

**NOTE ON THE COMPOSITION OF MILK YIELDED BY COWS FED ON PASTURE MANURED WITH PHOSPHATES AND POTASH.**

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IN an experiment conducted at Kingston, Derby, by J. F. Blackshaw (Midland Agricultural and Dairy College, Bulletin No. 1, 1910) it was found that an increased milk yield and considerable profit were obtained on the manured half of a pasture field, as compared with the unmanured half. The manures used were superphosphate 4 cwt. and sulphate of potash  $1\frac{1}{2}$  cwt. per acre.

It was felt that there would be an added interest if the composition of the milk obtained from each portion of the pasture were also examined, chiefly with the view of seeing whether the proportions of phosphoric acid and potash were increased in consequence of the manuring.

The pasture was of decidedly poor quality, and much needed manure, so that it benefited greatly from the application of phosphate and potash.

Two cows were put upon each plot, and, in order to eliminate some of the factors which would affect the result through the individuality of the animals, the cows were changed every fortnight from the one portion to the other.

The milk of each cow was weighed each time of milking, and the fat determined in this. The results show, generally, a marked increase in yield on the manured half. The percentage of fat was slightly higher in the milk from the unmanured plot, but the percentage composition of the other constituents were not materially affected by the manuring.

Determinations of the mineral constituents were made in samples taken fortnightly throughout the period of experiment, which lasted from May 24 to November 8, 1909. For that part of the time during which strict comparison of the unmanured (A) and manured (B) halves could be made, the following results were obtained :

Period.	Cows.	Plot.	Fat.	Solids-not-Fat.	Proteins.	Ash.	Phosphoric Acid.	Potash.	Lime.	
			Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	
1	...	1 and 2	A	3.10	9.23	3.34	0.75	0.22	—	0.18
		3 and 4	B	3.15	8.88	3.32	0.75	0.20	—	0.18
2	...	1 and 2	B	3.29	9.13	3.20	0.88	0.24	0.20	0.18
		3 and 4	A	3.82	8.46	3.20	0.82	0.20	0.21	0.17
3	...	1 and 2	A	3.27	9.10	3.37	0.73	0.22	0.18	0.17
		3 and 4	B	3.33	8.98	3.49	0.72	0.21	0.16	0.15
4	...	1 and 2	B	3.52	9.22	3.41	0.72	0.21	—	0.18
		3 and 4	A	4.21	8.79	3.26	0.73	0.20	—	0.18
Averages over entire period (May to Nov.) :										
		Unmanured plot A	...	...	...	...	0.73	0.21	0.19	0.17
		Manured plot B	...	...	...	...	0.73	0.21	0.18	0.17

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From these results it would appear that the manuring of the pasture with phosphate and potash had no effect in increasing the percentage of the phosphoric acid or potash in the milk as compared with that from unmanured land.

