

Working with seven pairs of identical twin bulls, uniformity data on reproductive behaviour have been extended, and previous indications as to the superiority of identical twin bulls for fertility investigations have been borne out by the results.

Previous work on the sexual strength of bulls fed on hard rations indoors, when compared with their co-twin fed on grass outside, indicated some superiority in the grass-fed animals, but the issue was confused by the complicating effect of exercise obtained by the grass-fed animals. During the year the effect of exercise upon sexual strength has been examined under carefully controlled conditions where an exercise difference alone existed. The data obtained show no beneficial effect of exercise.

Production of Artificially bred Heifers by Merit Sires.—In the 1946–47 season the first crop of artificially bred heifers on both Ruakura and outside farms came into production. Production averages of these heifers on each farm have been at extremely good levels and promise to raise the herd average by a worth-while amount:—

Herd.					Number of Heifers.	Production of Butterfat (Actual).	Mature Equivalent.	Production, Mature Cows same Farms.
						Lb.	Lb.	Lb.
A	..	..	..	..	13	283	353	361
B	..	..	..	..	14	305	375	346
C	..	..	..	..	6	325	395	339
D	..	..	..	..	12	255	325	279
E	..	..	..	..	9	286	356	339
F	..	..	..	..	3	274	344	279
G	..	..	..	..	7	285	355	289
H	..	..	..	..	39	280	350	..
S	..	..	..	..	103	284	354	324

Three bulls were used, and the tabulated results show that the production records of their artificially bred heifers under a wide range of farm conditions agreed reasonably closely with their sire survey results. Farmers have always questioned the sire survey system, on the grounds that the performance of a bull in one herd may not be any guide to his performance in another herd. The point is obviously basic to the whole principle of herd improvement through the use of proven sires.

				Official Survey.		Artificially Bred Daughters.	
Greencroft ..	..	Dams	..	(41)	346	(10)	340
Hopes Prince	..	Daughters	..	(41)	374	(10)	363
		All daughters	..	..	..	(35)	374
Kuku ..	..	Dams	..	(13)	367	(19)	356
Butterking	..	Daughters	..	(13)	373	(19)	352
		All daughters	..	..	..	(40)	353
Awatea Phil	..	Dams	..	(8)	389	(9)	316
		Daughters	..	(8)	387	(9)	370
		All daughters	..	..	..	(29)	342

During the current season a further crop of daughters by better average-quality bulls have come into production. Results will be reported next year.

Surplus-grade heifer stock bred at Ruakura by proven sires and sons of proven sires are being placed on selected farms to provide a complete picture of breeding results and to obtain data on the performance of comparable cattle in other districts. As