

FALLING OFF IN MILK YIELD DUE TO TIME SINCE CALVING.

Loss at the end of	Average falling of in, gallons.	Proportion approximately	If proportion exact, gallons.
1 month.....	19	One-eighth = $\frac{1}{8}$	18
2 " .....	33	Two eighths = $\frac{1}{4}$	36
3 " .....	51	Three eighths = $\frac{3}{8}$	54
4 " .....	71	Four eighths = $\frac{1}{2}$	72

information upon this difficult question could be gathered, the following table was drawn up, showing the average percentage of the chief constituents of milk produced upon the various fields during each month, also stating the number of days' milk which these averages represent. The results are interesting, but they do not warrant any hard-and-fast conclusions being drawn therefrom.

1. It will at first sight be noticed that the milk improves in quality each month upon all the fields.

2. It will next be noticed that the milk produced in August on the Leaze and Stevens is superior in solids and fat, and inferior in casein, to that produced on the Summer Leaze and Leaze, and that the same result is obtained in September. This might have been accidental, but curiously enough the milk produced upon the Front and the Leaze is superior in both solids, fat, and casein, to that produced upon the Oxen Leaze and Leaze, or upon the Mixed Fields during August, while the same relative superiority is maintained throughout both September and October. This comparison might be carried further, but sufficient has been pointed out to show that in this distance there would appear to be a fluctuation in the constituents of the milk depending upon the pastures, which is independent of that fluctuation in quality due to season, or the prolongation of the time the cows have been in milk.

There are some minor subjects arising out of this table of averages, one of which is of considerable interest. There are few, if any, continuous series of analyses of milk in which the percentage of casein has been determined; the result is, that a somewhat new and important fact is revealed regarding the fluctuations of this constituent. It

will be noticed that the casein is affected both by the time of the year and by the nature of the pasture, though it is only to a slight extent as compared with the variations in the fat.

#### *Summary of results.*

From the preceding facts it would appear that *quantity* of milk depends mainly upon succulent food. Thus, where the conditions are favourable to the production of abundant grass, be those conditions local or climatic, the maximum milk yield has been obtained.

The *quality* of milk appears to depend upon far more numerous factors. The cattle themselves, and the nutriment in their food, are the primary causes of fluctuation. But it will be seen that the nutriment in the food depends not only upon the character of the soil but also upon climatic conditions. Moreover, the milk will vary in quality not only in a general way, by at times containing more solid matters than at other times, but there is distinct evidence that the constituents of these solids also vary according to the food of the cows.

#### *The volume of morning's and evening's milk.*

During the whole period of these observations, the volume of morning's milk has always been greater than that of the evening's. The maximum variation is in the month of October, the smallest variation is in the month of July. The volume of the morning's milk in April is one-fifth more than that of the evening's; in May it is one-sixth, in June one-eighth, in July one-twentieth, in August one-eighth, in September one-fifth, and in October one-fourth. Hence the relative increase is greatest in October, and next in April and September.