

Uniformity Trials: Milk-production.—Nine sets of twins calved sufficiently close together to provide data on the uniformity of twins in respect to milk and butterfat production. The records, reduced, where necessary, to a standard lactation length of 255 days, are given in the following table, and show how closely identical twins resemble each other in milk-production:—

Twin No.			Milk Yield.	Butterfat Yield.	Test.	Casein Yield.	Casein.
			lb.	lb.	Per Cent.	lb.	Per Cent.
T. 1	..	..	5,042	266	5.3	141	2.8
T. 2	..	..	5,275	278	5.3	144	2.7
T. 3	..	..	4,032	240	6.0	105	2.6
T. 4	..	..	4,157	248	6.0	110	2.6
T. 11	..	..	3,833	222	5.8	99	2.6
T. 12	..	..	3,621	216	6.0	93	2.6
T. 13	..	..	3,943	212	5.4	98	2.5
T. 14	..	..	4,085	211	5.2	98	2.4
T. 17	..	..	5,781	323	5.6	154	2.7
T. 18	..	..	5,623	315	5.6	149	2.6
T. 23	..	..	200	11	..	6.5	..
T. 24	..	..	127	5	..	3.6	..
T. 27	..	..	4,120	216	5.3	109	2.6
T. 28	..	..	4,100	221	5.4	109	2.7
T. 29	..	..	5,205	242	4.7	129	2.5
T. 30	..	..	5,395	245	4.3	135	2.4
T. 31	..	..	349	17	..	9.0	..
T. 32	..	..	363	17	..	9.0	..
Variance ratio *			45	109	31	101	21

* T. 23 and T. 24 and T. 31 and T. 32 have been omitted from these calculations, as their inclusion would overemphasize the relative usefulness of twins.

The figures for variance ratio give an indication of the superiority of identical twins for research work—for example, in an experiment involving butterfat yields the results from one pair of identical twins would be approximately as valuable as those from two groups of 109 cows each.

Grazing Behaviour.—As the grazing behaviour of dairy cattle is a factor of considerable importance in dairy-cow production in New Zealand, the usefulness of twins for grazing-behaviour studies has been measured. Twins were found to be much more alike than non-twins in respect of grazing-time, loafing-time, lying-time, the distances walked, number of defæcations and micturations, and number of drinks. During the present season studies have also been made of the relation of weather, production level, stage of lactation, season, and nutritional level to grazing behaviour.

Growth.—Growth trials involving 42 sets of twins reared under the same conditions show that identical twins grow much more uniformly than other calves and that for growth during the first year of life they may be considered approximately twenty-five times more useful than other calves.

Quantitative Relationship of Pasture and Pasture plus Concentrates to Butterfat production.—In this project identical twins are being used to compare the butterfat-producing quantities of two levels of pasture and to assess the effect of feeding concentrates to the cows fed at the higher level. Small areas are enclosed in wire-netting frames during the grazing periods, and at the end of these the pasture in the frames is clipped to the level of the grazed pasture and from the weight of clippings the amount eaten is estimated. The composition and digestibility of the clippings are also estimated. Efforts are being made to calculate intake by the use of indigestible markers, such as