



FATS AND PROTEINS RESEARCH FOUNDATION, INC.

3150 DES PLAINES AVENUE • DES PLAINES, ILLINOIS 60018
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"THE DIRECTOR'S DIGEST"

D. M. Doty
Technical Director

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FPRF MEETINGS

The Research Committee will meet on February 10 and the Board of Directors on February 11; both meetings will be held at the Water Tower Inn in Chicago. If you know of items that should be discussed at either of these meetings please notify the FPRF office.

REPORT ON DAIRY CATTLE FEEDING TRIALS

In the November issue of "The Director's Digest" it was stated that preliminary data from the dairy cattle feeding trials made at the Wisconsin Alumni Research Foundation did not indicate any significant effects due to including tallow or tallow and sucroglyceride in the ration. However, the final report on this project shows that there was a definite response to feeding tallow. A summary of the project and the results obtained follows.

Three lots of four Holstein cows each were maintained in air conditioned quarters throughout the feeding trials. One lot received a typical grain ration and 1 1/4 lbs. of alfalfa hay per 100 pounds of body weight daily throughout the test. The second lot received the same basal ration during temperature adjustment periods but the grain ration was modified to include 6% fat (inedible choice white grease) during the test periods at 85°F. and 60°F. During the test periods the grain ration for the third lot was modified to include 5.6% fat and 0.4% sucroglyceride. The cows were held for an initial adjustment period of three weeks at 85°F., followed by a four week test period at 85°F., a two week adjustment period at 60°F. and a four week test period at 60°F. The following results were obtained.

1. There were no significant changes in body weight of the cattle or feed consumed, due to ration, at either 85°F. or 60°F.
2. No milk production response due to ration was apparent at either temperature.
3. There were no apparent differences in volatile rumen fatty acids resulting from ration or temperature.

4. Feeding of fat or fat plus sucroglyceride resulted in a definite increase in the butterfat content of the milk from cows held at 85°F. and an even greater and longer lasting increase when the cows were held at 60°F. (Table I). Sucroglyceride gave no response in addition to that observed with fat alone. Actually the effect of ration on butterfat content of the milk was somewhat more pronounced for cows producing milk of relatively low fat content than for cows producing milk of relatively high fat content.

Table I. The Influence of Ration on the Average Butterfat Content of Milk from Cows Held at 85°F. and 60°F.

Temp. °F.	Ration	Week	Basal	Basal + 6% Fat	Basal + Fat + Sucroglyceride
			Butterfat - %		
85	Basal	1	3.5	3.5	3.8
		2	3.2	3.5	3.6
		3	3.2	3.3	3.5
	Test	1	3.3	3.8	3.7
		2	3.3	3.7	3.8
		3	3.3	3.5	3.5
		4	3.3	3.7	3.6
	60	Basal	1	3.5	3.4
2			3.3	3.4	3.2
Test		1	3.6	4.2	3.9
		2	3.7	4.1	3.9
		3	3.6	4.2	4.0
		4	3.8	4.2	3.9

5. Total butterfat production followed essentially the same pattern as percent butterfat in the milk except for minor fluctuations resulting from changes in milk production. It would appear from these results that the inclusion of fat in dairy cattle rations might well be economically sound, especially for herds including cows that normally produce milk of relatively low fat content. A manuscript covering the results of this study will be submitted to the Journal of Dairy Science for publication.

REPRINT ENCLOSED

Dr. Allan Berne-Allen, technical consultant to NRA, presented a paper "Tallow Derived Surfactants: Superior Adjuvants for Agricultural Sprays" at the First World Fat Congress held at Hamburg, West Germany, in October, 1964. This paper has been published and a reprint is enclosed for your information. Additional research studies in this promising and important area are being sponsored by FPRF.