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# **Growth rates of beef cattle recorded in Queensland commercial herds**

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## PREFACE

An animal's live weight is the prime indicator of its performance and the productivity of the pasture on which it grazes.

From the early 1960s a large number of trials in which beef cattle were weighed were conducted on commercial properties by officers of the Queensland Department of Primary Industries. These properties were located throughout much of Queensland and so the weights obtained were a measure of the performance of cattle on a variety of pasture communities throughout Queensland. The observations were conducted during different periods of the year and so the weights recorded also reflected seasonal performance of beef cattle throughout the State.

In 1983 Marcus Durand, Director of the Beef Cattle Husbandry Branch, suggested the compilation of the data from the observations in which weights of animals were recorded would provide a valuable reference of expected performance of beef cattle and the pastures they grazed. To serve this purpose, the average performance of treatment groups rather than individual performance was considered to be most important.

Thus the data compiled were on a group basis. Generally the data compiled were the means of the treatment groups that made up the design of the observation. However, when it seemed useful and the data available permitted it, groups were specially created and the means of these recorded in the compilation. An example of this was the construction of groups on the basis of breed or sex.

The data compiled consisted of the mean weights of the treatment groups and other group data such as breed, age, sex, treatment, the pasture grazed and details of any supplements fed. Rainfall data was also included when it was provided.

The data compiled were those recorded from observations conducted during the period 1962 to 1984. Although every effort was taken to include all observations in which weighing was undertaken, the observations listed should not be considered to be exhaustive.

Users of these data should note that the mean weights and growth rates contained herein are either simple arithmetic means or those derived from a statistical analysis. Means have been used in this compilation whenever the data were available. Because of the above structure of the database, the statistical analysis of the data should be carried out only after biometrical advice.

P.J.S. Hasker

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## EXPLANATIONS

The data for each project are compiled in two forms; one provides information of a commentary nature and the other data of a specific nature. Copies of these are on the computer disk accompanying this document. The commentary data is held in two files, COMMENT1.W51 and COMMENT2.W51. The specific data is contained in the files DATA1.W51, DATA2.W51 and DATA3.W51. The files are formatted for Word Perfect 5.1.

The following descriptions of some of the data in the data file will assist with its interpretation.

### GROUP

The groups are described in the commentary file. Whenever possible control treatments were designated as Group 01. Where possible, the numbering of male and female groups was made sequential for each sex:

01	male control
02	male treatment 1
03	male treatment 2
04	female control
05	female treatment 1
06	female treatment 2

Where possible, the numbering of groups of cows and their calves was made as follows:

Cows	Calves
10	15
20	25
30	35
40	45

### DATE BEGIN, DATE END

These were the dates on which the trial began and terminated. In most cases they coincided with the first and last weighing, but this was not so when the trial animals had to be treated in some way prior to the first weighing (eg, settle onto a crop or supplement) or after the final weighing.

### PERIOD 2

This is the summary of weight gain either (1) after the termination of a treatment or (2) for a subsequent treatment. No entries were made in Period 2 unless the growth performance occurred within technically distinct periods. Generally three general situations occurred which may have resulted in a "post treatment" entry:

- (i) **Supplementation:** When a weighing was done at the time supplementation ceased, the summary of that performance to date was entered in Period 1 and subsequent performance in Period 2. Should it have been impossible to enter distinct performance data for a supplement period and a post supplement period, the performance is entered in Period 1.

- (ii) **Change of diet:** A group may have been subjected to a period on one diet and then a period on another, for example:

First period	Second period
Crop A	Crop B
Stubble A	Crop B
Pasture A	Crop B
Crop A	Pasture B
Pasture A	Supplement B

In each case the performance data for the first period was entered in Period 1 and the performance data for the second period in Period 2.

When a group was subjected to three or more different diets, the performance in the final period was entered in the Period 2 section and the performance up to the final period in Period 1.

- (iii) **Growth treatments, parasite control, treatments not covered by (i) and (ii) above:** Entries for Period 1 and Period 2 were only made when this could be done with some degree of meaning and consistency. When it could not, the performance of the group was entered in Period 1.

