

to adapt to their new environment before being tested over a 140-day feeding period. Average daily gain is the only trait evaluated as it is devoid of pre-weaning influences. Scrotal size measurements are also taken to assess the bull's potential for breeding.

Approximately 10 000 bulls are tested per year under this program. The test station provides an ideal opportunity for the purchase of thoroughly tested, promising young bulls.

EXPECTED PROGENY DIFFERENCES

As half of the genetic information of a parent is passed on to its progeny or offspring, selective breeding can improve the genetic quality of beef cattle. While measuring performance is an important step to breed improvement, performance is affected by both genetics and environment. To improve genetic quality, an estimate of genetic worth is required. Expected Progeny Differences (EPDs), estimates of genetic quality, are available through many Canadian programs. EPDs

indicate the expected potential of the progeny of an animal, relative to breed average. For example, an EPD of +19 for weaning weight indicates the progeny or offspring of an animal will average 19 lb (8.6 kg) above breed average. EPDs are available for traits such as weight and weight gain (birth, weaning, post-weaning yearling) and calving ease. Maternal calving ease and milk EPDs which indicate the calving and milking abilities of an animal's daughters are also available.

RESEARCH

Canada's Department of Agriculture maintains an extensive program of beef cattle research. Studies in genetics, nutrition, meats and physiology continually yield new knowledge that assists in the improvement of efficiency of beef production. Research in selection, crossbreeding schemes, estimation of body composition through ultrasonics, embryo transplants,

parasite control, and estrus synchronization has contributed greatly to the improvement of the Canadian beef herd.

Federal government research in beef cattle is further complemented by research being conducted among seven Canadian universities with faculties of agriculture, provincial departments of agriculture, and the private sector.