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# Milk Production of the Sow

## (Summary)

D. M. SMITH, Ruakura Animal Research Station, Hamilton.

The milk yield of sows has been studied by various workers since 1896. Similarly the composition has been investigated at intervals over the last hundred years. While the results obtained have been valuable contributions to our knowledge of animal production, they do not allow specific rations to be laid down for the lactating sow, such as to obtain either maximum production or most economic production in terms of pigmeat produced per litter.

For this reason an investigation was started, aimed at finding (a) the milk yield of sows under certain specified conditions of feeding and management; (b) the composition of sows' milk under these conditions; and (c) the effect of changes in both quantity and quality of feed on the yield and composition of milk.

### Material and Methods:

The results summarised in this paper are from five sows, in their first, second and third lactations. The data relating to composition are from the third lactation only.

Rations Fed: All sows received skim-milk and a meal mixture consisting of 1 part of 60% protein meat meal to 3 parts barley meal by weight. Skim-milk constituted 40% of the ration.

The quantity received by each sow was based on the number of pigs in the litter, the total being made up of a standard ration of six units plus one for each piglet suckled.

The method of measuring milk yield involved (a) the observation of the suckling interval for the litters concerned over a 24-hour period once each week; (b) the use of this previously determined interval over the next 24-hour period during which the piglets were weighed before and after suckling. The difference in weight recorded represented the weight of milk suckled by each pig. The weight of milk yielded over 24 hours was multiplied by 7 to give the yield per week. The production of each sow was graphed and the average obtained by interpolation.

Milk composition was determined from samples obtained by injecting the sows with pitocin and drawing the milk off with a milking machine.

### Results.

The average yield per sow over a lactation of 8 weeks for the three seasons were:—

		Piglets suckled per sow.
1st Lactation	600 lb.	7.0
2nd Lactation	850 lb.	7.0
3rd Lactation	950 lb.	8.2

The average composition over the third lactation was:—

Fat	8%	Lactose	5%	Protein	6.5%
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## Discussion.

The average production results obtained in this preliminary investigation are far in excess of those quoted by overseas workers. We consider this fact alone warrants the extension of the work to include the measurements of the effects of differing rations and management practices. The investigation to date must be regarded only as a basis for further work, and the yields obtained will derive meaning from comparison with yields obtained under changed conditions.

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## Discussion on Mr. Smith's Paper

Mr. FLUX: Has there been any comparison of the composition of the milk at various stages of the milking? Would a sample from four quarters be similar to milk from all quarters? Was the shape of the lactation curve similar in all sows?

Mr. SMITH: The shape was similar in all sows except one, and these sows were all closely related: The foremilk is lower in fat, but the difference is not as great as is the case with cows. We still have a lot of work to do on the sampling technique and on the milking technique also. The sows gave 9oz. when suckled and up to 23oz. after pitocin. With small doses at 5-minute intervals they gave 9, 9, 4 and 1oz. We attempted to adjust the dose so that the sows gave the same amount as they would when suckled. This dose varied with the stage of lactation.

Mr. PATON: Could the sow be weighed before and after suckling to give the weight of milk removed?

Mr. SMITH: We have no scales that could measure differences of  $3\frac{1}{2}$ oz. in the weight of a 450lb. sow.

Mr. GERRING: Do feeding recommendations fit actual requirements?

Mr. SMITH: From later work, not reported here, it appears that recommendations are unduly high.

Mr. MACFARLANE: The success of the sow milking technique gives us a means of studying the fundamental nature of the process of milk ejection.