#### AGE

The age at the start of the trial, i.e. the first weighing.

#### CLASS

Possible entries were calf, weaner, bobby calf, first calf heifer, breeder cow.

**Calf** All animals suckling at the start of trial.

**Weaner** Animals which were weaned at the start of the observation, immediately after the start of the observation, immediately before the start of the observation, or had been weaned well before the start of the observation but were referred to as weaners.

#### MISC TREATMENTS

These consist of treatments with growth factors (e.g. trace elements, vitamins, antibiotics, hormones), treatments against parasites and surgical treatments (e.g. dehorn, spay, castrate) and vaccination.

#### INITIAL DATE

The date the group was first weighed.

**FINAL DATE**

Two situations occur:

- (1) When no entries were made in Period 2, the very last weighing of the group was done on this date.
- (2) When an entry was made in Period 2, the weighing was not the very last for the group. It is the date of a weighing made at the end of a period of interest; one or more weighings were carried out subsequently.

**NO. HEAD**

The number of animals in the group or the number used to calculate the mean weight of the group.

**WEIGHT**

The mean weight of a group. This may be an arithmetic mean or a statistical analysis mean.

Keep the following in mind when comparing weights of different weighing dates. The weights recorded for each weighing may be biased depending on the animals missing and the number present at each weighing. Even with the same number of animals it is possible they may not be the same ones that were weighed on each occasion.

**CHANGE**

The mean live weight change of the group from the initial to the final weighing.

**LAST WEIGHED in Period 2**

The date of very last weighing of the project.

**NO. DAYS in Period 2**

The number of days from the final weighing in Period 1 to last weighing in Period 2.

**LAST WEIGHT in Period 2**

The mean weight of the group at the very last weighing.

**DAILY CHANGE in Period 2**

The change in weight during Period 2 divided by the number of days in Period 2.

## **WEIGHT STATUS**

This shows whether animals were weighed full or empty, or whether the weights recorded for the group were the output of statistical processing.

When animals were weighed full or empty, FULL or EMPTY was entered. If it was unknown whether animals were weighed full or empty then "? W.STATUS" was entered.

If the means were the output of statistical processing then L.S.MEANS was entered.

## **BASAL CONTINUOUS**

A paddock may have provided basal or supplemental grazing and may have been grazed continuously or periodically. As no supplemental grazing observations were compiled all grazing was entered as basal continuous.

## **REGIME**

Entries were one of the following:

- Native pasture
- improved pasture - rain grown
- improved pasture - irrigated
- crop - rain grown
- crop - irrigated
- crop - undersown with pasture
- stubble
- browse
- mixed
- other

## **COMPONENT**

This is an estimate of how much of the grazing a specific species contributed. This may be a percentage or one of the following:

- unknown
- some
- predominant (more than 50% of pasture)
- dominant/mainly (no one species makes up more than 50%)
- reverted to
- 100% or totally

## **FERTILISER**

Entries were made only for trials having fertilised and unfertilised treatments.



**FED: Dates for supplementation period**

In supplementation trials, if no dates for the beginning and end of supplementation were reported then the dates of the first and last weighing were entered. The commentary file gives details on supplements fed.

**REASON for feeding**

This entry was most often "low quality pasture". Other possibilities were: unspecified, drought, complementary (to improve growth rate of animals grazing crop), substitution (to extend grazing when animals were grazing crop) and calf rearing.

**METHOD of feeding**

The entries available were one of the following: unspecified, block, trough, ground, lick, self feeder, creep, rack, drinking water and other methods.

**FEED FREQ**

The entries available were one of the following: unspecified, continuous, twice daily, daily, every 2 days, every 3 days, twice weekly, weekly, other. Licks were considered to be available on a continuous basis.

**AMOUNT EATEN**

This refers to the total mix not the ingredients.

**UNITS**

The unit of measure (kg, lb, oz, etc) of the quantities in the supplement.

**SEE COMMENTS**

The user should refer to the commentary file.