Beef growth rate studies

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THE Australian Agricultural Council in 1948 approved a co-ordinated plan of investigating beef growth rates in the southern regions of Australia. Considerable attention had been given to the problems of the beef industry in Northern Australia, but it was felt that the value of the southern agricultural areas as a source of fat cattle as well as for rapid and economical fattening, was not fully appreciated. The Animal Production Committee and its Technical Sub-committee on Beef Cattle were charged with the responsibility of organising, with the State Departments of Agriculture work in each of the States of New South Wales, Victoria, Tasmania, South Australia and Western Australia.

The intention was not only to gain information on growth rates in the different environments, but later when this data had been accumulated, to institute trials with various changes in management, principally supplementary feeding with a view to determining whether more economical methods of fattening could be devised. It was intended also that studies of the relationships of feeding management and breeding with carcass quality should be commenced whenever possible.

The Technical Sub-committee on Beef Cattle suggested that in order to iron out differences in seasonal conditions and so feed variations from year to year, that the preliminary data be collected in each centre for a period of five years before actual trials be instituted. However, the relatively great uniformity of seasonal conditions in this State from year to year makes this lengthy collection of data unnecessary, and therefore the preliminary period was reduced to three years.

It was hoped that this work would also contribute to a raising of interest in beef production.

The Australian Meat Board agreed to provide finance for the purchase and installation of cattle-weighing scales, and the Rural Credits Branch of the Commonwealth Bank also assisted.

This note is intended as an introduction to a series of detailed reports on the work at each of three centres selected in this State to investigate the trend and rates of cattle fattening under different environments. A report will also be submitted on the influence of calving date on growth rate.

The centres where the studies are being conducted in Western Australia are:

1. **Wokalup Research Station**—situated in the coastal plain 91 miles south of Perth. It has an area of 2,200 acres of which approximately 700 are under pasture. The property is suitable for dairying and fattening. Since the inception of the work, irrigation waters have become available for part of the property. The average rainfall of Harvey (4 miles distant) is 40 inches. Investigations were commenced in October, 1950. Since the summer of 1953-54, some comparisons have been made of growth rates on irrigated and unirrigated pasture.

2. **Pardalup Prison Farm**—situated 18 miles west of Mt. Barker, which is 30 miles north of Albany. The property comprises approximately 10,000 acres of which less than 1,000 have been improved. The average rainfall is 32 inches. The studies commenced in September, 1952, and so far growth trend data only has been collected.

3. **Narra Tarra**—near Geraldton, a property owned by Messrs. F. Green & Sons. It is situated 8 miles north-east
FIG. I. TYPICAL GROWTH CURVES AT THREE CENTRES IN WESTERN AUSTRALIA


PARDELUP PROJECT I. Period December 24, 1952 to January 20, 1954.

of the town and is typical of a restricted area of good pasture country. On the completion of the three years' programme and the establishment of what is accepted as a normal pattern of growth for the district, it was decided to transfer the scales to another centre, and during the latter part of 1955, they were installed on the property of Mr. P. Lefroy at Cranmore Park, near Walebing, where investigations have now been commenced into the value of supplementary feeding.

GENERAL

The pattern of growth at each property has been shown to follow a regular seasonal trend (see Fig. 1). There is in each case, a distinct period of rapid gain, a static period, and in some cases a period of declining weight. The information which has been obtained will be most valuable in designing trials into methods of extending the period of seasonal growth and of lifting the rate of gain.
For example, work has already been carried out at the Wokalup Research Station studying the use of summer-irrigated pasture in supplying high quality grazing between successive periods of annual pastures, as a means of achieving uninterrupted growth throughout the year (see Fig. 3).

The influence of having cattle on good pasture throughout the year as compared to keeping them on restricted feed can be seen clearly from Fig. 2, which shows the growth curves for groups in two years at the Pardalup Farm. The season 1955 was very good and for the first time it was possible to keep the weighing group of cattle on good pasture from early in the season, whereas in other years the stocking position on the property necessitated the use of bush paddocks for a considerable proportion of the year.

The data demonstrates that a long period of rapid growth is possible and allows consideration of the practical steps which may be taken to achieve it.

At Cranmore Park, work has been commenced in studying the influence of supplementary feeding during the summer months, in order to stimulate a greater total growth of the animals.

Work at the Centre in the future will include a study of the influence of the calving date upon weight at the optimum marketing time.

FIG. 2. EFFECT OF SEASON AND IMPROVEMENT IN GRAZING ON GROWTH.

PARDALUP.

PROJECT 1. —— On bush feed and some pasture.
PROJECT 2. ———— On good pasture.

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VALUE OF IRRIGATED PASTURE IN SUMMER MONTHS.

WOKALUP.

PROJECT 4 GROUP B. --- On irrigated pasture
PROJECT 4 GROUP C. --- On couch grass, unirrigated but with abnormal February rain.

PROJECT 2 GROUP F. --- On unirrigated pasture, hills and flat.

--- Lb

1100.

1000.

900.

800.

700.

600.

500.


Period ------------ December 16, 1951 to May 8, 1952.

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Data on this subject has been accumulating for the cattle at the Wokalup Research Station for the past four years, and a report will be published in this series.

The studies have therefore achieved the first aim set out in the basic preschedule for this work, i.e. established acceptable growth curves as normal expectations for the various parts of the State.

It is not suggested that it has been demonstrated for the first time when cattle fatten and when they do not. Cattle raisers, from their experience, have known when their animals are fattening, when they are at maximum weights, and when best to sell. The data accumulated, however, gives a factual background to beliefs based on observation rather than measurement.

It will be of value also in providing factual data to extension officers for use in assisting farmers who are turning their attention to cattle raising.

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