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Summary

THE DAILY WATER CONSUMPTION OF A HERD OF DAIRY CATTLE

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IN THE 1954-55 SEASON from October to April, the water drunk by a 33-cow Jersey herd in milk was measured on 99 days. The cows were continuously outdoors on pasture which was supplemented with choumoellier or pasture silage from mid-December onward. The mean consumption was 5.9 gallons per cow daily with a range from 1.4 gal. to 11.5 gal. A number of multiple regression equations was calculated providing estimates of the effect of milk yield and meteorological variables upon herd water consumption. In all cases the percentage of the variation in water consumption explained by the independent variables was less than 50 per cent.

In the 1956-57 season, data are being collected from a similar herd over the same period of the year, but the weight of each drink of each cow is being recorded. Only preliminary analyses are available at this stage.

The data illustrate the considerable variation occurring between individual cows in the number of drinks, the timing of the first drink, and the weight of water drunk daily. This is significant in relation to the use of water as a vehicle for introducing other substances into cows—e.g., oils for bloat control.

During the months of October and November when pasture was the sole feed, of the 982 recorded drinks, approximately two-thirds fell between 10 and 30 lb.

Examination of the drinking habits of the herd showed relatively active drinking periods occurring at early post-morning milking, mid-morning, midday, post-evening milking and toward midnight. However, the pattern of drinking was quite variable, being greatly influenced by changes in weather and stock management.

In a period in October and November of 1954, when pasture was leafy and in adequate supply, and weather

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conditions temperate, opportunities for a group of cattle for drinking water were restricted to twice daily at milking. Neither the yield of milk nor fat was affected by this treatment under these conditions. The efficiency of the experiment was such that a small difference would have been detected.

DISCUSSION

Q : : *Did you make any observations on the effect of rainfall and its influence on the cows' drinking habits?*

A : : Daily total rainfall figures were available for the whole period, but were not closely related to the water consumption. However, on those occasions when the weather was wet for most of the day, less water was consumed.

Q : : *Did you experience any great variation in the water intake between individual cows?*

A : : There was marked variation.

Q : : *One of the problems in running dairy farms is that of finance and some recently settled farmers in my area have been concerned at the cost of extending the water supply on their farms. One farmer up towards the Kaimai ranges had only one water trough on the farm when he first took it over. He increased his subdivision and watered his cows at the shed twice daily. Subsequently, he extended his water supply but got no increase in production whatsoever. Another farmer in the Maungatautari district had a similar experience. Would Professor Campbell care to comment on this?*

A : : From our observations it is clear that cows are adaptable in their drinking habits. With fewer opportunities to drink they will, if necessary, increase their consumption per drink. Whether twice daily watering is adequate or not under New Zealand grazing conditions, and under different types of feed and weather, is yet to be fully investigated. On our present evidence, it seems that it is adequate when the pasture is lush and the weather cool.

Q : : *In the field the opinion is widely held that adding oil to the water for bloat control reduces the water intake of the cows. Has Professor Campbell any information on this?*

A : : No. We have noticed, though, that a small contamination with dung reduces intake over short periods.

Q : : *Is there any indication that the drinking of large amounts of water is desirable?*

A : : Adequate water gives a more contented animal and may assist in temperature control on extremely hot days. What the respective effects are of large as against small drinks on the process of fermentation in the rumen would be interesting information.

Q : : *Is there any indication that bloated cows drink more water than non-bloated animals?*

A : : A number of the animals under observation were badly bloated at times. There was no evidence of increased water consumption in these cases.