

There have been some interesting differences in the reproductive behaviour of the two types of yearlings for the three years of the experiment. The well-grown heifers show heat periods at an earlier age than the poorly-grown heifers, but require rather more services per conception. Over the three years 8 well-grown and 2 poorly-grown heifers failed to get in calf.

Cow Stage, 1946-47: This is the first season for which production results are available for the four groups referred to in the introduction to this project. These are summarized in the following table:—

Nutrition.				Butterfat.	Days in Milk.
Prior to Calving.		After Calving.			
				lb.	
High even	..	High even	..	294	281
Uneven ..	..	Uneven	..	255	283
High even	..	Uneven	..	280	281
Uneven ..	..	High even	..	285	300

As results will be influenced from year to year by seasonal conditions, it will not be possible to draw firm conclusions for a number of years.

Live-weight Changes.—At three years of age the cows which had been on a high even plane of nutrition throughout were 107 lb. heavier than those on an uneven plane throughout. The high-low and low-high groups occupied intermediate positions in that order, thus emphasizing the lasting effect of good nutrition during the first two years.

Winter Nutrition Project.—In this work the objective has been to measure the precise relationship between the level of nutrition during the dry period of the pregnant cow and her production during the subsequent lactation. Two evenly matched groups of cows were fed at different levels during the winter. The high-plane group was grazed on autumn-saved pasture* and received an ample supply of hay and silage, while the low-plane group was grazed on relatively bare pastures and received a limited hay ration. Two years' results now available are summarized in the following table:—

				High Plane.		Low Plane.	
				1945-46	1946-47	1945-46	1946-47
Season	..	..	..	13	18	13	18
Number of cows	..	..	..	7.0 lb.	7.6 lb.	5.5 lb.	3.2 lb.
Hay fed daily	..	..	..	37 lb.	*0	0	0
Silage fed daily	..	..	..	+30 lb.	+66 lb.	-83 lb.	-64 lb.
Gain or loss prior to calving	..	..	..	116 lb.	111 lb.	106 lb.	95 lb.
Loss at calving	..	..	..	59 lb.	57 lb.	50 lb.	53 lb.
Weight of calf	..	..	..	6,346 lb.	6,936 lb.	6,104 lb.	5,888 lb.
Total milk	..	..	..	330 lb.	374 lb.	304 lb.	312 lb.
Total fat	..	..	..	5.2	5.4	5.0	5.3
Fat per cent.	..	..	..	243	289	243	285
Days in milk	..	..	..				

* Silage was not available owing to drought in the previous season, but an extra quantity of autumn-saved pasture was fed.

Identical Twins: Collection.—Forty-five sets of heifers and 6 sets of bulls were collected at Ruakura during the season, bringing the total number collected to 170 sets.