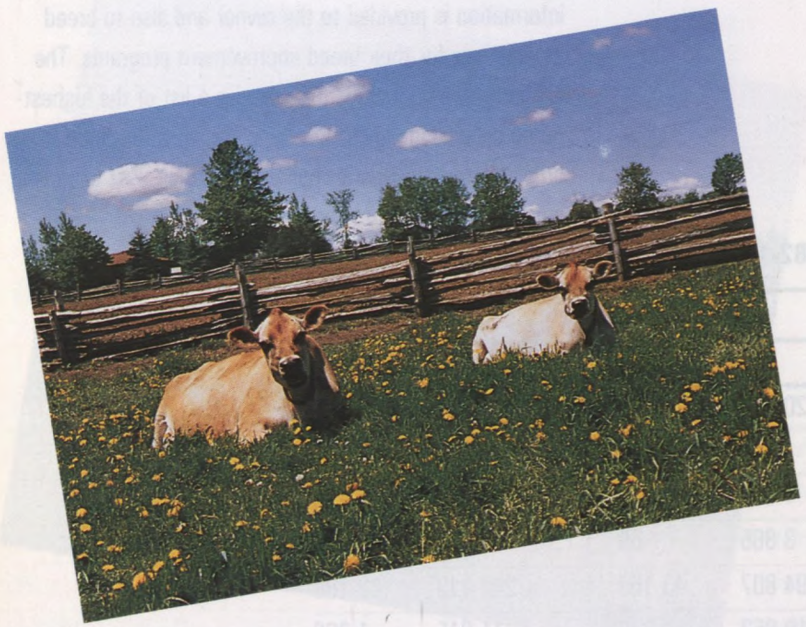
Artificial Insemination (AI)

Artificial insemination (AI) is used extensively by Canadian dairy cattle breeders as about 90 percent of the calves registered each year are the result of AI services. There is a strong demand for superior proven AI sires. To meet this demand Canadian AI businesses conduct Young Sire Proving Programs whereby specially selected young bulls are sampled in many herds for a short period of time. The number of young bulls tested per year has doubled in the past five years and has reached a level of about 325. After the sampling period, they are then withdrawn from service until the performance and conformation of the daughters are known. Sires with proven superiority are then returned to wide usage.

This process of selecting, sampling and culling all except superior bulls ensures that the best genetic material is being transmitted and dispersed through Canadian herds.



Embryo Transfers

Another tool for genetic advancement is embryo transfers. Embryo transfer technology is relatively new, but it is without doubt state of the art in Canada. For many years, breeders have had access to superior quality genetic material through frozen semen, but there is access to only one side of the pedigree, i.e. the sires. Now through embryo transfers, either fresh or frozen, access is possible to both sides of the pedigree, i.e. the dams as well as the sires.

General Progress

All breeds had a significant genetic improvement during the past 10 years. The average rate of improvement exceeded 120 kg of milk per cow per year or more than 1 200 kg for the period, while the butterfat test remained about even.

Relation of Genetic Quality to Cost of Production

In all countries the cost of producing milk is influenced (a) by the costs of various requirements such as feed and labour and (b) by the degree of productivity developed in the cattle to which these requirements are applied. Productivity is limited to the levels set by the genetic make-up of the cattle. There is, therefore, a point beyond which production costs cannot be significantly reduced through management. The producing efficiency of a dairy herd is governed by two main factors: