

Ruakura Grade Herd Project.—In this project the objective is to build up a herd of grade cows from a low standard to a 400 lb. butterfat per cow level by the continuous use of proven sires and artificial insemination.

In the 1947-48 season 19 two-year-old and 2 three-year-old daughters of merit bulls completed their lactations. Average production was as follows :—

—	Number.	Milk.	Butterfat.	Days.
Three-year-olds ..	2	lb. 7,410	lb. 429	275
Two-year-olds ..	19	5,484	290	284

On these figures, the average maturity equivalent for these cattle averages 369 lb. butterfat per cow in 283 days.

A further 26 two-year-old daughters of proven bulls calved during the current season in this herd.

Ruakura Pedigree Herd Project.—Here the objective is to see whether the proven-sire system of breeding is capable of maintaining a herd average of 400 lb. butterfat standard indefinitely. Production for the pedigree herd in the 1947-48 season was as follows :—

—	Number.	Milk.	Fat.	Days.
Mature cows ..	14	lb. 7,656	lb. 429	283
Two-year-olds ..	18	5,677	322	290
Herd averages ..	32	6,543	369	287

The maturity equivalent of the two-year-olds thus averaged 392 lb. butterfat. The maturity equivalent of the whole herd averaged 408 lb. butterfat. A further 6 pedigree two-year-old daughters of proven sires calved this season.

Identical Twins.—(a) *Collection* : A very successful season was experienced, 40 sets of heifers and 5 sets of bulls being located in a period of four weeks and mainly within the Waikato area. Five sets were transferred to the Dairy Research Institute. The total number located to date is 208 sets.

(b) *Uniformity Trials.*—*Production* : Further observations on the uniformity of identical twins under the same environmental conditions have been made. From these, efficiency values for production characters have been calculated. This value measures the number of animals selected at random to which one twin animal is equivalent, and thus provides a measure of the relative value of identical twins over randomly-selected cattle for experimental purposes. Emphasis must be placed on the value of the figures as guides rather than as absolute measures in this connection, as they have been obtained from only 9 sets :—

Milk yield ..	..	..	..	..	22
Butterfat yield ..	..	..	..	..	54
Butterfat test ..	..	..	..	..	15
Casein (per cent.) ..	..	..	..	..	10
Casein yield ..	..	..	..	..	50

A further 16 sets of twins have been milked under uniform conditions during the current season.