growth and in many other ways throughout the district was dramatic.

During the war a deficiency of zinc occurred. Deterioration still occurred in some areas and sometimes this was shown to be due to other trace elements such as molybdenum. On lighter soils the importance of using potash became increasingly recognised.

Dairy cattle
In the early days of group settlement a number of heifers were imported from the Eastern States, together with a sufficient number of pure bred bulls from cows which had yielded above standard for their age.

At the same time the Zone Mass Herd Improvement Scheme was initiated in an endeavour to build up breed pride in various localities and to facilitate the exchange of bulls between farmers.

A further part of the special plan was the proclamation of the Dairy Cattle Improvement Act requiring the registration and grading of all bulls on dairy farms.

Herd recording of pure bred cattle started in the early 1920's while a similar system for grade herds commenced in 1933.

Artificial breeding
The most revolutionary change in dairy cattle breeding was the establishment of the Artificial Breeding Service by the Department of Agriculture in 1955. The bull stud was situated on the Wokalup Research Station. This service was satisfactorily established and was conducted profitably.

Research stations
The Denmark Research Station property has been owned by the Department of Agriculture for more than 60 years. It was originally established as a small butter and bacon factory. The nucleus of a pure bred herd was also introduced. The property increased in size over the years. Its contribution has been great in the provision to local farmers of pure bred cattle and pigs. A range of experimental work on pastures and fodder crops has been carried out.

The most notable success was the development of a method of establishing pasture on Plantagenet Peaty Sand.

The Bundidup property at Wokalup was transferred to the Department of Agriculture in 1949 for development as a research station. Since then development has proceeded rapidly and the necessary farm facilities have been provided. One hundred and forty acres of irrigated pasture have been established. The property has about 800 cattle, of which more than 100 are milking cows and 150 beef breeders. A large range of investigations has been conducted. These include work on pastures and fodder crops under dry land and irrigated conditions, including studies of productivity of pasture under various stocking rates.

Manufacturing improvements
In 1926 butter manufacturing equipment and methods were crude compared with the situation today.

The Busselton factory, for example, was equipped with two small wooden churns and pasteurisation was carried out in zinc-lined "D" type vats in a small dark elevated loft. Can washing was done in a kauri wooden vat.
Cream was not collected frequently, and the proportion which would be second grade by today's standards was high. Clover taints were prominent and were not eliminated or even reduced during processing. The initial acidity of the cream was very high. The butter was a much more fully flavoured article than is manufactured at present. This was due, apart from the feed flavour, to the relatively high level of acidity left after adding the neutraliser. Creams were very sour.

Since that time, the factories have been progressively improved structurally and more modern and efficient equipment has been installed.

Probably the first important change was from the holding type system of pasteurisation to the flash method, the first flash pasteurisers being Silke-Borg, Universal, and the Eclipse models.

With the coming of vacuum treatment using direct steam injection, the quality of butter improved immediately. Acidity before treatment was reduced to a lower level, feed and weed flavours were eliminated, and the smooth, clean, palatable butter of today began to be produced.

A recent and revolutionary change was the introduction of a continuous butter making machine at one factory, eliminating the traditional churning process.

That over 99 per cent. of West Australian butter is of excellent table quality is a source of gratification. Cheese manufacture has improved and consumption has increased milk butter quality and packaging.

The industry has become more geared for the manufacture of a diversified range of products. This has involved greater quantities of milk instead of cream being delivered to factories.

**Dairy premises**

In the early years dairy inspection was not very regular. Those who had the responsibility of inspecting dairies were cautious about giving instructions for the improvement of premises; improvements which would cause farmers expense and might force them out of dairying.

Despite this extremely cautious but understanding approach, dairies improved progressively. The original dairies were mainly of the very simple and now obsolete back-out type.

The first major change was the adoption of the walk-through bail. Today the most popular dairy is the herringbone type, which enables a greater throughput of cows per man per hour than any other and with less discomfort to the men; there is no stooping.

At the same time circular yards and radial gates have relieved the farmer of much unnecessary movement.

In some areas bulk vats have been installed, and these again reduce effort on the part of the farmer. They eliminate many chores, and the indication is that the time saved will be used in milking more cows.

Facilities in the dairies have improved; nearly all now have direct water supplies and better water heating and cooling appliances.

These improvements with more frequent deliveries of cream have contributed to improved quality of the final product.

**Consolidation**

Dairying has been the pioneer grazing industry. As farms became larger, farmers were able to diversify their activities from purely dairying to other forms of livestock farming. Some have also included fruit and potato growing activities.

While the State's dairy cattle graze no more than 500,000 acres, the total area of pasture directly resulting from the pioneering work on dairy farms is now about 2,250,000 acres.

During the period many trials and tribulations have been experienced. Many farmers and their families laboured under great hardships and a good proportion of these left their farms because of their inability to cope with the disabilities associated with carving farms from virgin forest.

However, the present situation is one of consolidation in which there is growing stability as herd sizes increase and the number of unprofitable farms decrease.

In a period of 20 years the average herd size as measured in grade herd recording has increased from 28 to 62. The output of these farms is greater and the economic stability, and therefore the happiness of the dairy farmer and his family, has improved.
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