

all figures are reduced to one basis, and comparison can thus be more readily made. One striking point is that for the fourth test all breeds practically coincide. The Red Polls and Jerseys agree fairly closely from the sixth test onwards, and the Ayrshires and Friesians agree quite well right through except for the difference in dip. It is interesting to note that for the first lactational test the Jerseys commence at a considerably lower point than do the other breeds.

The next aspect worthy of consideration is the average total range of variation—*i.e.*, the difference in the average of the highest and lowest tests for all cows of each breed. Table 9 gives the results of this analysis. The only point of particular interest brought out in this table is in regard to the average lowest test. With the exception of the Jerseys, it appears that the average lowest lactational test is practically a constant percentage of the average annual test. The average highest lactational test, therefore, is mainly responsible for the total range of variation. The total range of variation, however, appears to be a peculiarity of the breed, as it bears no apparent relation to the average test for the year.

Table 9. Range of Variation in Lactational Tests of the Chief Breeds.

Breed.	Number of Records.	Average Test.	Lactational Tests.		Total Range of Variation.	Percentage Range of Variation.	Highest Test expressed as Percentage of Average Test.	Lowest Test expressed as Percentage of Average Test.
			Average Highest Test.	Average Lowest Test.				
Jersey ..	163	5.66	7.01	4.68	2.33	41	124	83
Red Poll..	34	4.37	5.51	3.82	1.69	39	126	87
Milking Shorthorn	263	3.99	5.01	3.47	1.54	39	126	87
Friesian ..	1,042	3.55	4.37	3.12	1.25	35	123	88
Ayrshire..	113	4.12	4.95	3.64	1.31	32	120	88

LACTATIONAL VARIATIONS DUE TO TIME OF YEAR OF CALVING.

In Graphs 5 and 6 it is readily apparent that the influence of the factor of time of year of calving on the lactational-test variations is considerable.* The first test and the number of records for each curve are given on the left and right respectively. In conformation the curves for similar periods for Ayrshires and Milking Shorthorns bear a striking resemblance, and this indicates that the effect on these two breeds is similar. The dip in the curves becomes smaller up to the month of October, when it almost entirely disappears. The result is practically a straight line with a uniform upward trend from beginning to end. The curves for the summer period exhibit a shallow dip and a "falling away" towards the latter end. This falling-away tendency can be noticed slightly in the September and more distinctly in the October curves. However, the quantity of data available in the case of the Friesians is sufficiently large to show curves for each month of commencement.

* The curves shown in these two graphs are of the "smoothed" type.